As filed with the Securities and Exchange Commission on May 3, 2017

Registration No. 333-216961

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

AMENDMENT NO. 1
TO
FORM S-4
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

OncoGenex Pharmaceuticals, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**2835**	**033-80623**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification Number)**

19820 North Creek Parkway
Bothell, Washington 98011
(425) 686-1500
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Scott Cormack
President and Chief Executive Officer
OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway
Bothell, Washington 98011
(425) 686-1500
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Alan Smith **Robert Freedman** **Kee Kim** **Amanda Rose** **Fenwick & West LLP** **1191 Second Avenue, Floor 10** **Seattle, WA 98101** **(206) 389-4510**	**Richard Stewart** **Chairman** **Achieve Life Science, Inc.** **30 Sunnyside Avenue** **Mill Valley, CA 94941** **(415) 670-9050**	**Rob R. Carlson** **Paul Hastings LLP** **1117 South California Avenue** **Palo Alto, CA 94304** **(650) 320-1800**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement and the satisfaction or waiver of all other conditions under the Merger Agreement described herein.

If the securities being registered on this Form are being offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box: ☐

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If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☒
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issuer Tender Offer) ☐

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer) ☐

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this proxy statement/prospectus/information statement is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This proxy statement/prospectus/information statement is not an offer to sell and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MAY 3, 2017

PROPOSED MERGER

YOUR VOTE IS VERY IMPORTANT

To the Stockholders of OncoGenex Pharmaceuticals, Inc. and Achieve Life Science, Inc.:

OncoGenex Pharmaceuticals, Inc., a Delaware corporation, or OncoGenex, Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex, or Merger Sub 1, Ash Acquisition Sub 2, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex, or Merger Sub 2, and Achieve Life Science, Inc., a Delaware corporation, or Achieve, have entered into an Agreement and Plan of Merger and Reorganization, or Merger Agreement, pursuant to which Merger Sub 1 will merge with and into Achieve, or the First Merger, with Achieve becoming a wholly-owned subsidiary of OncoGenex and the surviving corporation of the First Merger, or the Initial Surviving Corporation, and promptly following the First Merger, the Initial Surviving Corporation shall merge with and into Merger Sub 2 with Merger Sub 2 continuing as the surviving entity in the second merger as a direct wholly owned subsidiary of OncoGenex. These transactions are referred to herein collectively as the "merger." OncoGenex is expected to be renamed "Achieve Life Sciences, Inc." and is referred to herein as the "combined company." The merger will result in a clinical-stage pharmaceutical company focused on clinical and commercial development of cytisine, a selective nicotine receptor partial agonist currently in development for smoking cessation. In addition to cytisine, the combined company's pipeline will also include apatorsen, a once-weekly intravenous drug designed to inhibit production of heat shock protein 27 which may disable cancer cells' defenses and overcome treatment resistance. Consideration received by the combined company with respect to apatorsen will be subject to the terms and conditions of the contingent value rights, or CVRs, to be issued to existing OncoGenex stockholders prior to the First Merger. Following the issuance of the CVRs, the holders of CVRs may be entitled to 80% of certain consideration received by the combined company as a result of the achievement of certain milestones less certain agreed to offsets.

At the closing of the First Merger, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of common stock of OncoGenex, subject to adjustment as provided in the Merger Agreement based on increases or decreases in the number of Achieve's issued and outstanding capital stock and the number of shares of Achieve capital stock issuable upon the exercise of all issued and outstanding equity awards, the number of OncoGenex's issued and outstanding common stock, as well as the payment of cash in lieu of fractional shares. Immediately following the effective time of the First Merger, OncoGenex equity holders are expected to own approximately 25% of the outstanding capital stock of the combined company and the Achieve stockholders are expected to own approximately 75% of the outstanding capital stock of the combined company. Each unexpired and unexercised OncoGenex option, whether vested or unvested, will continue in accordance with its terms without amendment, cancellation or retirement. OncoGenex stockholders will continue to own and hold their existing shares of OncoGenex common stock in the combined company. The Merger Agreement contemplates that OncoGenex common stock will be subject to a reverse stock split at a ratio not to exceed one new share for up to every 20 shares outstanding, to be implemented prior to the consummation of the First Merger as discussed in this proxy statement/prospectus/information statement. OncoGenex's board of directors intends to set the specific ratio at the lowest ratio required to meet the minimum bid price requirements of the NASDAQ Capital Market.

Shares of OncoGenex common stock are currently listed on The NASDAQ Capital Market under the symbol "OGXI." Prior to consummation of the merger, OncoGenex intends to file an initial listing application for the combined company with The NASDAQ Capital Market pursuant to NASDAQ "reverse merger" rules. After completion of the merger, the combined company expects to trade on The NASDAQ Capital Market under the

symbol "ACHV." On May 2, 2017, the last trading day before the date of this proxy statement/prospectus/information statement, the closing sale price of OncoGenex common stock was $0.41 per share.

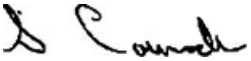
OncoGenex is holding a special meeting of stockholders in order to obtain the stockholder approvals necessary to complete the merger and related matters. At the OncoGenex special meeting, which will be held at , local time, on , 2017 at 1191 Second Avenue, Floor 10, Seattle, WA 98101, unless postponed or adjourned to a later date, OncoGenex will ask its stockholders to, among other things, adopt the Merger Agreement thereby approving the merger and the issuance of OncoGenex common stock, approve an amendment to the OncoGenex certificate of incorporation effecting a reverse stock split of OncoGenex common stock, at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting, and an amendment to the certificate of incorporation changing the OncoGenex corporate name to "Achieve Life Sciences, Inc.," each as described in this proxy statement/prospectus/information statement.

As described in this proxy statement/prospectus/information statement, certain Achieve stockholders who in the aggregate own approximately 78% of the outstanding shares of Achieve common stock, and certain OncoGenex stockholders who in the aggregate own 1.2% of the outstanding shares of OncoGenex common stock, are parties to support agreements with OncoGenex and Achieve, respectively, whereby such stockholders agreed to vote such shares in favor of approving the transactions contemplated by the Merger Agreement and against actions that could adversely affect the consummation of the merger. In addition, following the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, being declared effective by the Securities and Exchange Commission and pursuant to the conditions of the Merger Agreement, the Achieve stockholders who are party to the support agreements will each execute an action by written consent of the Achieve stockholders, or written consent, adopting the Merger Agreement, thereby approving the merger and related transactions. Therefore, holders of a sufficient number of shares of Achieve capital stock required to adopt the Merger Agreement will adopt the Merger Agreement, and no meeting of Achieve stockholders to adopt the Merger Agreement and approve the merger and related transactions will be held. Nevertheless, all Achieve stockholders will have the opportunity to elect to adopt the Merger Agreement, thereby approving the merger and related transactions, by signing and returning to Achieve a written consent.

After careful consideration, the respective OncoGenex and Achieve boards of directors have approved the Merger Agreement and the respective proposals referred to above, and each of the OncoGenex and Achieve boards of directors has determined that it is advisable to consummate the merger. The board of directors of OncoGenex recommends that its stockholders vote "FOR" the proposals described in this proxy statement/prospectus/information statement, and the board of directors of Achieve recommends that its stockholders sign and return the written consent indicating their approval of the merger and adoption of the Merger Agreement and related transactions to Achieve.

More information about OncoGenex, Achieve and the proposed transactions are contained in this proxy statement/prospectus/information statement. OncoGenex and Achieve urge you to read this proxy statement/prospectus/information statement carefully and in its entirety. IN PARTICULAR, YOU SHOULD CAREFULLY CONSIDER THE MATTERS DISCUSSED UNDER "RISK FACTORS" BEGINNING ON PAGE 26.

OncoGenex and Achieve are excited about the opportunities the merger brings to both OncoGenex and Achieve stockholders, and thank you for your consideration and continued support.



Scott Cormack
President and Chief Executive Officer
OncoGenex Pharmaceuticals, Inc.

Richard Stewart
Chairman
Achieve Life Science, Inc.

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Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this proxy statement/prospectus/information statement. Any representation to the contrary is a criminal offense.

This proxy statement/prospectus/information statement is dated , 2017, and is first being mailed to OncoGenex and Achieve stockholders on or about , 2017.

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ONCOGENEX PHARMACEUTICALS, INC.
19820 North Creek Parkway
Bothell, Washington 98011
(425) 686-1500

NOTICE OF SPECIAL MEETING OF STOCKHOLDERS

To Be Held On , 2017

Dear Stockholders of OncoGenex:

On behalf of the board of directors of OncoGenex Pharmaceuticals, Inc., a Delaware corporation, or OncoGenex, OncoGenex is pleased to deliver this proxy statement/prospectus/information statement for the proposed merger between OncoGenex and Achieve Life Science, Inc., a Delaware corporation, or Achieve, pursuant to which Ash Acquisition Sub, Inc., a wholly owned subsidiary of OncoGenex, will merge with and into Achieve, with Achieve surviving as a wholly owned subsidiary of OncoGenex, and promptly following that first merger, Achieve shall merge with and into Ash Acquisition Sub 2, Inc., a wholly owned subsidiary of OncoGenex, with Ash Acquisition Sub 2, Inc. surviving as a wholly owned subsidiary of OncoGenex. These transactions are referred to as the "merger." The special meeting of stockholders of OncoGenex will be held on , 2017 at , local time, at 1191 Second Avenue, Floor 10, Seattle, WA 98101, for the following purposes:

1. To consider and vote upon a proposal to approve the merger and the issuance of OncoGenex common stock in the merger pursuant to the Agreement and Plan of Merger and Reorganization, dated as of January 5, 2017, by and among OncoGenex, Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc. and Achieve, a copy of which is attached as *Annex A* to this proxy statement/prospectus/information statement, or the Merger Agreement;

2. To approve the amendment to the certificate of incorporation of OncoGenex to effect a reverse stock split of OncoGenex common stock, at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting, the form of which is attached as *Annex B* to this proxy statement/prospectus/information statement;

3. To approve the amendment to the certificate of incorporation of OncoGenex to change the name "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc.," the form of which is attached as *Annex C* to this proxy statement/prospectus/information statement;

4. To consider and vote upon an adjournment of the OncoGenex special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of OncoGenex Proposal Nos. 1, 2 and 3; and

5. To transact such other business as may properly come before the OncoGenex special meeting or any adjournment or postponement thereof.

The board of directors of OncoGenex has fixed , 2017 as the record date for the determination of stockholders entitled to notice of, and to vote at, the OncoGenex special meeting and any adjournment or postponement thereof. Only holders of record of shares of OncoGenex common stock at the close of business on the record date are entitled to notice of, and to vote at, the OncoGenex special meeting. At the close of business on the record date, OncoGenex had shares of common stock outstanding and entitled to vote.

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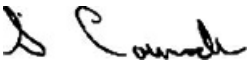
Your vote is important. The affirmative vote of the holders of a majority of the shares of OncoGenex common stock properly cast at the OncoGenex special meeting, presuming a quorum is present, is required for approval of OncoGenex Proposal Nos. 1 and 4. The affirmative vote of the holders of a majority of the OncoGenex common stock outstanding on the record date for the OncoGenex special meeting is required for approval of OncoGenex Proposal Nos. 2 and 3. Each of Proposal Nos. 1, 2 and 3 are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of Proposal Nos. 1, 2 and 3.

Even if you plan to attend the OncoGenex special meeting in person, OncoGenex requests that you sign and return the enclosed proxy to ensure that your shares will be represented at the OncoGenex special meeting if you are unable to attend.

By Order of the OncoGenex Board of Directors,



Scott Cormack
President and Chief Executive Officer
Bothell, Washington

, 2017

THE ONCOGENEX BOARD OF DIRECTORS HAS DETERMINED AND BELIEVES THAT EACH OF THE PROPOSALS OUTLINED ABOVE IS ADVISABLE TO, AND IN THE BEST INTERESTS OF, ONCOGENEX AND ITS STOCKHOLDERS AND HAS APPROVED EACH SUCH PROPOSAL. THE ONCOGENEX BOARD OF DIRECTORS RECOMMENDS THAT ONCOGENEX STOCKHOLDERS VOTE "FOR" EACH SUCH PROPOSAL.

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QUESTIONS AND ANSWERS ABOUT THE MERGER

Except where specifically noted, the following information and all other information contained in this proxy statement/prospectus/information statement does not give effect to the proposed reverse stock split of OncoGenex common stock, at a ratio not to exceed 1-for-20, described in OncoGenex Proposal No. 2 in this proxy statement/prospectus/information statement.

The following section provides answers to frequently asked questions about the merger. This section, however, provides only summary information. For a more complete response to these questions and for additional information, please refer to the cross-referenced sections.

Q: What is the merger?

A: OncoGenex Pharmaceuticals, Inc., or OncoGenex, and Achieve Life Science, Inc., or Achieve, have entered into an Agreement and Plan of Merger and Reorganization, dated as of January 5, 2017, or the Merger Agreement. The Merger Agreement contains the terms and conditions of the proposed business combination of OncoGenex and Achieve. Under the Merger Agreement, Ash Acquisition Sub, Inc., a wholly owned subsidiary of OncoGenex, will merge with and into Achieve, with Achieve surviving as a wholly owned subsidiary of OncoGenex, or the first merger, and promptly following the first merger, Achieve shall merge with and into Ash Acquisition Sub 2, Inc., a wholly owned subsidiary of OncoGenex, with Ash Acquisition Sub 2, Inc. surviving as a wholly owned subsidiary of OncoGenex, or the second merger. These transactions are referred to as "the merger." Following the merger, OncoGenex is expected to be renamed "Achieve Life Sciences, Inc." and is referred to herein as the "combined company."

At the closing of the first merger, each share of Achieve common stock outstanding immediately prior to the effective time of the first merger (excluding certain shares to be canceled pursuant to the Merger Agreement and shares held by stockholders who have exercised and perfected appraisal rights or dissenters' rights as more fully described in "The Merger—Appraisal Rights and Dissenters' Rights") will be converted into the right to receive approximately 4,242.8904 pre-reverse stock split shares of OncoGenex common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in the number of Achieve's issued and outstanding capital stock and the number of shares of Achieve capital stock issuable upon the exercise of all issued and outstanding equity awards, the number of OncoGenex's issued and outstanding common stock, as well as the payment of cash in lieu of fractional shares. The Merger Agreement contemplates that OncoGenex common stock will be subject to a reverse stock split at a ratio not to exceed 1-for-20, to be implemented prior to the consummation of the first merger. OncoGenex's board of directors intends to set the specific ratio at the lowest ratio required to meet the minimum bid price requirements of the NASDAQ Capital Market. As a result of the first merger, holders of Achieve stock are expected to own in the aggregate approximately 75% of the outstanding capital stock of the combined company, and the OncoGenex equity holders are expected to own in the aggregate approximately 25% of the outstanding capital stock of the combined company. Adjustments to the exchange ratio are described in more detail in the Merger Agreement and in this proxy statement/prospectus/information statement. After the completion of the merger, it is expected that OncoGenex will change its corporate name to "Achieve Life Sciences, Inc." as required by the Merger Agreement.

Q: What will happen to OncoGenex if, for any reason, the merger does not close?

A: If, for any reason, the merger does not close, the OncoGenex board of directors may elect to, among other things, attempt to complete another strategic transaction like the merger, attempt to sell or otherwise dispose of the various assets of OncoGenex or continue to operate the business of OncoGenex. OncoGenex may be unable to identify and complete an alternative strategic transaction or continue to operate the business due to limited cash availability, and it may be required to dissolve and liquidate its assets. In such case, OncoGenex would be required to pay all of its debts and contractual obligations, and to set aside certain reserves for potential future claims, and there can be no assurances as to the amount or timing of available

cash left to distribute to stockholders after paying the debts and other obligations of OncoGenex and setting aside funds for reserves.

Q: Why are the two companies proposing to merge?

A: Following the merger, the combined company will create a clinical-stage pharmaceutical company focused on clinical and potential commercial development of cytisine, a selective nicotine receptor partial agonist currently in development for smoking cessation. Two recent large-scale, investigator-led, Phase 3 trials conducted by third parties in over 2,000 patients demonstrated positive results. These Phase 3 trials reinforced results from historic Central and Eastern European studies in over 8,000 subjects. The results of the two Phase 3 clinical trials were published in the *New England Journal of Medicine* in September 2011 and December 2014. The product is currently marketed by a third party in Central and Eastern Europe and is believed to have treated in excess of 21 million patients. While third party trials of cytisine have been conducted that may support any future clinical trials by Achieve, Achieve has not yet submitted an Investigational New Drug application, or IND, to the U.S. Food and Drug Administration, or FDA, for cytisine or conducted clinical trials for cytisine in the United States or any other jurisdiction.

In addition to cytisine, the combined company's pipeline will also include apatorsen (OGX-427), a once-weekly intravenous drug designed to inhibit production of heat shock protein 27, or Hsp27, to disable cancer cells' defenses and overcome treatment resistance. Positive Phase 2 results were recently reported following final analysis of the Borealis-2™ trial of apatorsen in combination with docetaxel treatment that enrolled 200 patients with metastatic bladder cancer whose disease had progressed following first-line platinum-based chemotherapy. Patients who received apatorsen treatment experienced a 20% reduction in risk of death, compared to patients receiving docetaxel alone (HR=0.80; 95% CI: 0.65-0.98; p=0.078). Six previous randomized Phase 2 trials of apatorsen in several cancer indications failed to meet their pre-defined clinical endpoints. Efforts will continue to establish a strategic partnership to further the development of apatorsen.

OncoGenex and Achieve believe that the combined company will have several potential advantages, including: (i) a refocused pipeline with a product candidate that has demonstrated positive results in two Phase 3 clinical studies, one conducted in Europe and the other conducted in New Zealand; (ii) an efficient expected path to potential commercialization; (iii) operational synergies; and (iv) an experienced management team. For a discussion of OncoGenex and Achieve reasons for the merger, please see the sections entitled "The Merger—OncoGenex Reasons for the Merger" and "The Merger—Achieve Reasons for the Merger."

Q: Why am I receiving this proxy statement/prospectus/information statement?

A: You are receiving this proxy statement/prospectus/information statement because you have been identified as a stockholder of OncoGenex or Achieve as of the applicable record date, and you are entitled, as applicable, to vote at the OncoGenex stockholder meeting to approve among other things the merger and the issuance of shares of OncoGenex common stock pursuant to the Merger Agreement, or sign and return the Achieve written consent to adopt the Merger Agreement and approve the merger. This document serves as:

- a proxy statement of OncoGenex used to solicit proxies for its special meeting of stockholders;
- a prospectus of OncoGenex used to offer shares of OncoGenex common stock in exchange for shares of Achieve common stock in the first merger; and
- an information statement of Achieve used to solicit the written consent of its stockholders for the adoption of the Merger Agreement and the approval of the merger and related transactions.

Q: What is required to consummate the merger?

A: To consummate the merger, OncoGenex stockholders must approve the issuance of OncoGenex common stock pursuant to the Merger Agreement. In addition, the Merger Agreement anticipates approval of an amendment to the certificate of incorporation of OncoGenex effecting the reverse stock split not to exceed

1-for-20, and an amendment to the certificate of incorporation of OncoGenex to change OncoGenex's name to "Achieve Life Sciences, Inc." Moreover, Achieve stockholders must approve the first merger.

The approval of the merger and the issuance of OncoGenex common stock pursuant to the Merger Agreement by the stockholders of OncoGenex require the affirmative vote of the holders of a majority of the shares of OncoGenex common stock properly cast at the OncoGenex special meeting, presuming a quorum is present at the meeting. The approval of the reverse stock split and the change of OncoGenex's name require the affirmative vote of the holders of a majority of shares of OncoGenex common stock outstanding on the record date for the OncoGenex special meeting. The approval of the reverse stock split is required in order to authorize OncoGenex to implement the reverse stock split and ensure that the post-merger trading price of OncoGenex's common stock continues to meet the minimum bid price required by the listing requirements of The NASDAQ Capital Market. Each of these proposals are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of all of the following matters: the issuance of OncoGenex common stock pursuant to the Merger Agreement, the amendment to the certificate of incorporation of OncoGenex effecting the reverse stock split and the amendment to the certificate of incorporation of OncoGenex to change OncoGenex's name.

The adoption of the Merger Agreement and the approval of the merger and related transactions by the stockholders of Achieve require the affirmative votes of the holders of a majority of the outstanding Achieve common stock. In addition to the requirement of obtaining such stockholder approval and appropriate regulatory approvals, each of the other closing conditions set forth in the Merger Agreement must be satisfied or waived. One of these closing conditions requires Achieve's liabilities, other than expenses incurred in connection with the merger, not to exceed $1.2 million. Achieve may reduce its current liabilities through a variety of means, including raising funds (subject to consent from OncoGenex), repaying existing debt or converting liabilities into equity.

Although there is no current agreement in place with any potential investor, Achieve is pursuing a financing in which it would issue securities, including additional shares of its common stock, in exchange for up to $5 million, which financing could occur between the date of this proxy statement/prospectus/information statement and the closing of the merger. The terms of such financing will require the consent of OncoGenex but will not be subject to the vote or approval of OncoGenex stockholders. Such financing would not dilute the ownership of the current OncoGenex stockholders, and therefore, any shares issued in such financing would cause an adjustment to the exchange ratio.

Certain Achieve stockholders who in the aggregate own approximately 78% of the outstanding shares of Achieve common stock, and certain OncoGenex stockholders who in the aggregate own 1.2% of the outstanding shares of OncoGenex common stock, are parties to support agreements with OncoGenex and Achieve, respectively, whereby such stockholders agreed to vote in favor of the adoption of the Merger Agreement, the merger and the issuance of OncoGenex common stock in the first merger pursuant to the Merger Agreement, respectively, subject to the terms of the support agreements. In addition, following the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, being declared effective by the Securities and Exchange Commission and pursuant to the conditions of the Merger Agreement, Achieve stockholders who are party to the support agreements will each execute written consents approving the merger and related transactions. Therefore, holders of a sufficient number of shares of Achieve capital stock required to adopt the Merger Agreement, thereby approving the merger, have agreed to adopt the Merger Agreement via written consent. Stockholders of Achieve, including those who are parties to support agreements, are requested to execute written consents providing such approvals.

For a more complete description of the closing conditions under the Merger Agreement, please see the section entitled "The Merger Agreement—Conditions to the Completion of the Merger."

Q: What will Achieve stockholders receive in the merger?

A: As a result of the merger, Achieve stockholders will become entitled to receive shares of OncoGenex common stock equal to approximately 75% of the outstanding common stock of OncoGenex.

For a more complete description of what Achieve stockholders will receive in the merger, please see the sections entitled "Market Price and Dividend Information" and "The Merger Agreement—Merger Consideration."

Q: What will OncoGenex stockholders receive in the merger?

A: OncoGenex plans to issue contingent value rights, or CVRs, to holders of OncoGenex common stock as of immediately before completion of the first merger. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the first merger as a result of the achievement of certain milestones relating to OncoGenex's apatorsen product candidate. The aggregate consideration to be distributed to the holders of the CVRs, if any, will be equal to 80% of the consideration received by the combined company as a result of the achievement of certain milestones less certain agreed to offsets, as determined pursuant to the CVR agreement. Under the CVR agreement, for a period of six months beginning on February 17, 2017, OncoGenex and the combined company will use certain defined efforts to enter into an agreement with a third party regarding the development and/or commercialization of apatorsen. At the expiration of this six-month period, if a third party has not entered into a term sheet for the development or commercialization of apatorsen, the combined company will no longer be contractually required to pursue an agreement regarding apatorsen and no consideration will be payable to the holders of CVRs.

OncoGenex is currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen, but has not yet identified such a party or set any milestones. OncoGenex cannot give any assurance that it will be able to identify and enter into an agreement with a third party to develop and potentially commercialize apatorsen by August 17, 2017, or if it does, that any milestones will be set or any consideration will ever be received by the combined company or distributed to the CVR holders. Therefore, OncoGenex stockholders will not be able to determine the value of the CVRs, if any, prior to the special meeting of OncoGenex stockholders since the value of the CVRs is contingent upon the occurrence of future events that are not yet known.

For a more complete description of the CVRs, please see the section entitled "Agreements Related to the Merger—CVR Agreement."

Q: Who will be the directors of OncoGenex following the merger?

A: Upon consummation of the merger, the board of directors of the combined company is expected to be composed of seven directors. Three of the directors will be designated by OncoGenex, and four of the directors will be designated by Achieve. OncoGenex is expected to designate Scott Cormack, Stewart Parker and Martin Mattingly. Achieve is expected to designate Richard Stewart, Anthony Clarke and two other independent directors that have yet to be determined.

Q: Who will be the executive officers of OncoGenex immediately following the merger?

A: Upon consummation of the merger, the executive management team of OncoGenex is expected to be composed of members of the Achieve executive management team and OncoGenex executive management team prior to the merger as set forth below:

Name	Title
Richard Stewart	Chief Executive Officer
Dr. Anthony Clarke	Chief Scientific Officer
Dr. Cindy Jacobs	Chief Medical Officer
John Bencich	Chief Financial Officer

Q: What are the intended U.S. federal income tax consequences of the merger to Achieve United States stockholders?

A: Each of OncoGenex and Achieve intends the first merger and second merger, taken together, the merger, qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986, as amended, or the Code. In general, the material tax consequences to U.S. Holders (as defined herein) of Achieve common stock are expected to be as follows:

- Each Achieve stockholder should not generally recognize gain or loss upon the exchange of Achieve common stock for OncoGenex common stock pursuant to the merger, except to the extent of cash received in lieu of a fractional share of OncoGenex common stock as described below; and
- Each Achieve stockholder should recognize gain or loss to the extent any cash received in lieu of a fractional share of OncoGenex common stock exceeds or is less than the basis of such fractional share.

However, there are many requirements that must be satisfied in order for the merger to be treated as a reorganization under Section 368(a) of the Code, some of which are based upon factual determinations, and the reorganization treatment could be affected by actions taken after the merger. If the merger failed to qualify as a reorganization under Section 368(a) of the Code, the Achieve stockholders generally would recognize the full amount of gains and losses realized on the exchange of their Achieve common stock in the merger.

Tax matters are very complicated, and the tax consequences of the merger to a particular Achieve stockholder will depend on such stockholder's circumstances. Accordingly, you should consult your tax advisor for a full understanding of the tax consequences of the merger to you, including the applicability and effect of federal, state, local and foreign income and other tax laws. For more information, please see the section entitled "The Merger—Material U.S. Federal Income Tax Consequences of the Merger."

Q: As an OncoGenex stockholder, how does the OncoGenex board of directors recommend that I vote?

A: After careful consideration, the OncoGenex board of directors recommends that OncoGenex stockholders vote:

- "FOR" Proposal No. 1 to approve the merger and the issuance of shares of common stock of OncoGenex in the first merger;
- "FOR" Proposal No. 2 to approve the amendment to certificate of incorporation of OncoGenex to effect a reverse stock split of OncoGenex common stock, at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting;
- "FOR" Proposal No. 3 to approve the amendment to the certificate of incorporation of OncoGenex to change the name of "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc."; and
- "FOR" Proposal No. 4 to adjourn the special meeting, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes in favor of Proposal Nos. 1, 2 and 3.

Each of Proposal Nos. 1, 2 and 3 are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of Proposal Nos. 1, 2 and 3.

Q: As an Achieve stockholder, how does the Achieve board of directors recommend that I vote?

A: After careful consideration, the Achieve board of directors recommends that the Achieve stockholders execute the written consent indicating their votes in favor of the adoption of the Merger Agreement and the approval of the merger and the transactions contemplated thereby.

Q: What risks should I consider in deciding whether to vote in favor of the merger or to execute and return the written consent, as applicable?

A: You should carefully review the section of this proxy statement/prospectus/information statement entitled "Risk Factors," which sets forth certain risks and uncertainties related to the merger, risks and uncertainties to which the combined company's business will be subject, and risks and uncertainties to which each of OncoGenex and Achieve, as an independent company, is subject.

Q: When do you expect the merger to be consummated?

A: The merger is anticipated to be consummated in mid-2017, but the exact timing cannot be predicted. For more information, please see the section entitled "The Merger Agreement—Conditions to the Completion of the Merger."

Q: What do I need to do now?

A: OncoGenex and Achieve urge you to read this proxy statement/prospectus/information statement carefully, including its annexes, and to consider how the merger affects you.

If you are a stockholder of OncoGenex, you may provide your proxy instructions in one of two different ways. First, you can mail your signed proxy card in the enclosed return envelope. Second, you may also provide your proxy instructions via the Internet by following the instructions on your proxy card or voting instruction form. Please provide your proxy instructions only once, unless you are revoking a previously delivered proxy instruction, and as soon as possible so that your shares can be voted at the special meeting of OncoGenex stockholders.

If you are a stockholder of Achieve, you may execute and return your written consent to Achieve in accordance with the instructions provided.

Q: What happens if I do not return a proxy card or otherwise provide proxy instructions, as applicable?

A: If you are an OncoGenex stockholder, the failure to return your proxy card or otherwise provide proxy instructions will reduce the aggregate number of votes required to approve OncoGenex Proposals Nos. 1 and 4 and will have the same effect as voting against OncoGenex Proposal Nos. 2 and 3, and your shares will not be counted for purposes of determining whether a quorum is present at the OncoGenex special meeting.

If you return a proxy card but abstain from voting on one or more matters, such abstentions will not be counted towards the vote total for each proposal and, accordingly, will have no effect on the outcome of OncoGenex Proposal Nos. 1 and 4 and will have the same effect as a vote against OncoGenex Proposal Nos. 2 and 3.

If you do not give instructions to your broker, your broker can vote your OncoGenex shares with respect to "discretionary" items but not with respect to "non-discretionary" items. It is anticipated that OncoGenex Proposal No. 1 will be a non-discretionary item. On non-discretionary items for which you do not give your broker instructions, the OncoGenex shares will be treated as broker non-votes. Broker non-votes will have no effect on the outcome of OncoGenex Proposal Nos. 1 and 4 and will have the same effect as a vote against OncoGenex Proposal Nos. 2 and 3. OncoGenex Proposal Nos. 2, 3 and 4 are matters on which a broker or other nominee are generally empowered to vote, and therefore, limited or no broker non-votes are expected with respect to those proposals.

Q: May I vote in person at the special meeting of stockholders of OncoGenex?

A: If your shares of OncoGenex common stock are registered directly in your name with the OncoGenex transfer agent, you are considered to be the stockholder of record with respect to those shares, and the proxy

materials and proxy card are being sent directly to you by OncoGenex. If you are an OncoGenex stockholder of record, you may attend the special meeting of OncoGenex stockholders and vote your shares in person. Even if you plan to attend the OncoGenex special meeting in person, OncoGenex requests that you sign and return the enclosed proxy to ensure that your shares will be represented at the OncoGenex special meeting if you are unable to attend. If your shares of OncoGenex common stock are held in a brokerage account or by another nominee, you are considered the beneficial owner of shares held in "street name," and the proxy materials are being forwarded to you by your broker or other nominee together with a voting instruction card. As the beneficial owner, you are also invited to attend the special meeting of OncoGenex stockholders. Because a beneficial owner is not the stockholder of record, you may not vote these shares in person at the OncoGenex special meeting unless you obtain a proxy from the broker, trustee or nominee that holds your shares, giving you the right to vote the shares at the meeting.

Q: When and where is the special meeting of OncoGenex stockholders being held?

A: The special meeting of OncoGenex stockholders will be held at 1191 Second Avenue, Floor 10, Seattle, WA 98101, at local time, on , 2017. Subject to space availability, all OncoGenex stockholders as of the record date, or their duly appointed proxies, may attend the meeting. Since seating is limited, admission to the meeting will be on a first-come, first-served basis.

Q: If my OncoGenex shares are held in "street name" by my broker, will my broker vote my shares for me?

A: Unless your broker has discretionary authority to vote on certain matters, your broker will not be able to vote your shares of OncoGenex common stock on matters requiring discretionary authority without instructions from you. Brokers are not expected to have discretionary authority to vote for OncoGenex Proposal No. 1. To make sure that your vote is counted, you should instruct your broker to vote your shares, following the procedures provided by your broker. Brokers are expected to have discretionary authority to vote for Proposal Nos. 2, 3 and 4.

Q: May I change my vote after I have submitted a proxy or provided proxy instructions?

A: OncoGenex stockholders of record, other than those OncoGenex stockholders who are parties to support agreements, may change their vote at any time before their proxy is voted at the OncoGenex special meeting in one of three ways. First, a stockholder of record of OncoGenex can send a written notice to the Secretary of OncoGenex stating that it would like to revoke its proxy. Second, a stockholder of record of OncoGenex can submit new proxy instructions either on a new proxy card or via the Internet. Third, a stockholder of record of OncoGenex can attend the OncoGenex special meeting and vote in person. Attendance alone will not revoke a proxy. If an OncoGenex stockholder of record or a stockholder who owns OncoGenex shares in "street name" has instructed a broker to vote its shares of OncoGenex common stock, the stockholder must follow directions received from its broker to change those instructions.

Q: Who is paying for this proxy solicitation?

A: OncoGenex will pay the costs of printing and filing this proxy statement/prospectus/information statement and proxy card. Arrangements will also be made with brokerage firms and other custodians, nominees and fiduciaries who are record holders of OncoGenex common stock for the forwarding of solicitation materials to the beneficial owners of OncoGenex common stock. OncoGenex will reimburse these brokers, custodians, nominees and fiduciaries for the reasonable out-of-pocket expenses they incur in connection with the forwarding of solicitation materials. OncoGenex has engaged The Proxy Advisory Group, LLC to assist in the solicitation of proxies and provide related advice and informational support, for a service fee, plus customary disbursements, which are not expected to exceed $25,000 in total.

Q: Who can help answer my questions?

A: If you are an OncoGenex stockholder and would like additional copies, without charge, of this proxy statement/prospectus/information statement or if you have questions about the merger, including the procedures for voting your shares, you should contact OncoGenex's proxy solicitor:

THE PROXY ADVISORY GROUP, LLC
844-997-7699 (toll free)
212-616-2180 (collect)

If you are an Achieve stockholder and would like additional copies, without charge, of this proxy statement/prospectus/information statement or if you have questions about the merger, including the procedures for voting your shares, you should contact:

Achieve Life Science, Inc.
30 Sunnyside Avenue
Mill Valley, California 94941
Attention: Chief Executive Officer

PROSPECTUS SUMMARY

This summary highlights selected information from this proxy statement/prospectus/information statement and may not contain all of the information that is important to you. To better understand the merger, the proposals being considered at the OncoGenex special meeting and the Achieve stockholder actions that are the subject of the written consent, you should read this entire proxy statement/prospectus/information statement carefully, including the Merger Agreement and the other annexes to which you are referred to herein. For more information, please see the section entitled "Where You Can Find More Information."

The Companies

OncoGenex Pharmaceuticals, Inc.

19820 North Creek Parkway, Suite 201
Bothell, WA 98011
(425) 686-1500

OncoGenex Pharmaceuticals, Inc., or OncoGenex, is a biopharmaceutical company that has been focused on the development of novel next generation cancer therapeutics. Its mission is to accelerate transformative therapies to improve the lives of people living with cancer and other serious diseases. OncoGenex's product candidate, apatorsen, has a distinct mechanism of action and represents a unique opportunity for cancer drug development that it believes has the potential to improve treatment outcomes in a variety of cancers. Apatorsen is designed to block the production of heat shock protein 27, or Hsp27, a protein that promotes treatment resistance in cancer. In some clinical trials evaluating apatorsen, high serum Hsp27 levels appear to be a strong prognostic indicator for shorter survival outcomes.

Achieve Life Science, Inc.

30 Sunnyside Avenue
Mill Valley, California 94941
(415) 670-9050

Achieve is a clinical-stage specialty pharmaceutical company focused on the development and commercialization of cytisine, a smoking cessation aid that has been marketed in Central and Eastern Europe by a third party for over 15 years under the brand name Tabex™ and is estimated to have treated in excess of 21 million patients through December 2016. Cytisine is a naturally occurring plant-based alkyloid from the seeds of the *Laburnum anagyroides* plant that is believed to reduce the severity of nicotine withdrawal symptoms by targeting receptors in the brain. Cytisine has the potential to be more cost effective than competing prescription smoking cessation medicines and to have better efficacy than currently available Over-the-Counter, or OTC, treatments.

Ash Acquisition Sub, Inc.

19820 North Creek Parkway, Suite 201
Bothell, WA 98011
(425) 686-1500

Ash Acquisition Sub, Inc., or Merger Sub 1, is a wholly owned subsidiary of OncoGenex and was formed solely for the purposes of carrying out the first merger.

Ash Acquisition Sub 2, Inc.

19820 North Creek Parkway, Suite 201
Bothell, WA 98011
(425) 686-1500

Ash Acquisition Sub 2, Inc., or Merger Sub 2, is a wholly owned subsidiary of OncoGenex and was formed solely for the purposes of carrying out the second merger.

The Merger

If the merger is completed, Merger Sub 1 will merge with and into Achieve, or the first merger, with Achieve surviving as a wholly owned subsidiary of OncoGenex, and promptly following the first merger, Achieve shall merge with and into Merger Sub 2, with Merger Sub 2 surviving as a wholly owned subsidiary of OncoGenex. Both mergers together are referred to herein as the "merger."

Immediately after the first merger, subject to adjustments to reflect certain events that could occur prior to closing of the first merger, Achieve stockholders will own approximately 75% of the outstanding capital stock of the combined company, and OncoGenex equity holders will own approximately 25% of the outstanding capital stock of the combined company. Adjustments to the exchange ratio are described in more detail in the Merger Agreement and in this proxy statement/prospectus/information statement.

For a more complete description of the merger exchange ratio, please see the section entitled "The Merger Agreement."

The closing of the first merger will occur no later than the second business day after the last of the conditions to the merger has been satisfied or waived, or at another time as OncoGenex and Achieve agree. OncoGenex and Achieve anticipate that the consummation of the first merger will occur promptly after the OncoGenex special meeting. However, because the merger is subject to a number of conditions, neither OncoGenex nor Achieve can predict exactly when the closing will occur or if it will occur at all. The closing of the second merger will occur promptly following the first merger. After completion of the first and second mergers, assuming that OncoGenex receives the required stockholder approval of OncoGenex Proposal No. 3, OncoGenex will be renamed "Achieve Life Sciences, Inc."

Reasons for the Merger

Following the merger, the combined company (Achieve Life Sciences, Inc.) will be a clinical-stage company focused on clinical and commercial development of cytisine, a plant-based alkaloid with a high binding affinity to the nicotinic acetylcholine receptor. Cytisine is an established smoking cessation treatment that has been approved and marketed in Central and Eastern Europe for more than 15 years. It is believed that over 21 million people have used cytisine to help combat nicotine addiction, including approximately 2,000 patients in two Phase 3 clinical trials conducted in Europe and New Zealand and published in the New England Journal of Medicine. While third party trials of cytisine have been conducted that may support any future clinical trials by Achieve, Achieve has not yet submitted an IND to the FDA for cytisine or conducted clinical trials for cytisine in the United States or any other jurisdiction.

In addition to cytisine, the combined company's pipeline will also include apatorsen (OGX-427), a once-weekly intravenous drug designed to inhibit production of Hsp27 to disable cancer cells' defenses and overcome treatment resistance. Positive Phase 2 results were recently reported following final analysis of the Borealis-2™ trial of apatorsen in combination with docetaxel treatment that enrolled 200 patients with metastatic bladder cancer whose disease had progressed following first-line platinum-based chemotherapy. Six previous randomized Phase 2 trials of apatorsen in several cancer indications failed to meet their pre-defined clinical endpoints.

In reaching its unanimous decision to approve the merger and the issuance of OncoGenex common stock pursuant to the Merger Agreement, the OncoGenex board of directors considered a number of factors, including, among others, the following:

- the historical and current information concerning OncoGenex's business, financial performance, financial condition, operations, management and competitive position, the prospects of OncoGenex and its product candidates, the nature of the biotechnology industry generally, including financial projections of OncoGenex under various scenarios and its short- and long-term strategic objectives;
- that Achieve's smoking cessation product candidate, cytisine, represents a sizeable market opportunity, and may provide new medical benefits for patients and returns for investors;
- that the merger would provide existing OncoGenex stockholders a significant opportunity to participate in the potential growth of the combined company following the merger;
- that the combined company will be led by an experienced senior management team and a board of directors with representation from each of the current management and boards of directors of OncoGenex and Achieve;
- the failure of custirsen to meet the primary endpoint of improving overall survival in three completed phase 3 trials and the clinical development and sequential risks associated with continuing to develop apatorsen; and
- the terms of the Merger Agreement and associated transactions, including the relative percentage ownership of OncoGenex stockholders and Achieve stockholders immediately following the completion of the merger, the reasonableness of the fees and expenses related to the merger and the likelihood that the merger will be completed.

For more information on the OncoGenex board of directors' reasons for the transaction, see the section entitled "The Merger—OncoGenex Reasons for the Merger."

In reaching its unanimous decision to approve the Merger Agreement and the related transactions, the Achieve board of directors considered a number of factors, including, among others, the following:

- information concerning Achieve's business, financial performance (both past and prospective) and its financial condition, results of operation (both past and prospective), business and strategic objectives, as well as the risks associated with such objectives;
- that the merger would provide Achieve with access to additional resources and personnel with significant clinical and regulatory experience;
- that the merger would provide existing Achieve stockholders with greater liquidity by owning stock in a public company and would provide Achieve with access to the public capital markets, including sources of capital from a broader range of investors to support the clinical development of its product candidates than it could otherwise obtain if it continued to operate as a privately-held company;
- that the combined company will be led by an experienced senior management team and a board of directors with representation from each of the current management and boards of directors of OncoGenex and Achieve;
- that the merger would provide Achieve with the opportunity to utilize approximately $100 million in net operating losses from OncoGenex's Canadian subsidiary, OncoGenex Technologies Inc.; and
- the terms of the Merger Agreement and associated transactions, including the relative percentage ownership of OncoGenex stockholders and Achieve stockholders immediately following the completion of the merger, the reasonableness of fees and expenses related to the merger and the likelihood that the merger will be completed.

For more information on the Achieve board of directors' reasons for the transaction, see the section entitled "The Merger—Achieve Reasons for the Merger."

Opinion of the Financial Advisor to OncoGenex's Board of Directors

OncoGenex's board of directors engaged MTS Health Partners, L.P., which we refer to in this proxy statement/prospectus/information statement as MTS Health Partners, to provide financial advisory and investment banking services in connection with the board of directors' consideration and evaluation of potential strategic alternatives. On January 5, 2017, MTS Securities, LLC, an affiliate of MTS Health Partners, which we refer to in this proxy statement/prospectus/information statement as MTS Securities, rendered its oral opinion to OncoGenex's board of directors, which opinion was confirmed in writing on the same date, that, as of the date of such opinion, and based upon and subject to the assumptions made, procedures followed, matters considered and qualifications and limitations of the review set forth in its written opinion, as of January 5, 2017, the exchange ratio in connection with the first merger, as provided in the Merger Agreement, was fair, from a financial point of view, to OncoGenex.

The full text of MTS Securities' written opinion, which sets forth the assumptions made, procedures followed, matters considered, and qualifications and limitations of the review undertaken by MTS Securities in connection with such opinion, is attached as *Annex D* to this proxy statement/prospectus/information statement and is incorporated herein by reference. OncoGenex urges you to carefully read the MTS Securities opinion, together with the description of such opinion included elsewhere in this proxy statement/prospectus/information statement, in its entirety. MTS Securities provided its opinion for the information and assistance of OncoGenex's board of directors in connection with its consideration of the merger. MTS Securities' opinion addressed solely the fairness, from a financial point of view, of the exchange ratio in connection with the first merger, as provided in the Merger Agreement, to OncoGenex. MTS Securities' opinion does not address OncoGenex's underlying business decision to proceed with the merger or the relative merits of the merger compared to other alternatives available to OncoGenex. MTS Securities' opinion did not constitute a recommendation to OncoGenex's board of directors, and is not a recommendation to any stockholder of OncoGenex, as to how to vote with respect to the first merger or take any other action in connection with the merger or otherwise. For a more complete discussion of the MTS Securities opinion, see the section entitled "The Merger—Opinion of the Financial Advisor to OncoGenex's Board of Directors."

Overview of the Merger Agreement and Agreements Related to the Merger Agreement

Merger Consideration

At the effective time of the first merger, each share of Achieve common stock outstanding immediately prior to the effective time of the first merger will automatically be converted into the right to receive a number of shares of OncoGenex common stock pursuant to an exchange ratio of 4,242.8904 (before giving effect to the reverse stock split), herein referred to as the exchange ratio, (which is subject to adjustment to account for the proposed reverse stock split, the payment of cash in lieu of fractional shares, and increases or decreases in Achieve's fully-diluted capitalization and OncoGenex's outstanding capitalization).

Immediately after the first merger, based on the exchange ratio, Achieve stockholders will own approximately 75% of the outstanding capital stock of the combined company, and OncoGenex equity holders will own approximately 25% of the outstanding capital stock of the combined company. Adjustments to the exchange ratio are described in more detail in the Merger Agreement and in this proxy statement/prospectus/information statement.

There will be no adjustment to the total number of shares of OncoGenex common stock that Achieve stockholders will be entitled to receive for changes in the market price of OncoGenex common stock.

Accordingly, the market value of the shares of OncoGenex common stock issued pursuant to the first merger will depend on the market value of the shares of OncoGenex common stock at the time the first merger closes, and could vary significantly from the market value on the date of this proxy statement/prospectus/information statement. On May 2, 2017, the last trading day before the date of this proxy statement/prospectus/information statement, the closing sale price of OncoGenex common stock was $0.41 per share.

Treatment of OncoGenex Stock Options and Warrants

As of the effective time of the reverse stock split, OncoGenex will adjust and proportionately decrease the number of shares of OncoGenex's common stock reserved for issuance upon exercise of, and adjust and proportionately increase the exercise price of, all options and warrants to acquire OncoGenex's common stock outstanding immediately prior to the closing date at the reverse stock split ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, which is not to exceed 1-for-20. All stock options and warrants to acquire shares of OncoGenex's common stock that are outstanding immediately prior to the effective time of the first merger will remain outstanding following the effective time of the second merger. In addition, as of the effective time of the reverse stock split, OncoGenex will adjust and proportionately decrease the total number of shares of OncoGenex's common stock that may be the subject of future grants under OncoGenex's stock option plans at the determined reverse stock split ratio, which is not to exceed 1-for-20.

Treatment of Achieve Stock Options and Warrants

As of the date of this proxy statement/prospectus/information statement, Achieve has no outstanding stock options or warrants. In the event Achieve issues or grants any stock options or warrants before the effective time of the first merger, the exchange ratio will be adjusted such that following the effective time of the first merger, holders of Achieve common stock will own in the aggregate approximately 75% of the outstanding capital stock of the combined company.

Conditions to the Completion of the First Merger

To consummate the first merger, OncoGenex stockholders must approve the merger and the issuance of shares of OncoGenex common stock in the merger. In addition, the Merger Agreement anticipates approval of an amendment to the certificate of incorporation of OncoGenex effecting the proposed reverse stock split, determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, at a ratio not to exceed 1-for-20, and an amendment to the certificate of incorporation effecting a change of the OncoGenex name to "Achieve Life Sciences, Inc." Moreover, the Achieve stockholders must adopt the Merger Agreement thereby approving the merger. In addition to obtaining such stockholder approvals and appropriate regulatory approvals, each of the other closing conditions set forth in the Merger Agreement must be satisfied or waived. One of these closing conditions requires Achieve's liabilities, other than expenses incurred in connection with the merger, not to exceed $1.2 million. Achieve may reduce its current liabilities through a variety of means, including raising funds (subject to consent from OncoGenex), repaying existing debt or converting liabilities into equity.

Potential Achieve Financing

Although there is no current agreement in place with any potential investor, Achieve is pursuing a financing in which it would issue securities, including additional shares of its common stock, in exchange for up to $5 million, which financing could occur between the date of this proxy statement/prospectus/information statement and the closing of the merger. The terms of such financing will require the consent of OncoGenex but will not be subject to the vote or approval of OncoGenex stockholders. Such financing would not dilute the ownership of the current OncoGenex stockholders, and therefore, any shares issued in such financing would cause an adjustment to the exchange ratio.

No Solicitation

Each of OncoGenex and Achieve agreed that, subject to certain exceptions, OncoGenex and Achieve and any of their respective subsidiaries will not, nor will either party or any of its subsidiaries authorize or permit any of their or their subsidiaries' directors, officers, employees, agents, attorneys, accountants, investment bankers, advisors and representatives to, directly or indirectly:

- solicit, initiate, encourage, induce or facilitate any "acquisition proposal," as defined in the Merger Agreement;
- furnish any information with respect to it to any person in connection with or in response to an acquisition proposal or an "acquisition inquiry," as defined in the Merger Agreement;
- engage in discussions or negotiations with any person with respect to any acquisition proposal or acquisition inquiry;
- subject to certain exceptions, approve, endorse or recommend an acquisition proposal;
- execute or enter into any letter of intent or any contract contemplating or otherwise relating to any "acquisition transaction," as defined in the Merger Agreement; or
- grant any waiver or release under any confidentiality, standstill or similar agreement, other than to either OncoGenex or Achieve.

However, before obtaining the applicable OncoGenex or Achieve stockholder approvals required to consummate the merger, each party may furnish nonpublic information regarding such party to, and may enter into discussions or negotiations with, any person in response to a bona fide written acquisition proposal, which such party's board of directors determines in good faith, after consultation with such party's financial advisor and its outside legal counsel, constitutes or is reasonably likely to result in a "superior offer," as defined in the Merger Agreement, if:

- neither such party nor any representative of such party has breached the no solicitation provisions of the Merger Agreement described above;
- such party gives the other party at least one business day's prior written notice of the identity of the third party and of that party's intention to furnish nonpublic information to, or enter into discussions or negotiations with, such third party before furnishing any nonpublic information or entering into discussions or negotiations with such third party;
- such party receives from the third party an executed confidentiality agreement containing provisions at least as favorable to such party as those contained in the confidentiality agreement between OncoGenex and Achieve; and
- substantially contemporaneously with furnishing of nonpublic information to a third party, such party furnishes the same information to the other party to the extent not previously furnished.

Termination of the Merger Agreement

Either OncoGenex or Achieve can terminate the Merger Agreement under certain circumstances, which would prevent the merger from being consummated.

Termination Fees

If the Merger Agreement is terminated due to a breach of the no solicitation provisions of the Merger Agreement, the breaching party will be required to pay the other party a termination fee of $1.0 million and reimburse the other party for expenses incurred in connection with the merger, up to a maximum of $0.5 million. If the Merger Agreement is terminated for reasons other than a breach of the no solicitation provisions of the Merger Agreement by either party, either OncoGenex or Achieve may be required to pay the other party a termination

fee of $0.5 million and reimburse the other party for expenses incurred in connection with the merger, up to a maximum of $0.5 million.

Contingent Value Rights

OncoGenex plans to issue contingent value rights, or CVRs, to holders of OncoGenex common stock as of immediately before completion of the first merger. One CVR will be issued for each share of OncoGenex common stock outstanding as of the record date for such issuance. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the first merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones, or Milestones, relating to OncoGenex's apatorsen product candidate, upon the terms and subject to the conditions set forth in a CVR agreement to be entered into between OncoGenex, Achieve and Computershare Trust Company, N.A., as rights agent. The aggregate consideration to be distributed to the holders of the CVRs, if any, will be equal to 80% of the consideration received by the combined company as a result of the achievement of the Milestones less certain agreed to offsets, as determined pursuant to the CVR agreement. Under the CVR agreement, for a period of six months beginning on February 17, 2017, OncoGenex and the combined company will use certain defined efforts to enter into an agreement with a third party regarding the development and/or commercialization of apatorsen. At the expiration of this six-month period, if a third party has not entered into a term sheet for the development or commercialization of apatorsen, the combined company will no longer be contractually required to pursue an agreement regarding apatorsen and no consideration will be payable to the holders of CVRs.

OncoGenex is currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen, but has not yet identified such a party or set any Milestones. OncoGenex cannot give any assurance that it will be able to identify and enter into an agreement with a third party to develop and potentially commercialize apatorsen by August 17, 2017, or if it does, that any Milestones will be set or any consideration will ever be received by the combined company or distributed to the CVR holders. Therefore, OncoGenex stockholders will not be able to determine the value of the CVRs, if any, prior to the special meeting of OncoGenex stockholders since the value of the CVRs is contingent upon the occurrence of future events that are not yet known.

Support Agreements

Certain Achieve stockholders are each party to a support agreement with OncoGenex pursuant to which, among other things, each of these stockholders agreed, solely in its capacity as a stockholder, to vote all of its shares of Achieve capital stock in favor of the adoption of the Merger Agreement and to acknowledge that the adoption of the Merger Agreement is irrevocable. In addition, these Achieve stockholders agreed to not knowingly take any action that Achieve is not permitted to take under the no solicitation provisions of the Merger Agreement. The parties to the support agreements with OncoGenex are: Richard Stewart, Dr. Anthony Clarke, Susan Clarke, Timothy Clarke, Robert Schacter, Ronald Martell and Caroline Loewy.

The stockholders of Achieve that are party to a support agreement with OncoGenex owned an aggregate of 16,530 shares of Achieve common stock, representing approximately 78% of the outstanding shares of Achieve capital stock as of January 5, 2017. Therefore, holders of the number of shares of Achieve stock required to adopt the Merger Agreement and approve the merger and related transactions are contractually obligated to adopt the Merger Agreement. Following the effectiveness of the registration statement of which this proxy statement/prospectus/information statement is a part and pursuant to the Merger Agreement, stockholders of Achieve holding a sufficient number of shares to adopt the Merger Agreement and approve the merger and related transactions will execute written consents providing for such adoption and approval.

Certain OncoGenex stockholders are each party to a support agreement with Achieve pursuant to which, among other things, each of these stockholders agreed, solely in its capacity as a stockholder, to vote all of its shares of OncoGenex common stock in favor of the approval of the Merger Agreement, the issuance of OncoGenex common stock in the first merger pursuant to the Merger Agreement, approval of the reverse stock split, the approval of any proposal to adjourn or postpone any meeting to a later date, if there are not sufficient votes for the approval of any of the foregoing on the date on which such meeting is held, and any other proposal included in this proxy statement/prospectus/information statement in connection with or related to the consummation of the merger that the OncoGenex board of directors has recommended that the OncoGenex stockholders vote in favor of, and against any acquisition proposal. In addition, these OncoGenex stockholders agreed to not knowingly take any action that OncoGenex is not permitted to take under the no solicitation provisions of the Merger Agreement.

The stockholders of OncoGenex that are party to a support agreement with Achieve owned an aggregate of 362,492 shares of OncoGenex common stock, representing approximately 1.2% of the outstanding OncoGenex common stock as of January 5, 2017. These stockholders include executive officers and directors of OncoGenex.

Management Following the Merger

Effective as of the closing of the merger, OncoGenex's executive officers are expected to be composed of members of the current Achieve and OncoGenex management teams:

Name	Title
Richard Stewart	Chief Executive Officer
Dr. Anthony Clarke	Chief Scientific Officer
Dr. Cindy Jacobs	Chief Medical Officer
John Bencich	Chief Financial Officer

The OncoGenex Special Meeting

The special meeting of stockholders of OncoGenex will be held on , 2017 at , local time, at 1191 Second Avenue, Floor 10, Seattle, WA 98101, for the following purposes:

- to consider and vote upon a proposal to approve the merger and the issuance of OncoGenex common stock in the merger pursuant to the Merger Agreement;
- to approve the amendment to the certificate of incorporation of OncoGenex to effect a reverse stock split of OncoGenex common stock, at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting;
- to approve the amendment to the certificate of incorporation of OncoGenex to change the name "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc.";
- to consider and vote upon an adjournment of the OncoGenex special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of OncoGenex Proposal Nos. 1, 2 and 3; and
- to transact such other business as may properly come before the OncoGenex special meeting or any adjournment or postponement thereof.

The approval of the merger and the issuance of OncoGenex common stock pursuant to the Merger Agreement by the stockholders of OncoGenex require the affirmative vote of the holders of a majority of the shares of OncoGenex common stock properly cast at the OncoGenex special meeting, presuming a quorum is present at the meeting. The approval of the reverse stock split and the change of OncoGenex's name require the affirmative vote of the holders of a majority of shares of OncoGenex common stock outstanding on the record date for the

OncoGenex special meeting. The approval of the reverse stock split is required in order to authorize OncoGenex to implement the reverse stock split and ensure that the post-merger trading price of OncoGenex's common stock meets the minimum bid price required by the listing requirements of The NASDAQ Capital Market. Therefore, if the requisite stockholders of OncoGenex approve the merger and the issuance of OncoGenex common stock pursuant to the Merger Agreement but do not approve the reverse stock split, it is possible that the merger may not be consummated.

In addition to the requirement of obtaining such stockholder approval and appropriate regulatory approvals, each of the other closing conditions set forth in the Merger Agreement must be satisfied or waived.

The Achieve Solicitation of Written Consents

Following the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, being declared effective by the Securities and Exchange Commission and pursuant to the conditions of the Merger Agreement, the Achieve stockholders who are party to the support agreements will each execute an action by written consent of the Achieve stockholders, or written consent, adopting the Merger Agreement, thereby approving the merger and related transactions. Therefore, holders of a sufficient number of shares of Achieve capital stock required to adopt the Merger Agreement will adopt the Merger Agreement, and no meeting of Achieve stockholders to adopt the Merger Agreement and approve the merger and related transactions will be held. Nevertheless, all Achieve stockholders will have the opportunity to elect to adopt the Merger Agreement, thereby approving the merger and related transactions, by signing and returning to Achieve a written consent.

The adoption of the Merger Agreement and the approval of the merger and related transactions by the stockholders of Achieve require the affirmative votes of the holders of a majority of the outstanding Achieve common stock. In addition to the requirement of obtaining such stockholder approval and appropriate regulatory approvals, each of the other closing conditions set forth in the Merger Agreement must be satisfied or waived.

Interests of Certain Directors, Officers and Affiliates of OncoGenex and Achieve

In considering the recommendation of the OncoGenex board of directors with respect to issuing shares of OncoGenex common stock pursuant to the Merger Agreement and the other matters to be acted upon by OncoGenex stockholders at the OncoGenex special meeting, OncoGenex stockholders should be aware that certain members of the OncoGenex board of directors and executive officers of OncoGenex have interests in the merger that may be different from, or in addition to, interests they have as OncoGenex stockholders. For example, Scott Cormack, OncoGenex's Chief Executive Officer, will no longer serve as Chief Executive Officer upon the consummation of the merger. Consistent with the terms of Mr. Cormack's existing employment agreement and equity award agreements, upon the termination of Mr. Cormack's employment, assuming such termination occurred on March 22, 2017, he will receive benefits having an aggregate value of approximately $1.3 million, comprised of approximately $1.2 million in cash and approximately $0.1 million received upon the acceleration of outstanding equity and in connection with other benefits.

Additionally, certain of OncoGenex's existing executive officers and directors are expected to remain executive officers and directors of the combined company. John Bencich and Dr. Cindy Jacobs are expected to continue to serve as the Chief Financial Officer and Chief Medical Officer of the combined company, and Stewart Parker, Martin Mattingly and Scott Cormack are expected to continue as directors of the combined company.

As of December 31, 2016, directors and executive officers of OncoGenex owned 1.0% of the outstanding shares of OncoGenex common stock. OncoGenex directors and executive officers have entered into support agreements in connection with the merger. The support agreements are discussed in greater detail in the section entitled "Agreements Related to the Merger—Support Agreements and Written Consent."

In considering the recommendation of the Achieve board of directors with respect to approving the merger and related transactions by written consent, Achieve stockholders should be aware that certain members of the board of directors and executive officers of Achieve have interests in the merger that may be different from, or in addition to, interests they have as Achieve stockholders. For example, some of Achieve's directors and executive officers are expected to become directors and executive officers of the combined company upon the closing of the merger while other Achieve directors and executive officers will not have roles in the combined company. Specifically, Richard Stewart and Dr. Anthony Clarke, both of whom are currently executive officers of and consultants to Achieve, are expected to become executive officers of the combined company upon the closing of the merger, with Mr. Stewart serving as the Chief Executive Officer and Dr. Clarke serving as the Chief Scientific Officer of the combined company. Additionally, Mr. Stewart and Dr. Clarke, both of whom are current directors of Achieve, are expected to be designated to serve on the board of directors of the combined company following the closing of the merger. Ronald Martell, the former Chief Executive Officer of Achieve and a director of Achieve, will not continue as the Chief Executive Officer of the combined company or as a director of the combined company and Mr. Martell will not continue to serve in any director, officer or other capacity with the combined company. Caroline Loewy, the former Chief Financial Officer of Achieve, will not continue as the Chief Financial Officer of the combined company and Ms. Loewy will not continue to serve in any director, officer or other capacity with the combined company. While neither Mr. Martell nor Ms. Loewy will serve in any director, officer or other capacity with the combined company, it is expected that both will be stockholders of the combined company following the closing of the merger. Mr. Martell and Ms. Loewy are expected to receive certain payments in connection with their separation, which have not yet been determined. As of December 31, 2016, directors and executive officers of Achieve, together with their affiliates, owned approximately 50.5% of the outstanding shares of Achieve capital stock. Achieve officers and directors, and their affiliates, have also entered into support agreements in connection with the merger. The support agreements are discussed in greater detail in the section entitled "Agreements Related to the Merger—Support Agreements and Written Consent."

Considerations with Respect to U.S. Federal Income Tax Consequences of the Merger

Each of OncoGenex and Achieve intends that the first merger and second merger, taken together, qualify as a reorganization within the meaning of Section 368(a) of the Code. In general and subject to the qualifications and limitations set forth in the section entitled "The Merger—Material U.S. Federal Income Tax Consequences of the Merger," the material tax consequences to U.S. Holders (as defined herein) of Achieve common stock are expected to be as follows:

- an Achieve stockholder should not recognize gain or loss upon the exchange of Achieve common stock for OncoGenex common stock pursuant to the merger, except to the extent of cash received in lieu of a fractional share of OncoGenex common stock as described below;
- an Achieve stockholder who receives cash in lieu of a fractional share of OncoGenex common stock in the merger should recognize capital gain or loss in an amount equal to the difference between the amount of cash received instead of a fractional share and the stockholder's tax basis allocable to such fractional share;
- an Achieve stockholder's aggregate tax basis for the shares of OncoGenex common stock received in the merger (including any fractional share interest for which cash is received) should equal the stockholder's aggregate tax basis in the shares of Achieve common stock surrendered upon completion of the merger, decreased by the amount of cash that it receives and increased by the amount of gain, if any, that it recognizes; and
- the holding period of the shares of OncoGenex common stock received by an Achieve stockholder in the merger should include the holding period of the shares of Achieve common stock surrendered in exchange therefor provided the surrendered Achieve common stock is held as a capital asset (generally, property held for investment) at the time of the merger.

Tax matters are very complicated, and the tax consequences of the merger to a particular Achieve stockholder will depend on such stockholder's circumstances. Accordingly, you should consult your tax advisor for a full understanding of the tax consequences of the merger to you, including the applicability and effect of federal, state, local and foreign income and other tax laws. For more information, please see the section entitled "The Merger—Material U.S. Federal Income Tax Consequences of the Merger."

Risk Factors

Both OncoGenex and Achieve are subject to various risks associated with their businesses and their industries. In addition, the merger, including the possibility that the merger may not be completed, poses a number of risks to each company and its respective stockholders, including the following risks:

- the exchange ratio is not adjustable based on the market price of OncoGenex common stock so the merger consideration at the closing may have a greater or lesser value than at the time the Merger Agreement was signed;
- failure to complete the merger may result in OncoGenex and Achieve paying a termination fee or expenses to the other and could harm the common stock price of OncoGenex and future business and operations of each company;
- if the conditions to the first merger are not met, the merger may not occur;
- the merger may be completed even though material adverse changes may result from the announcement of the merger, industry-wide changes and other causes;
- the combined company will need to raise additional capital by issuing securities or debt or through licensing arrangements, which may cause significant dilution to the combined company's stockholders or restrict the combined company's operations or proprietary rights;
- some OncoGenex and Achieve executive officers and directors have interests in the merger that are different from yours and that may influence them to support or approve the merger without regard to your interests;
- the market price of the combined company's common stock may decline as a result of the merger;
- the CVRs may not result in any cash payments to holders of CVRs;
- OncoGenex and Achieve stockholders may not realize a benefit from the merger commensurate with the ownership dilution they will experience in connection with the merger;
- during the pendency of the merger, OncoGenex and Achieve may not be able to enter into a business combination with another party at a favorable price because of restrictions in the Merger Agreement, which could adversely affect their respective businesses;
- certain provisions of the Merger Agreement may discourage third parties from submitting alternative takeover proposals, including proposals that may be superior to the arrangements contemplated by the Merger Agreement; and
- because the lack of a public market for Achieve shares makes it difficult to evaluate the fairness of the merger, the stockholders of Achieve may receive consideration in the merger that is less than the fair market value of the Achieve shares and/or OncoGenex may pay more than the fair market value of the Achieve shares.

These risks and other risks are discussed in greater detail under the section entitled "Risk Factors." OncoGenex and Achieve both encourage you to read and consider all of these risks carefully.

Regulatory Approvals

In the United States, OncoGenex must comply with applicable federal and state securities laws and the rules and regulations of The NASDAQ Capital Market in connection with the issuance of shares of OncoGenex common stock and the filing of this proxy statement/prospectus/information statement with the SEC. As of the date hereof, the registration statement of which this proxy statement/prospectus/information statement is a part has not become effective.

NASDAQ Stock Market Listing

OncoGenex has filed an initial listing application for the combined company with The NASDAQ Capital Market pursuant to NASDAQ Stock Market LLC "reverse merger" rules. If such application is accepted, OncoGenex anticipates that OncoGenex's common stock will continue to be listed on The NASDAQ Capital Market following the closing of the merger under the trading symbol "ACHV."

Anticipated Accounting Treatment

The merger will be treated by OncoGenex as a reverse merger under the acquisition method of accounting in accordance with accounting principles generally accepted in the United States. For accounting purposes, Achieve is considered to be acquiring OncoGenex in the merger.

Appraisal Rights and Dissenters' Rights

Holders of OncoGenex common stock are not entitled to appraisal rights in connection with the merger. Achieve stockholders are entitled to appraisal rights in connection with the merger under Delaware law. For more information about such rights, see the provisions of Section 262 of the Delaware General Corporation Law, or the DGCL, attached hereto as *Annex E*, and the section entitled "The Merger—Appraisal Rights and Dissenters' Rights."

Comparison of Stockholder Rights

Both OncoGenex and Achieve are incorporated under the laws of the State of Delaware and, accordingly, the rights of the stockholders of each are currently, and will continue to be, governed by the DGCL. If the merger is completed, Achieve stockholders will become stockholders of OncoGenex, and their rights will be governed by the DGCL, the bylaws of OncoGenex and, assuming OncoGenex Proposal No. 2 is approved by OncoGenex stockholders at the OncoGenex special meeting, the certificate of incorporation of OncoGenex attached to this proxy statement/prospectus/information statement as *Annex B*. The rights of OncoGenex stockholders contained in the certificate of incorporation and bylaws of OncoGenex differ from the rights of Achieve stockholders under the certificate of incorporation and bylaws of Achieve, as more fully described under the section entitled "Comparison of Rights of Holders of OncoGenex Stock and Achieve Stock."

SELECTED HISTORICAL AND UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION AND DATA

The following tables present summary historical financial data for OncoGenex and Achieve, summary unaudited pro forma condensed combined financial data for OncoGenex and Achieve, and comparative historical and unaudited pro forma per share data for OncoGenex and Achieve.

Selected Historical Consolidated Financial Data of OncoGenex

The selected consolidated statements of operations data for the years ended December 31, 2016, 2015 and 2014 and the selected consolidated balance sheet data as of December 31, 2016 and 2015 are derived from OncoGenex's audited consolidated financial statements included elsewhere in this proxy statement/prospectus/information statement. The selected consolidated statements of operations data for the years ended December 31, 2013 and 2012 and the selected consolidated balance sheet data as of December 31, 2014, 2013 and 2012 are derived from OncoGenex's audited consolidated financial statements which are not included in this proxy statement/prospectus/information statement. OncoGenex's historical results are not necessarily indicative of the results that may be expected in any future period.

The selected historical consolidated financial data below should be read in conjunction with the section titled "OncoGenex Management's Discussion and Analysis of Financial Condition and Results of Operations," "Risk Factors—Risks Related to OncoGenex" and OncoGenex's consolidated financial statements and related notes included elsewhere in this proxy statement/prospectus/information statement.

	December 31,				
	2016	2015	2014	2013	2012
	(in thousands except share and per share amounts)				
Statements of Loss Data:					
Collaboration revenue	$ 5,062	$ 18,160	$ 27,116	$ 29,882	$ 20,095
Total expenses	$ 26,254	$ 36,913	$ 56,582	$ 65,209	$ 46,082
Net loss	$ (20,129)	$ (16,801)	$ (26,240)	$ (31,849)	$ (21,098)
Basic and diluted loss per common share	$ (0.67)	$ (0.64)	$ (1.45)	$ (2.17)	$ (1.56)
Shares used in calculation of net loss per share, basic and diluted	29,949,432	26,147,344	18,098,799	14,683,389	13,522,723

	December 31,				
	2016	2015	2014	2013	2012
	(in thousands)				
Balance Sheet Data:					
Cash, cash equivalents and short-term investments	$ 25,463	$ 55,186	$ 47,057	$ 39,222	$ 75,383
Total assets	$ 27,470	$ 58,209	$ 56,291	$ 55,689	$ 82,016
Current liabilities	$ 8,455	$ 20,664	$ 22,218	$ 14,934	$ 11,556
Total liabilities	$ 8,504	$ 20,769	$ 22,232	$ 18,478	$ 15,809
Additional paid-in capital	$ 213,239	$ 211,590	$ 191,373	$ 168,242	$ 165,395
Accumulated deficit	$ (196,942)	$ (176,811)	$ (159,958)	$ (133,689)	$ (101,840)
Stockholders' equity	$ 18,966	$ 37,440	$ 34,059	$ 37,211	$ 66,207

Selected Historical Consolidated Financial Data of Achieve

The selected consolidated statements of operations data for the year ended December 31, 2016 and period ended December 31, 2015 and the selected consolidated balance sheet data as of December 31, 2016 and 2015 are derived from Achieve's audited consolidated financial statements included elsewhere in this proxy statement/prospectus/information statement. The audit report on the consolidated financial statements as of December 31, 2016 and 2015 and for the year ended December 31, 2016 and period ended December 31, 2015, which appears elsewhere herein, includes an explanatory paragraph related to Achieve's ability to continue as a going concern. Achieve's historical results are not necessarily indicative of the results that may be expected in any future period.

The selected historical consolidated financial data below should be read in conjunction with the section titled "Achieve Management's Discussion and Analysis of Financial Condition and Results of Operations," "Risk Factors—Risks Related to Achieve's Financial Condition and Capital Requirements" and Achieve's consolidated financial statements and related notes included elsewhere in this proxy statement/prospectus/information statement.

	December 31,	
	2016	2015
	(in thousands)	
Consolidated Statements of Loss Data:		
Research and development	$ 286	$ 107
General and administrative	$ 1,428	$ 1,116
Total operating expenses	$ 1,714	$ 1,223
Net loss	$ (1,234)	$ (828)

	December 31,	
	2016	2015
	(in thousands)	
Consolidated Balance Sheet Data:		
Cash and cash equivalents	$ 15	$ 67
Total assets	$ 3,807	$ 4,078
Total liabilities	$ 3,197	$ 2,238
Additional paid-in capital	$ 2,667	$ 2,667
Accumulated deficit	$ (2,062)	$ (828)
Total stockholders' equity	$ 610	$ 1,840

Selected Unaudited Pro Forma Condensed Combined Financial Data of OncoGenex and Achieve

The following information does not give effect to the proposed reverse stock split of OncoGenex common stock described in OncoGenex Proposal No. 2.

The following unaudited pro forma condensed combined financial information gives effect to the transaction between OncoGenex and Achieve to be accounted for as a reverse acquisition, with Achieve being deemed the acquiring company for accounting purposes.

The unaudited pro forma condensed combined balance sheet as of December 31, 2016 assumes that the transaction took place on December 31, 2016 and combines the historical balance sheets of OncoGenex and Achieve as of such date. The unaudited pro forma condensed combined statement of operations for year ended December 31, 2016 assumes that the transaction took place as of January 1, 2016, and combines the historical results of OncoGenex and Achieve for the year. The historical financial statements of OncoGenex and Achieve have been adjusted to give pro forma effect to events that are (i) directly attributable to the transaction, (ii) factually supportable, and (iii) with respect to the statements of operations, expected to have a continuing impact on the combined results.

The unaudited pro forma condensed combined financial information, including the notes thereto, should be read in conjunction with the separate OncoGenex and Achieve historical financial statements, and their respective management's discussion and analysis of financial condition and results of operations. Achieve's historical audited financial statements for the year ended December 31, 2016 and the period ended December 31, 2015 are included elsewhere in this proxy statement/prospectus/information statement. OncoGenex's historical audited financial statements for the years ended December 31, 2016 and December 31, 2015 are included elsewhere in this proxy statement/prospectus/information statement.

	Year Ended December 31, 2016 (in thousands, except per share data)
Unaudited Pro Forma Condensed Combined Statements of Operations:	
Collaboration revenue	$ 5,062
Total operating expenses	$ 26,871
Net loss	$ (20,266)
Basic and diluted net loss per common share	$ (0.17)

	As of December 31, 2016 (in thousands)
Unaudited Pro Forma Condensed Combined Balance Sheet:	
Cash and cash equivalents	$ 25,750
Working capital	$ 10,724
Total assets	$ 33,992
Accumulated deficit	$ (1,242)
Stockholders' equity:	$ 16,442

Comparative Historical and Unaudited Pro Forma per Share Data

The information below reflects the historical net loss and book value per share of OncoGenex common stock and the historical net loss and book value per share of Achieve common stock in comparison with the unaudited pro forma net loss and book value per share after giving effect to the proposed merger of OncoGenex with Achieve on a pro forma basis. The unaudited pro forma net loss and book value per share does not give effect to the proposed reverse stock split of OncoGenex common stock described in OncoGenex Proposal No. 2.

You should read the tables below in conjunction with the audited financial statements of OncoGenex included in this proxy statement/prospectus/information statement and the audited financial statements of Achieve included in this proxy statement/prospectus/information statement and the related notes and the unaudited pro forma condensed combined financial information and notes related to such financial statements included elsewhere in this proxy statement/prospectus/information statement.

	Year Ended December 31, 2016
OncoGenex Historical Per Common Share Data:	
Basic and diluted net loss per share	$ (0.67)
Book value per share	$ 0.63
Achieve Historical Per Common Share Data:	
Basic and diluted net loss per share	$ (58.13)
Book value per share	$ 28.73
Combined Company Per Common Share Data:	
Basic and diluted net loss per share	$ (0.17)
Book value per share	$ 0.14

MARKET PRICE AND DIVIDEND INFORMATION

OncoGenex common stock is listed on The NASDAQ Capital Market under the symbol "OGXI." The following table presents, for the periods indicated, the range of high and low per share sales prices for OncoGenex common stock as reported on The NASDAQ Capital Market for each of the periods set forth below. Achieve is a private company and its common stock and preferred stock are not publicly traded. These per share sales prices do not give effect to the proposed reverse stock split of OncoGenex common stock to be implemented prior to the consummation of the merger.

OncoGenex Common Stock

	High	Low
Year Ended December 31, 2015:		
First quarter	$2.78	$1.92
Second quarter	3.10	1.74
Third quarter	4.10	1.38
Fourth quarter	2.80	1.11
Year Ended December 31, 2016:		
First quarter	$1.23	$0.45
Second quarter	1.42	0.68
Third quarter	1.03	0.46
Fourth quarter	0.70	0.33

On May 2, 2017, the last reported sale price of OncoGenex's common stock on the NASDAQ Capital Market was $0.41 per share.

Because the market price of OncoGenex common stock is subject to fluctuation, the market value of the shares of OncoGenex common stock that Achieve stockholders will be entitled to receive in the merger may increase or decrease.

Assuming approval of OncoGenex Proposal No. 3 and successful application for initial listing with The NASDAQ Capital Market, following the consummation of the merger, OncoGenex common stock will continue to be listed on The NASDAQ Capital Market and will trade under OncoGenex's new name, "Achieve Life Sciences, Inc." and trading symbol "ACHV."

As of February 15, 2017, there were approximately 57 stockholders of record and there were approximately 9,508 beneficial stockholders of our common stock.

Dividend Policy

OncoGenex has never paid or declared, and does not anticipate declaring, or paying in the foreseeable future, any cash dividends on its common stock. Future determination as to the declaration and payment of dividends, if any, will be at the discretion of OncoGenex's board of directors and will depend on then existing conditions, including its operating results, financial conditions, contractual restrictions, capital requirements, business prospects and other factors its board of directed may deem relevant.

Achieve has never paid or declared any cash dividends on its common stock. If the merger does not occur, Achieve does not anticipate paying any cash dividends on its common stock in the foreseeable future, and Achieve intends to retain all available funds and any future earnings to fund the development and expansion of its business. Any future determination to pay dividends will be at the discretion of Achieve's board of directors and will depend upon a number of factors, including its results of operations, financial condition, future prospects, contractual restrictions, restrictions imposed by applicable law and other factors Achieve's board of directors deems relevant.

RISK FACTORS

The combined company will be faced with a market environment that cannot be predicted and that involves significant risks, many of which will be beyond its control. In addition to the other information contained in this proxy statement/prospectus/information statement, you should carefully consider the material risks described below before deciding how to vote your shares of stock. In addition, you should read and consider the risks associated with the business of OncoGenex because these risks may also affect the combined company. These risks can be found in OncoGenex's Annual Report on Form 10-K, as updated by subsequent Quarterly Reports on Form 10-Q, all of which are filed with the SEC. You should also read and consider the other information in this proxy statement/prospectus/information statement and the other documents incorporated by reference into this proxy statement/prospectus/information statement. Please see the section entitled "Where You Can Find More Information."

Risks Related to the Merger

The exchange ratio is not adjustable based on the market price of OncoGenex common stock so the merger consideration at the closing may have a greater or lesser value than at the time the Merger Agreement was signed.

The Merger Agreement has set the exchange ratio for the Achieve common stock, and the exchange ratio is only adjustable upward or downward based on increases or decreases in the number of shares of Achieve's issued and outstanding capital stock and the number of shares of Achieve capital stock issuable upon the exercise of all issued and outstanding equity awards, the number of OncoGenex's issued and outstanding common stock, the payment of cash in lieu of fractional shares and the proposed reverse stock split, prior to completion of the merger as described in "The Merger—Merger Consideration." The pre-split exchange ratio is 4,242.8904, and the post-split exchange ratio will depend on the exact reverse stock split ratio that is ultimately determined by the OncoGenex board of directors in consultation with the Achieve board of directors and certain changes in the capitalization of the two companies. Any changes in the market price of OncoGenex common stock before the completion of the first merger will not affect the number of shares Achieve stockholders will be entitled to receive pursuant to the Merger Agreement. Therefore, if before the completion of the first merger the market price of OncoGenex common stock declines from the market price on the date of the Merger Agreement, then Achieve stockholders could receive merger consideration with substantially lower value. Similarly, if before the completion of the first merger the market price of OncoGenex common stock increases from the market price on the date of the Merger Agreement, then Achieve stockholders could receive merger consideration with substantially more value for their shares of Achieve capital stock than the parties had negotiated for in the establishment of the exchange ratio. Because the exchange ratio does not adjust as a result of changes in the value of OncoGenex common stock, for each one percentage point that the market value of OncoGenex common stock rises or declines, there is a corresponding one percentage point rise or decline, respectively, in the value of the total merger consideration issued to Achieve stockholders.

Failure to complete the merger may result in OncoGenex and Achieve paying a termination fee or expenses to the other party and could harm the common stock price of OncoGenex and future business and operations of each company.

If the merger is not completed, OncoGenex and Achieve are subject to the following risks:

- if the Merger Agreement is terminated under certain circumstances, OncoGenex or Achieve will be required to pay certain transaction expenses of the other party, up to a maximum of $0.5 million;
- if the Merger Agreement is terminated under certain circumstances, OncoGenex or Achieve will be required to pay the other party a termination fee of $0.5 million or $1.0 million, depending on the reasons for the termination;
- the price of OncoGenex stock may decline and remain volatile; and

- costs related to the merger, such as legal and accounting fees which OncoGenex and Achieve estimate will total approximately $2.8 million and $0.7 million, respectively, the majority of which must be paid even if the merger is not completed.

In addition, if the Merger Agreement is terminated and the board of directors of OncoGenex or Achieve determines to seek another business combination, there can be no assurance that either OncoGenex or Achieve will be able to find a partner willing to provide equivalent or more attractive consideration than the consideration to be provided by each party in the merger.

If the conditions to the first merger are not met, the merger may not occur.

Even if the merger is approved by the stockholders of OncoGenex and Achieve, specified conditions must be satisfied or waived to complete the merger. These conditions are set forth in the Merger Agreement and described in the section entitled "The Merger Agreement—Conditions to the Completion of the Merger." OncoGenex and Achieve cannot assure you that all of the conditions will be satisfied or waived. If the conditions are not satisfied or waived, the merger may not occur or will be delayed, and OncoGenex and Achieve each may lose some or all of the intended benefits of the merger.

The merger may be completed even though material adverse changes may result from the announcement of the merger, industry-wide changes and other causes.

In general, either OncoGenex or Achieve can refuse to complete the merger if there is a material adverse change affecting the other party between January 5, 2017, the date of the Merger Agreement, and the closing. However, certain types of changes do not permit either party to refuse to complete the merger, even if such change could be said to have a material adverse effect on OncoGenex or Achieve, including:

- any effect, change, event, circumstance or development in general economic or political conditions generally affecting the industries in which Achieve or OncoGenex operate;
- any act or threat of terrorism or war anywhere in the world, any armed hostilities or terrorist activities anywhere in the world, any threat or escalation of armed hostilities or terrorist activities anywhere in the world or any governmental or other response or reaction to any of the foregoing;
- any changes in accounting requirements or principles or any change in applicable laws, rules or regulations or the interpretation thereof;
- any effect resulting from the announcement or pendency of the merger or any related transactions;
- with respect to OncoGenex, any change in the stock price or trading volume of OncoGenex common stock;
- with respect to OncoGenex, the existence of actual litigation itself arising from allegations of a breach of a fiduciary duty relating to the Merger Agreement;
- with respect to OncoGenex, the termination, sublease or assignment of OncoGenex's facility lease, or failure to do the foregoing; or
- with respect to Achieve, any rejection by a governmental body of a registration or filing by Achieve relating to certain Achieve intellectual property rights.

If adverse changes occur and OncoGenex and Achieve still complete the merger, the combined company stock price may suffer. This in turn may reduce the value of the merger to the stockholders of OncoGenex, Achieve or both.

The combined company will need to raise additional capital by issuing securities or debt or through licensing arrangements, which may cause dilution to the combined company's stockholders or restrict the combined company's operations or proprietary rights.

The combined company may be required to raise additional funds sooner than currently planned. Additional financing may not be available to the combined company when it needs it or may not be available on favorable terms. To the extent that the combined company raises additional capital by issuing equity securities, such an issuance may cause significant dilution to the combined company's stockholders' ownership and the terms of any new equity securities may have preferences over the combined company's common stock. Any debt financing the combined company enters into may involve covenants that restrict its operations. These restrictive covenants may include limitations on additional borrowing and specific restrictions on the use of the combined company's assets, as well as prohibitions on its ability to create liens, pay dividends, redeem its stock or make investments. In addition, if the combined company raises additional funds through licensing arrangements, it may be necessary to grant licenses on terms that are not favorable to the combined company.

Some OncoGenex and Achieve executive officers and directors have interests in the merger that are different from yours and that may influence them to support or approve the merger without regard to your interests.

Certain officers and directors of OncoGenex and Achieve participate in arrangements that provide them with interests in the merger that are different from yours, including, among others, the continued service as an officer or director of the combined company, severance and retention benefits, the acceleration of stock option and/or restricted stock unit vesting, continued indemnification and the potential ability to sell an increased number of shares of common stock of the combined company in accordance with Rule 144 under the Securities Act of 1933, as amended, or the Securities Act.

For example, Scott Cormack, OncoGenex's Chief Executive Officer, will no longer serve as Chief Executive Officer upon the consummation of the merger. Consistent with the terms of Mr. Cormack's existing employment agreement and equity award agreements, upon the termination of Mr. Cormack's employment, assuming such termination occurred on March 22, 2017, he will receive benefits having an aggregate value of approximately $1.3 million, comprised of approximately $1.2 million in cash and approximately $0.1 million received upon the acceleration of outstanding equity and in connection with other benefits. Additionally, certain executive officers and directors of OncoGenex will continue in their current roles at the combined company. For more information concerning the treatment of OncoGenex options in connection with the merger, see the section entitled "The Merger Agreement—Treatment of OncoGenex Stock Options and Warrants."

For example, some of Achieve's directors and executive officers are expected to become directors and executive officers of the combined company upon the closing of the merger while other Achieve directors and executive officers will not have roles in the combined company. Specifically, Richard Stewart and Dr. Anthony Clarke, both of whom are currently executive officers of and consultants to Achieve, are expected to become executive officers of the combined company upon the closing of the merger, with Mr. Stewart serving as the Chief Executive Officer and Dr. Clarke serving as the Chief Scientific Officer of the combined company. Additionally, Mr. Stewart and Dr. Clarke, both of whom are current directors of Achieve, will be designated to serve on the board of directors of the combined company following the closing of the merger. Ronald Martell, the former Chief Executive Officer of Achieve and a director of Achieve, will not continue as the Chief Executive Officer of the combined company or as a director of the combined company and Mr. Martell will not continue to serve in any capacity with the combined company. Caroline Loewy, the former Chief Financial Officer of Achieve, will not continue as the Chief Financial Officer of the combined company and Ms. Loewy will not continue to serve in other capacity with the combined company. Mr. Martell and Ms. Loewy are expected to receive certain payments in connection with their separation, which have not yet been determined.

The market price of the combined company's common stock following the merger may decline as a result of the merger.

The market price of the combined company's common stock may decline as a result of the merger for a number of reasons including if:

- investors react negatively to the prospects of the combined company's business and prospects from the merger;
- the effect of the merger on the combined company's business and prospects is not consistent with the expectations of financial or industry analysts; or
- the combined company does not achieve the perceived benefits of the merger as rapidly or to the extent anticipated by financial or industry analysts.

The CVRs may not result in any cash or other payments to holders of CVRs.

Although OncoGenex currently plans to enter into the CVR agreement and issue CVRs to existing holders of OncoGenex common stock, if OncoGenex and Achieve agree, the terms of the CVR agreement as currently contemplated may be changed prior to OncoGenex entering into the CVR agreement and, consequently, there is no assurance that the CVRs will be issued at all or based on the terms currently set forth in the form of the CVR agreement. For more information regarding the CVRs, see the section entitled "Agreements Related to the Merger—CVR Agreement."

Additionally, OncoGenex and the combined company must identify and enter into a binding term sheet with a third party relating to the third party's development and potential commercialization of apatorsen by August 17, 2017 for the CVRs to have any value. OncoGenex and the combined company may be unable to identify and enter into an agreement with a third party to develop and potentially commercialize apatorsen by August 17, 2017, and if it does, the third party may not meet the requisite development milestones under the CVR agreement and CVR holders may never receive any value from the CVRs. If CVRs are issued, they will not be certificated or transferable and may not result in any cash payments to holders of CVRs. Under the CVR agreement, the combined company will have limited obligations to pursue, engage in, negotiate, enter into or consummate an actual or potential partnering agreement with respect to apatorsen. If any payment is made on the CVRs, it will not be made until the achievement of a milestone. Because the amount of any payment on the CVRs will not be able to be determined at the effective time of the merger, and may not be determined for a significant period of time thereafter, it may be difficult to value the CVRs.

The tax treatment of the CVRs is uncertain.

In the opinion of Fenwick and West LLP, OncoGenex's legal counsel, the distribution and issuance of CVRs to common stockholders of OncoGenex prior to completion of the first merger and under the terms expressed in the form of the CVR agreement attached as *Annex F* to this proxy statement/prospectus/information statement is more likely than not to be treated as a distribution of property with respect to OncoGenex common stock under the Code. However, there is no authority directly on point addressing the U.S. federal income tax treatment of contingent value rights with characteristics similar to the CVRs. Therefore, it is possible that the distribution and issuance of the CVRs may be treated as a distribution of equity with respect to its stock, an "open transaction," or as a "debt instrument" for U.S. federal income tax purposes, and such questions are inherently factual in nature. For more information regarding the U.S. federal income tax consequences of the CVRs, see the section entitled "Agreements Related to the Merger —CRV Agreement—Tax Treatment of CVRs."

OncoGenex and Achieve stockholders may not realize a benefit from the merger commensurate with the ownership dilution they will experience in connection with the merger.

If the combined company is unable to realize the full strategic and financial benefits currently anticipated from the merger, OncoGenex and Achieve stockholders will have experienced substantial dilution of their ownership

interests in their respective companies without receiving any commensurate benefit, or only receiving part of the commensurate benefit to the extent the combined company is able to realize only part of the strategic and financial benefits currently anticipated from the merger.

During the pendency of the merger, OncoGenex and Achieve may not be able to enter into a business combination with another party at a favorable price because of restrictions in the Merger Agreement, which could adversely affect their respective businesses.

Covenants in the Merger Agreement impede the ability of OncoGenex and Achieve to make acquisitions, subject to certain exceptions relating to fiduciary duties, or complete other transactions that are not in the ordinary course of business pending completion of the first merger. As a result, if the first merger is not completed, the parties may be at a disadvantage to their competitors during that period. In addition, while the Merger Agreement is in effect, each party is generally prohibited from soliciting, initiating, encouraging or entering into certain extraordinary transactions, such as a merger, sale of assets or other business combination outside the ordinary course of business, with any third party, subject to certain exceptions. Any such transactions could be favorable to such party's stockholders.

Certain provisions of the Merger Agreement may discourage third parties from submitting alternative takeover proposals, including proposals that may be superior to the arrangements contemplated by the Merger Agreement.

The terms of the Merger Agreement prohibit each of OncoGenex and Achieve from soliciting alternative takeover proposals or cooperating with persons making unsolicited takeover proposals, except in certain circumstances when such party's board of directors determines in good faith, after consultation with its financial advisor and outside legal counsel, that an unsolicited alternative takeover proposal constitutes or is reasonably likely to result in a superior takeover proposal. In addition, if OncoGenex or Achieve terminate the Merger Agreement under certain circumstances, including terminating because of a decision of a board of directors to recommend an alternative proposal, OncoGenex or Achieve would be required to pay a termination fee of $0.5 million to the other party. If OncoGenex or Achieve is in breach of certain of the no solicitation obligations of the Merger Agreement, OncoGenex or Achieve, as applicable, will be required to pay the other party a termination fee of $1.0 million. In addition, in some circumstances, OncoGenex and Achieve are required to reimburse the other party for expenses incurred in connection with the merger, up to a maximum of $0.5 million. These termination fees and reimbursement obligations may discourage third parties from submitting alternative takeover proposals to OncoGenex or Achieve or their stockholders, and may cause the respective boards of directors to be less inclined to recommend an alternative proposal.

Because the lack of a public market for Achieve shares makes it difficult to evaluate the fairness of the merger, the stockholders of Achieve may receive consideration in the first merger that is less than the fair market value of the Achieve shares and/or OncoGenex may pay more than the fair market value of the Achieve shares.

The outstanding capital stock of Achieve is privately held and is not traded in any public market. The lack of a public market makes it extremely difficult to determine the fair market value of Achieve. Because the percentage of OncoGenex equity to be issued to Achieve stockholders was determined based on negotiations between the parties, it is possible that the value of the OncoGenex common stock to be received by Achieve stockholders will be less than the fair market value of Achieve, or OncoGenex may pay more than the aggregate fair market value for Achieve.

Risks Related to OncoGenex

Investing in OncoGenex common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information contained in this proxy statement/

prospectus/information statement and in the other periodic and current reports and other documents it files with the Securities and Exchange Commission, before deciding to invest in its common stock. If any of the following risks materialize, OncoGenex's business, financial condition, results of operation and future prospects will likely be materially and adversely affected. In that event, the market price of its common stock could decline and you could lose all or part of your investment.

OncoGenex Risks Related to the Merger

There is no assurance that the proposed merger between OncoGenex and Achieve will be completed in a timely manner or at all. If the merger with Achieve is not consummated, OncoGenex's business could suffer materially and its stock price could decline.

The consummation of the proposed merger between OncoGenex and Achieve is subject to a number of closing conditions, including the approval by the stockholders of both OncoGenex and Achieve and other customary closing conditions. The parties are targeting a closing of the transaction in mid-2017. However, there can be no assurance that the proposed merger will be consummated on the desired timeframe, or at all.

If the proposed merger between OncoGenex and Achieve is not consummated, OncoGenex may be subject to a number of material risks, and its business and stock price could be adversely affected, as follows:

- it has incurred and expect to continue to incur significant expenses related to the proposed merger with Achieve even if the merger is not consummated;
- it could be obligated to pay Achieve up to a $1.0 million termination fee and/or up to $0.5 million in merger related expenses in connection with the termination of the merger agreement, depending on the reason for the termination;
- the market price of its common stock may decline to the extent that the current market price reflects a market assumption that the proposed merger will be completed; and
- it may not be able to pursue an alternate merger transaction if the proposed merger with Achieve is not completed.

If the merger is not completed, the board of directors of OncoGenex may decide to pursue a dissolution and liquidation of the company. In such an event, the amount of cash available for distribution to its stockholders will depend heavily on the timing of such liquidation as well as the amount of cash that will need to be reserved for commitments and contingent liabilities.

There can be no assurance that the merger will be completed. If the merger is not completed, the board of directors of OncoGenex may decide to pursue a dissolution and liquidation of the company. In such an event, the amount of cash available for distribution to its stockholders will depend heavily on the timing of such decision, as with the passage of time the amount of cash available for distribution will be reduced as it continues to fund its operations. In addition, if its board of directors was to approve and recommend, and its stockholders were to approve, a dissolution and liquidation of the company, OncoGenex would be required under Delaware corporate law to pay out outstanding obligations, as well as to make reasonable provision for contingent and unknown obligations, prior to making any distributions in liquidation to its stockholders. OncoGenex's commitments and contingent liabilities may include severance obligations, regulatory and clinical obligations remaining under its clinical trials, fees and expenses related to the merger and non-cancelable lease obligations. As a result of this requirement, a portion of its assets may need to be reserved pending the resolution of such obligations. In addition, OncoGenex may be subject to litigation or other claims related to a dissolution and liquidation. If a dissolution and liquidation were pursued, its board of directors, in consultation with its advisors, would need to evaluate these matters and make a determination about a reasonable amount to reserve. Accordingly, holders of its common stock could lose all or a significant portion of their investment in the event of a liquidation, dissolution or winding up of OncoGenex.

The issuance of shares of OncoGenex common stock to Achieve stockholders in the pending merger will dilute substantially the voting power of OncoGenex's current stockholders.

If the pending merger is completed, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of OncoGenex common stock, subject to certain adjustments. Immediately following the merger, OncoGenex equityholders are expected to own approximately 25% of the outstanding capital stock of the combined company on a fully diluted basis, and the Achieve stockholders are expected to own approximately 75% of the outstanding capital stock of the combined company on a fully diluted basis. Accordingly, the issuance of shares of OncoGenex's common stock to Achieve stockholders in the merger will reduce significantly the relative voting power of each share of OncoGenex common stock held by its current equityholders. Consequently, OncoGenex equityholders as a group will have significantly less influence over the management and policies of the combined company after the merger than prior to the merger.

OncoGenex has incurred and will continue to incur significant transaction costs in connection with the merger.

OncoGenex has incurred and will continue to incur significant transaction costs in connection with the merger. It estimates that it will incur aggregate direct transaction costs of approximately $2.8 million associated with the merger and $0.5 million that it may pay on behalf of Achieve, as well as additional costs associated with the commencement of the combined company's operation as a public company, which cannot be estimated accurately at this time.

The pendency of the merger could have an adverse effect on the trading price of OncoGenex common stock and its business, financial condition, results of operations or business prospects.

While there have been no significant adverse effects to date, the pendency of the merger could disrupt OncoGenex's businesses in the following ways, including:

- the attention of OncoGenex's management may be directed toward completion of the merger and related matters and may be diverted from the day-to-day business operations, including identifying a collaboration partner to further the development of apatorsen and from other opportunities that otherwise might be beneficial to it; and
- third parties may seek to terminate or renegotiate their relationships with OncoGenex as a result of the merger, whether pursuant to the terms of their existing agreements with it or otherwise.

Should they occur, any of these matters could adversely affect the trading price of OncoGenex common stock or harm its financial condition, results of operations or business prospects.

As a result of the custirsen phase 3 trial results and the reductions in its workforce, OncoGenex has only 11 employees remaining. If OncoGenex is unable to retain the remaining employees, its ability to consummate the pending merger may be delayed or seriously jeopardized.

In February, October and November 2016, OncoGenex announced workforce reductions, which have reduced the headcount to 11 remaining employees. Its cash conservation activities may yield unintended consequences, such as attrition beyond the planned reductions in workforce and reduced employee morale, which may cause the remaining 11 employees to seek alternate employment. Competition among biotechnology companies for qualified employees is intense, and the ability to retain the remaining employees is critical to its ability to effectively manage OncoGenex's resources and to consummate the pending merger. Additional attrition could have a material adverse effect on its business, including delaying the completion of wind down activities related to its custirsen clinical trials and related operations and increasing the time and funds required. In addition, as a result of the reduction in its workforce, OncoGenex faces an increased risk of employment litigation.

Risks Related to OncoGenex's Business

OncoGenex has incurred losses since inception and anticipates that it will continue to incur losses for the foreseeable future. It has never had any products available for commercial sale and it may never achieve or sustain profitability.

OncoGenex is a clinical-stage biopharmaceutical company, is not profitable, has incurred losses in each year since its inception and does not expect to become profitable in the foreseeable future. OncoGenex has never had any products available for commercial sale, and it has not generated any revenue from product sales nor does it anticipate that it will generate revenue from product sales in the near future. OncoGenex's revenue to date has been collaboration revenue under the Collaboration Agreement with Teva, which was terminated in April 2015. In addition, custirsen did not demonstrate its intended benefit in any phase 3 clinical trial and its development has been discontinued. Its other product candidate, apatorsen, is earlier in its development and will require a collaboration partner to fund the required additional development. OncoGenex has not yet submitted any products for approval by regulatory authorities, and it continues to incur research and development and general and administrative expenses related to its operations. OncoGenex expects to continue to incur losses for the foreseeable future. If it does not find a collaboration partner to fund additional development of apatorsen or apatorsen otherwise fails in clinical trials or does not gain regulatory approval, or if apatorsen does not achieve market acceptance, OncoGenex may never become profitable. Even if it achieves profitability in the future, OncoGenex may not be able to sustain profitability in subsequent periods.

OncoGenex cannot give any assurance that apatorsen will continue to be developed, receive regulatory approval or be successfully commercialized.

OncoGenex conducted seven randomized phase 2 clinical trials evaluating apatorsen in several cancer indications. All but one of the phase 2 clinical trials for apatorsen failed to meet their pre-defined clinical endpoints. Completing additional clinical trials will be required to establish the safety and efficacy of this product candidate. OncoGenex currently does not have sufficient capital to conduct additional clinical trials for apatorsen without collaborating with a strategic partner, raising additional funds or completing a strategic transaction committed to the development of apatorsen. OncoGenex is currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen. If it identifies such a third party by August 17, 2017 and its pending acquisition is completed, OncoGenex stockholders will receive contingent value rights, or CVRs, to receive 80% of the consideration, less certain offsets, received by the combined company during the five-year period after the completion of the merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to apatorsen. OncoGenex cannot give any assurance that it will be able to identify and enter into an agreement with a third party to develop and potentially commercialize apatorsen by August 17, 2017, or if it does, that any consideration will ever be received by the combined company or distributed to its stockholders. If OncoGenex is unable to enter into an agreement with a third party regarding the development of apatorsen by August 17, 2017, the development of apatorsen may be delayed or terminated.

If OncoGenex is able to enter into an agreement with a third party to develop apatorsen, the failure of apatorsen to be shown safe or effective in one or more indications could negatively impact the development of apatorsen in other indications, could result in the suspension or termination of apatorsen development and commercialization plans and could cause the CVRs to be of no or little value. Further, apatorsen consideration, if any, received beyond August 2022 would accrue to the benefit of the combined company stockholders generally and not to the CVR holders.

OncoGenex's clinical development program for apatorsen may not receive regulatory approval either if apatorsen fails to demonstrate that it is safe and effective in clinical trials and consequently fail to obtain necessary approvals from the regulatory agencies, or if it has inadequate financial or other resources to advance apatorsen through the clinical trial process. If competitive products developed by third parties show significant benefit in the cancer indications in which it is developing apatorsen, any planned supportive or primary registration trials

may be delayed, altered or not initiated and apatorsen may never receive regulatory approval. Any failure to obtain regulatory approval of apatorsen could have a material and adverse effect on OncoGenex's business.

Because OncoGenex depends on financing from third parties for its operations, its business may fail if such financing becomes unavailable or is not available on commercially reasonable terms.

To date, OncoGenex has financed its operations primarily through the sale of its equity securities and from payments it received pursuant to the Collaboration Agreement with Teva. In April 2015, its Collaboration Agreement with Teva was terminated, and OncoGenex will not receive any future payments from Teva. OncoGenex believes that its existing capital resources and interest on such resources will be sufficient to meet its current operating requirements for at least the next 12 months. However, if the timeline to complete the recently announced merger takes longer than anticipated or is not completed, OncoGenex changes its development plans or elects to further develop apatorsen, cannot find third-party collaborators to fund further development of apatorsen, its trials proceed slower or take longer than expected to complete, it acquires rights to new product candidates, does not successfully defend litigation or engages in commercialization and product launch activities, it will need additional capital sooner than it expects. OncoGenex's future capital requirements will depend on many factors, including, without limitation:

- the timing of completion of the pending merger with Achieve;
- whether OncoGenex modifies its development program for apatorsen, including terminating and starting new trials;
- whether OncoGenex is able to enter into additional third-party collaborative partnerships to develop and/or commercialize apatorsen on terms that are acceptable to it, or at all;
- the scope and results of its clinical trials;
- its ability to forecast the cost of its ongoing development activities;
- whether OncoGenex experiences delays in its development program of apatorsen, or experience slower-than-anticipated product development or rate of events;
- conducting studies required to obtain regulatory approvals for apatorsen from regulatory agencies;
- the availability of third parties to perform the key development tasks for apatorsen, including conducting preclinical studies and clinical trials and manufacturing apatorsen to be tested in those studies and trials and the associated costs of those services;
- the costs involved in preparing, filing, prosecuting, maintaining, defending the validity of and enforcing patent claims and other costs related to patent rights and other intellectual property rights, including litigation costs and the results of such litigation;
- whether opportunities to acquire additional product candidates arise and the costs of acquiring and developing those product candidates;
- the costs to defend, and the results of, litigation; and
- whether it engages in commercialization and product launch activities.

If OncoGenex is unable to raise funds on acceptable terms when it becomes necessary to do so, it may not be able to continue developing apatorsen, acquire or develop additional product candidates or respond to competitive pressures or unanticipated requirements. For these reasons, any inability to raise additional funds when necessary could have a material adverse effect on OncoGenex's business.

OncoGenex intends to partner with third-party collaborators with respect to the development and commercialization of apatorsen, and it cannot control whether it will be able to do so on favorable terms, if at all.

OncoGenex is currently undertaking efforts to identify and enter into an agreement with a third party to fund and undertake the development and potential commercialization of apatorsen. If it is not able to do so by August 2017 and the pending merger is completed, the CVRs will be terminated and the CVR holders will not realize any value from the CVRs.

OncoGenex will be competing with many other companies as it seeks partners for apatorsen and may not be able to compete successfully against those companies. If it is not able to enter into collaboration arrangements for apatorsen, OncoGenex would be required to undertake and fund further development, clinical trials, manufacturing and commercialization activities solely at its own expense and risk. If OncoGenex is unable to finance and/or successfully execute those expensive activities, or it delays such activities due to capital availability, its business could be materially and adversely affected, and potential future product launch could be materially delayed, be less successful, or it may be forced to discontinue clinical development of its product candidate.

Clinical trials may not demonstrate a clinical benefit of apatorsen.

Positive results from preclinical studies and clinical trials, including any exploratory results from the apatorsen clinical trials conducted to date should not be relied on as evidence that on-going, amended, or later-stage or large-scale clinical trials will succeed.

OncoGenex, or a collaboration partner, will be required to demonstrate with substantial evidence through well-controlled clinical trials that apatorsen is safe and effective for use in a diverse population before it or a collaboration partner can seek regulatory approvals for its commercial sale. Success in early clinical trials does not mean that future clinical trials will be successful because evaluation of apatorsen in later-stage clinical trials may fail to demonstrate sufficient safety and efficacy to the satisfaction of regulatory agencies, despite having progressed through initial clinical trials. For example, all of OncoGenex's phase 3 clinical trials for custirsen failed to meet their clinical endpoints, even after encouraging results in earlier trials. Further, preliminary or top-line results from clinical trials may not be confirmed in final data, or may change materially.

Even after the completion of phase 3 clinical trials, regulatory agencies may disagree with OncoGenex's clinical trial design and its interpretation of data, and may require OncoGenex to conduct additional clinical trials to demonstrate the efficacy of apatorsen.

OncoGenex may choose to make amendments to ongoing studies for any reason including to analyze final top line data earlier than planned. Any future amendments may compromise the integrity of the clinical trial results and may not be acceptable to regulators.

OncoGenex relies on third parties to manufacture and supply apatorsen and other agents used in its clinical trials and potential future commercial use. A decrease in the availability or quality of apatorsen or agents could increase clinical trial costs, delay or halt clinical development or regulatory approval or commercialization of apatorsen, resulting in additional losses and depriving OncoGenex of potential product revenue.

OncoGenex does not own or operate manufacturing facilities, and it depends on third-party contract manufacturers for production of apatorsen and relies on other companies and their manufacturers for other agents used in all of its clinical trials. OncoGenex lacks the resources and the capability to manufacture apatorsen itself. To date, its product candidates, including apatorsen, have been manufactured in limited quantities for preclinical studies and clinical trials. All active pharmaceutical ingredients, or API, and drug product for its product candidates have been manufactured for OncoGenex by third parties pursuant to a purchase order or short-term contract that has been fulfilled.

If, in the future, apatorsen is approved for commercial sale, OncoGenex or any pharmaceutical partner that has licensed apatorsen, if any, may need to manufacture apatorsen in commercial quantities. OncoGenex cannot provide assurance that the third-party manufacturers with which it has contracted in the past will have sufficient capacity to satisfy future manufacturing needs, that additional purchases of API or drug product will be negotiated with these or alternative manufacturers on terms favorable to it, if at all, or that the pharmaceutical partner that has licensed apatorsen, if any, will have sufficient capacity or expertise to satisfy future needs.

Third-party manufacturers may fail to perform under their contractual obligations, or may fail to deliver the required commercial quantities of bulk API or finished drug product on a timely basis and at commercially reasonable prices. OncoGenex has experienced manufacturing quality issues resulting in an unusable lot of one of its product candidates in the past. Any performance failure on the part of its contract manufacturers could delay clinical development or regulatory approval or commercialization of apatorsen, depriving OncoGenex of potential product revenue and resulting in additional losses. If an alternate manufacturer is required to be identified and qualified, clinical trials, regulatory submissions, required approvals or commercialization of apatorsen may be delayed or suspended, which may cause higher costs and could prevent successful commercialization of apatorsen. If one or more replacement manufacturers capable of production at a reasonably favorable cost, in adequate volumes, of adequate quality and on a timely basis, cannot be identified, demand for apatorsen likely cannot be met and clinical trials could be delayed or OncoGenex could lose potential revenue. The ability to replace an existing API manufacturer may be difficult because the number of potential manufacturers is limited to approximately five manufacturers, and regulatory agencies must inspect any replacement manufacturer and review information related to product produced at the manufacturer before they can begin manufacturing OncoGenex's product candidates. It may be difficult or impossible to identify and engage a replacement manufacturer on acceptable terms in a timely manner, if at all. OncoGenex expects to continue to depend on third-party contract manufacturers for the foreseeable future.

Apatorsen requires precise, high-quality manufacturing. Any of OncoGenex's contract manufacturers will be subject to ongoing periodic unannounced inspection by regulatory agencies to ensure strict compliance with current Good Manufacturing Practices, or cGMP, and other applicable government regulations and corresponding standards. If a contract manufacturer fails to achieve and maintain high manufacturing standards in compliance with cGMP regulations, manufacturing errors may be experienced resulting in patient injury or death, product recalls or withdrawals, delays or interruptions of production or failures in product testing or delivery, delay or prevention of filing or approval of marketing applications for apatorsen, cost overruns or other problems that could seriously affect OncoGenex's business.

Significant manufacturing scale-up may require additional validation studies, which the regulatory agencies must review and approve. Additionally, any third-party manufacturers retained to manufacture apatorsen on a commercial scale must pass regulatory agencies' pre-approval inspection for conformance to cGMP regulations before approval of apatorsen can be obtained. If manufacturing capacity for apatorsen in conformance with cGMP regulations is not successfully increased, the regulatory approval or commercial launch of apatorsen may be delayed or there may be a shortage in supply.

OncoGenex also relies on third parties for the provision of other agents used in its clinical trials, and in some circumstances these agents are provided to it at no cost. OncoGenex has no assurance that these third-parties will continue to provide their products to it at no cost.

If its competitors develop and market products that are more effective, safer or less expensive than apatorsen, OncoGenex's clinical trials and commercial opportunities will be negatively affected.

The life sciences industry is highly competitive, and OncoGenex faces significant competition from many pharmaceutical, biopharmaceutical and biotechnology companies that are researching and marketing products designed to address cancer indications for which apatorsen is currently being developed or for which apatorsen may be developed in the future. It is aware of several other companies that are developing therapeutics that seek

to promote tumor cell death. Several therapies have been recently approved by the FDA in indications for which apatorsen may be developed in the future, and OncoGenex expects more to be approved in the future.

Substantial advancements in the treatment of cancer have occurred in the past two years and new products from OncoGenex's competitors have been approved for marketing on the basis of showing a survival advantage. Apatorsen may be developed in the future by a collaboration partner in any number of cancer indications, including in bladder cancer. Any product OncoGenex may develop in the future is likely to face competition from other drugs and therapies. Many of its competitors have significantly greater financial, manufacturing, marketing and drug development resources than OncoGenex does. Large pharmaceutical companies, in particular, have extensive experience in clinical testing and in obtaining regulatory approvals for drugs. These companies also have significantly greater research and marketing capabilities than OncoGenex does. In addition, many universities and private and public research institutes are, or may become, active in cancer research, and develop products that may directly compete with OncoGenex. If its competitors market products that are more effective, safer or less expensive than its future product candidates, if any, or that reach the market sooner than its future product candidates, if any, OncoGenex may not achieve commercial success.

If new therapies become broadly used, additional clinical trials of apatorsen in combination with these new therapies may be required to demonstrate safety and efficacy of the combination. Additional trials will delay the development of apatorsen and increase OncoGenex's costs. The failure of apatorsen to work in combination with these new therapies would have an adverse effect on its business.

As new therapies are developed, these therapies will need to be assessed to determine whether to conduct clinical trials of apatorsen in combination with them to demonstrate safety and efficacy of the combination. If it is determined appropriate to conduct additional clinical trials of apatorsen in combination with these new therapies, the development of apatorsen will be delayed and OncoGenex's costs will be increased. If these clinical trials generate safety concerns or lack of efficacy, its business would be adversely affected.

OncoGenex relies, in part, on third parties to conduct its clinical trials for apatorsen and may rely on third parties to conduct future clinical trials, if any. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, regulatory approval for or commercialization of apatorsen may not be obtained.

To implement its product development strategies, OncoGenex relies on third parties, such as collaborators, contract research organizations, medical institutions, clinical investigators and contract laboratories, to conduct clinical trials of apatorsen. Although it relies on third parties to conduct its clinical trials, OncoGenex is responsible for ensuring that each of its clinical trials is conducted in accordance with its development plan and protocol. Moreover, regulatory agencies require OncoGenex to comply with regulations and standards, commonly referred to as Good Clinical Practices, or GCPs, for conducting, monitoring, recording and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate and that the clinical trial subjects are adequately informed of the potential risks of participating in clinical trials. Its reliance on third parties does not relieve OncoGenex of these responsibilities and requirements. If the third parties conducting its clinical trials do not perform their contractual duties or obligations, do not meet expected deadlines or need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to GCPs or for any other reason, OncoGenex may need to enter into new arrangements with alternative third parties and its clinical trials may be extended, delayed or terminated. In addition, a failure by such third parties to perform their obligations in compliance with GCPs may cause its clinical trials to fail to meet regulatory requirements, which may require OncoGenex to repeat its clinical trials.

OncoGenex's clinical trial may be suspended or terminated at any time, including by regulatory agencies, by a Data Safety Monitoring Board overseeing the clinical trial at issue, by a clinical trial site or investigator, or by it. Any failure or significant delay in completing its clinical trial for apatorsen could materially harm the commercial prospects for apatorsen.

OncoGenex does not know whether its clinical trial for apatorsen will proceed or be completed on schedule, if at all, or whether it will be able to identify a collaboration partner to fund and manage any future preclinical studies or clinical trials, as applicable. The completion of its clinical trial currently in progress could also be substantially delayed or prevented by several factors, including:

- delay or failure to complete the merger with Achieve;
- the strategic development plan of the combined company following completion of the pending merger;
- termination of the clinical trial by OncoGenex, by one or more clinical trial sites, investigators, data safety monitoring boards, granting or regulatory agencies;
- delay or failure to obtain sufficient manufacturing supply of apatorsen, or expiration of its existing supply of apatorsen prior to completing its ongoing clinical trial;
- lack of efficacy evidenced during the clinical trial;
- slower than expected final analysis of the clinical trial data;
- failure of patients to complete the clinical trial;
- unforeseen safety issues;
- inability or unwillingness of patients or medical investigators to follow the clinical trial protocol;
- inability to monitor patients adequately during or after treatment;
- introduction of competitive products that may impede its ability to retain patients in the clinical trial; and
- delay in submission or acceptance of protocol amendments, if any.

Apatorsen may cause undesirable and potentially serious side effects during clinical trials that could delay or prevent its regulatory approval or commercialization.

Adverse events have been reported for patients in all of the clinical trials evaluating apatorsen, and serious adverse events were reported for approximately half the patients in a Phase 1 clinical trial evaluating apatorsen in patients with solid tumors. Since patients in OncoGenex's clinical trials have advanced stages of cancer, OncoGenex expects that additional adverse events, including serious adverse events, will occur.

Undesirable side effects caused by apatorsen could cause OncoGenex or regulatory authorities to amend, interrupt, delay or halt clinical trials and could result in the denial of regulatory approval by regulatory agencies for any or all targeted indications or decrease the competitive opportunity of apatorsen which may decrease sales potential. This, in turn, could prevent commercialization of apatorsen and generating revenue from its sale. In addition, if apatorsen receives marketing approval and OncoGenex or others later identify undesirable side effects caused by the product:

- the ongoing clinical trial may be terminated and further product development ceased;
- regulatory authorities may withdraw their approval of the apatorsen;
- apatorsen may be recalled, or a change in the way it is administered may be required, additional clinical trials may be required or a change in the labeling of apatorsen may be necessary;
- apatorsen may become less competitive and sales may decrease; and
- OncoGenex's reputation may suffer.

Any one or a combination of these events could prevent achievement or maintenance of market acceptance of apatorsen or could substantially increase the costs and expenses of commercializing the product, which in turn could delay or prevent the generation of significant revenue from the sale of the product. Historical events have raised questions about the safety of other companies' marketed drugs and may result in increased cautiousness by regulatory agencies in reviewing new drugs based on safety, efficacy or other regulatory considerations and may result in significant delays in obtaining regulatory approvals, additional clinical trials being required, or more stringent product labeling requirements. Any delay in obtaining, or the inability to obtain, applicable regulatory approvals would prevent commercialization of apatorsen.

If OncoGenex were to be successfully sued related to its products or operations, it could face substantial liabilities that may exceed its resources.

OncoGenex may be held liable if any of its products or operations cause injury or death or are found otherwise unsuitable during product testing, manufacturing, marketing or sale. These risks are inherent in the development of pharmaceutical products. OncoGenex currently maintains commercial general and umbrella liability policies with combined limits of $10.0 million per occurrence and in the aggregate, in addition to a $10.0 million per claim and annual aggregate product liability insurance policy related to its clinical trials consistent with industry standards. When necessary for its products, OncoGenex intends to obtain additional product liability insurance. Insurance coverage may be prohibitively expensive, may not fully cover potential liabilities or may not be available in the future. Inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of its products. If OncoGenex were to be sued for any injury caused by or associated with its products or operations, the litigation could consume substantial time and attention of OncoGenex management, and the resulting liability could exceed its total assets.

Even if regulatory approval to market apatorsen is received, the market may not be receptive to the product.

Even if apatorsen obtains regulatory approval, it may not gain market acceptance among physicians, patients, healthcare payors and/or the medical community. OncoGenex believes that the degree of market acceptance will depend on a number of factors, including:

- efficacy, safety and tolerability of apatorsen;
- timing of market introduction of competitive products;
- availability of coverage and reimbursement from government and other third-party payors;
- potential advantages or disadvantages over alternative treatments;
- strength of marketing and distribution support;
- price of its apatorsen, both in absolute terms and relative to alternative treatments; and
- sequencing of available products.

If OncoGenex's future product candidates fail to achieve market acceptance, it may not be able to generate significant revenue or achieve or sustain profitability.

The successful commercialization of apatorsen will depend in part on the extent to which governmental authorities and health insurers establish adequate coverage and reimbursement levels and pricing policies.

Successful sales of apatorsen will depend, in part, on the extent to which coverage and reimbursement for the product will be available from government and health administration authorities, private health insurers and other third-party payors. To manage healthcare costs, many governments and third-party payors increasingly scrutinize the pricing of new products and require greater levels of evidence of favorable clinical outcomes and cost-

effectiveness before extending coverage. In light of such challenges to prices, OncoGenex cannot be sure that coverage for apatorsen will be obtained or, if available, that the reimbursement rates will be adequate. If adequate levels of coverage and reimbursement for apatorsen cannot be attained, its marketability will be negatively and materially impacted.

Moreover, eligibility for coverage and reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers costs, including research, development, manufacture, sale and distribution. In addition, obtaining and maintaining adequate coverage and reimbursement status is time-consuming and costly. Third party payors may deny coverage and reimbursement status altogether of a given drug product, or cover the product but may also establish prices at levels that are too low to enable OncoGenex to realize an appropriate return on its investment in product development. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. Because the rules and regulations regarding coverage and reimbursement change frequently, in some cases at short notice, even when there is favorable coverage and reimbursement, future changes may occur that adversely impact the favorable status.

The unavailability or inadequacy of third-party coverage and reimbursement could have a material adverse effect on the market acceptance of any of its future products and the future revenues OncoGenex may expect to receive from those products. In addition, it is unable to predict what additional legislation or regulation relating to the healthcare industry or third-party coverage and reimbursement may be enacted in the future, or what effect such legislation or regulation would have on its business.

OncoGenex may fail to acquire and develop additional products or product candidates at all or on commercially reasonable terms.

OncoGenex currently does not have internal discovery capabilities and depends on pharmaceutical and biotechnology companies and other researchers to sell or license products or product candidates to it. If it is unable to complete the merger with Achieve, OncoGenex may be required to identify alternative sources of product candidates.

To successfully build a product pipeline, OncoGenex would be required to identify, select and acquire pharmaceutical product candidates. Proposing, negotiating and implementing an economically viable product acquisition or license is a lengthy and complex process. OncoGenex competes for partnering arrangements and license agreements with pharmaceutical and biotechnology companies and academic research institutions. Its competitors may have stronger relationships with third parties with whom OncoGenex is interested in collaborating and/or may have more established histories of developing and commercializing products. As a result, its competitors may have a competitive advantage in entering into partnering arrangements with such third parties. In addition, even if OncoGenex finds promising product candidates, and generate interest in a partnering or strategic arrangement to acquire such product candidates, it may not be able to acquire rights to additional product candidates or approved products on terms that it finds acceptable, if at all. If OncoGenex fails to acquire and develop product candidates from others, it may be unable to grow its business.

OncoGenex expects that any product candidate that it acquires rights to will require additional development efforts prior to commercial sale, including extensive clinical evaluation and approval by regulatory agencies. All product candidates are subject to the risks of failure inherent in pharmaceutical product development, including the possibility that the product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities. Even if the product candidates are approved, OncoGenex can make no assurance that it would be capable of economically producing the product or that the product would be commercially successful.

OncoGenex may be adversely affected if its controls over financial reporting fail or are circumvented.

OncoGenex regularly reviews and updates its internal controls, disclosure controls and procedures, and corporate governance policies. In addition, although not required, OncoGenex has chosen under the Sarbanes Oxley Act of

2002 to report annually on its internal control over financial reporting. If it were to be determined that its internal control over financial reporting is not effective, such shortcoming could have an adverse effect on its business and financial results and the price of OncoGenex common stock could be negatively affected. This reporting requirement could also make it more difficult or more costly for it to obtain certain types of insurance, including director and officer liability insurance, and OncoGenex may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. Any system of internal controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system are met. Any failure or circumvention of the controls and procedures or failure to comply with regulation concerning control and procedures could have a material effect on OncoGenex's business, results of operation and financial condition. Any of these events could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of its financial statements, which ultimately could negatively affect the market price of its shares, increase the volatility of OncoGenex stock price and adversely affect its ability to raise additional funding. The effect of these events could also make it more difficult for OncoGenex to attract and retain qualified persons to serve on its Board and its Board committees and as executive officers.

Risks Related to OncoGenex's Intellectual Property

OncoGenex's proprietary rights may not adequately protect apatorsen.

OncoGenex's commercial success will depend in part on its ability to obtain patents and/or regulatory exclusivity and maintain adequate protection for apatorsen in the United States and other countries. OncoGenex or a collaboration partner, if any, will be able to protect its proprietary rights from unauthorized use by third parties only to the extent that apatorsen is covered by valid and enforceable patents or are effectively maintained as trade secrets.

OncoGenex and/or a collaboration partner, if any, may apply for additional patents covering apatorsen as it deems appropriate. OncoGenex or its collaboration partner, if any, may, however, fail to apply for patents on important technologies or apatorsen in a timely fashion, if at all. Its existing patents and any future patents OncoGenex or its collaboration partner, if any, obtain may not be sufficiently broad to prevent others from practicing its technologies or from developing competing products and technologies. In addition, OncoGenex does not always control the patent prosecution of subject matter that it licenses from others. Accordingly, OncoGenex is sometimes unable to exercise a significant degree of control over such intellectual property as it would over its own.

Moreover, the patent positions of biopharmaceutical companies are highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. As a result, the validity and enforceability of OncoGenex's patents cannot be predicted with certainty. In addition, the U.S. Supreme Court has revised certain tests regarding granting patents and assessing the validity of patents to make it more difficult to obtain patents. As a consequence, issued patents may be found to contain invalid claims according to the revised standards. Some of its patents or those of collaborators may be subject to challenge and subsequent invalidation or significant narrowing of claim scope in a re-examination proceeding, or during litigation, under the revised criteria. OncoGenex cannot guarantee that:

- OncoGenex or its licensors were the first to make the inventions covered by each of its issued patents and pending patent applications;
- OncoGenex or its licensors were the first to file patent applications for these inventions;
- others will not independently develop similar or alternative technologies or duplicate any of its technologies;
- any of OncoGenex or its licensors' pending patent applications will result in issued patents;
- any of OncoGenex or its licensors' patents will be valid or enforceable;

- any patents issued to OncoGenex or its licensors and collaboration partners will provide OncoGenex with any competitive advantages, or will not be challenged by third parties; and
- OncoGenex will develop additional proprietary technologies that are patentable, or the patents of others will not have an adverse effect on its business.

The actual protection afforded by a patent varies on a product-by-product basis, from country to country and depends on many factors, including the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patents. OncoGenex's ability or the ability of a collaboration partner, if any, to maintain and solidify its proprietary position for apatorsen will depend on its success in obtaining effective claims and enforcing those claims once granted. OncoGenex's issued patents and those that may issue in the future, or those licensed to it or collaboration partners, if any, may be challenged, invalidated, unenforceable or circumvented, and the rights granted under any issued patents may not provide it with proprietary protection or competitive advantages against competitors with similar products. Due to the extensive amount of time required for the development, testing and regulatory review of a potential product, it is possible that, before apatorsen can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent.

OncoGenex also relies on trade secrets to protect some of its technology, especially where it is believed that patent protection is not appropriate or obtainable. However, trade secrets are difficult to maintain. While it uses reasonable efforts to protect its trade secrets, OncoGenex or its collaboration partners' employees, consultants, contractors or scientific and other advisors may unintentionally or willfully disclose its proprietary information to competitors. Enforcement of claims that a third party has illegally obtained and is using trade secrets is expensive, time consuming and uncertain. In addition, non-U.S. courts are sometimes less willing than U.S. courts to protect trade secrets. If its competitors independently develop equivalent knowledge, methods and know-how, OncoGenex would not be able to assert its trade secrets against them and its business could be harmed.

OncoGenex may not be able to protect its intellectual property rights throughout the world.

Filing, prosecuting and defending patents on apatorsen, when and if OncoGenex has any, in every jurisdiction would be prohibitively expensive. Competitors may use its technologies in jurisdictions where OncoGenex or its licensors have not obtained patent protection to develop their own products. These products may compete with its products, when and if OncoGenex has any, and may not be covered by any of OncoGenex or its licensors' patent claims or other intellectual property rights.

The laws of some non-U.S. countries do not protect intellectual property rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology and/or pharmaceuticals, which could make it difficult for OncoGenex to stop the infringement of its patents. Proceedings to enforce its patent rights in foreign jurisdictions could result in substantial cost and divert OncoGenex's efforts and attention from other aspects of its business.

OncoGenex may become involved in disputes with past or potential future collaborators over intellectual property ownership, and publications by its research collaborators and scientific advisors could impair its ability to obtain patent protection or protect its proprietary information, which, in either case, could have a significant effect on its business.

Inventions discovered under research, material transfer or other such collaborative agreements may become jointly owned by OncoGenex and the other party to such agreements in some cases and the exclusive property of

either party in other cases. Under some circumstances, it may be difficult to determine who owns a particular invention, or whether it is jointly owned, and disputes could arise regarding ownership of those inventions. These disputes could be costly and time consuming and an unfavorable outcome could have a significant adverse effect on its business if OncoGenex was not able to protect or license rights to these inventions. In addition, OncoGenex's research collaborators and scientific advisors generally have contractual rights to publish its data and other proprietary information, subject to its prior review. Publications by its research collaborators and scientific advisors containing such information, either with its permission or in contravention of the terms of their agreements with OncoGenex, may impair its ability to obtain patent protection or protect its proprietary information, which could significantly harm its business.

The intellectual property protection for apatorsen depends on third parties.

OncoGenex has exclusively licensed from UBC certain issued patents and pending patent applications covering the respective antisense sequences underlying apatorsen and its commercialization and use, and it has licensed from Ionis certain issued patents and pending patent applications directed to product compositions and chemical modifications used in apatorsen for commercialization, use and the manufacturing thereof. OncoGenex has also received a sublicense from Ionis under certain third-party patent portfolios directed to such modifications.

The patents and pending patent applications underlying OncoGenex's licenses do not fully cover all potential modifications and uses of apatorsen. In the case of patents and patent applications licensed from Ionis, OncoGenex does not have and has not had any control over the filing, prosecution or enforcement of these patents or patent applications. It cannot be certain that such prosecution efforts have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents. OncoGenex also cannot be assured that its licensors or their respective licensing partners will agree to enforce any such patent rights at its request or devote sufficient efforts to attain a desirable result. Any failure by its licensors or any of their respective licensing partners to properly protect the intellectual property rights relating to apatorsen could have a material adverse effect on OncoGenex's financial condition and results of operation.

If OncoGenex breaches any of the agreements under which it licenses rights to apatorsen or technology from third parties, it could lose license rights that are important to its business. Certain of OncoGenex's license agreements may not provide an adequate remedy for a breach by the licensor.

OncoGenex licenses the development and commercialization rights for apatorsen. Under such licenses, it is subject to various obligations such as sublicensing, royalty and milestone payments, annual maintenance fees, limits on sublicensing, insurance obligations and the obligation to use commercially reasonable best efforts to develop and exploit the licensed technology. If OncoGenex fails to comply with any of these obligations or otherwise breach these agreements, its licensors may have the right to terminate the license in whole or in part or to terminate the exclusive nature of the license. OncoGenex may also become involved in disputes with current or former licensors regarding the meaning of certain terms in the license agreements, including terms related to royalty and milestone payments and termination, which may result in costly and time consuming litigation. Loss of any of these licenses or the exclusivity rights provided by the licenses, or disputes with current or former licensors, could harm OncoGenex's financial condition and results of operations. In addition, certain of its license agreements with UBC eliminate OncoGenex's ability to obtain money damages in respect of certain claims against UBC.

The patent protection for apatorsen may expire before OncoGenex is able to maximize its commercial value, which may subject it to increased competition and reduce or eliminate its opportunity to generate product revenue.

The patents for apatorsen have varying expiration dates and, when these patents expire, OncoGenex may be subject to increased competition and it may not be able to recover its development costs. For example, certain of the U.S. patents directed to apatorsen and its use that have been licensed from UBC are expected to expire in

2023. In some of the larger economic territories, such as the United States and Europe, patent term extension/restoration may be available to compensate for time taken during aspects of the product candidate's regulatory review. OncoGenex cannot, however, be certain that an extension will be granted or, if granted, what the applicable time period or the scope of patent protection afforded during any extended period will be. In addition, even though some regulatory agencies may provide some other exclusivity for a product candidate under its own laws and regulations, OncoGenex may not be able to qualify the product candidate or obtain the exclusive time period.

If it is unable to obtain patent term extension/restoration or some other exclusivity, OncoGenex could be subject to increased competition and its opportunity to establish or maintain product revenue could be substantially reduced or eliminated. Furthermore, it may not have sufficient time to recover its development costs prior to the expiration of its U.S. and non-U.S. patents.

OncoGenex may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights and it may be unable to protect its rights to, or use of, its technology.

If OncoGenex chooses to go to court to stop someone else from using the inventions claimed in its patents or its licensed patents, that individual or company has the right to ask the court to rule that these patents are invalid and/or should not be enforced against that third party. These lawsuits are expensive and would consume time and other resources even if OncoGenex was successful in stopping the infringement of these patents. In addition, there is a risk that the court will decide that these patents are invalid or unenforceable and that OncoGenex does not have the right to stop the other party from using the inventions. The U.S. Supreme Court has revised certain tests regarding granting patents and assessing the validity of patents to make it more difficult to obtain patents. Some of its issued patents may be subject to challenge and subsequent invalidation under the revised criteria. There is also the risk that, even if the validity or enforceability of these patents is upheld, the court will narrow the scope of OncoGenex's claim or will refuse to stop the other party on the grounds that such other party's activities do not infringe its rights.

If OncoGenex wishes to use the technology or compound claimed in issued and unexpired patents owned by others, it will need to obtain a license from the owner, enter into litigation to challenge the validity or enforceability of the patents or incur the risk of litigation in the event that the owner asserts that OncoGenex infringed its patents. The failure to obtain a license to technology or the failure to challenge an issued patent that OncoGenex may require to discover, develop or commercialize apatorsen may have a material adverse effect on it.

If a third party asserts that OncoGenex infringed its patents or other proprietary rights, OncoGenex could face a number of risks that could seriously harm its results of operations, financial condition and competitive position, including:

- patent infringement and other intellectual property claims, which would be costly and time consuming to defend, whether or not the claims have merit, and which could delay the regulatory approval process and divert management's attention from its business;
- substantial damages for past infringement, which OncoGenex may have to pay if a court determines that apatorsen or its technologies infringe a competitor's patent or other proprietary rights;
- a court prohibiting OncoGenex from selling or licensing its technologies or future drugs unless the third party licenses its patents or other proprietary rights to OncoGenex on commercially reasonable terms, which it is not required to do; and
- if a license is available from a third party, OncoGenex may have to pay substantial royalties or lump-sum payments or grant cross licenses to its patents or other proprietary rights to obtain that license.

The biotechnology industry has produced a proliferation of patents, and it is not always clear to industry participants, including OncoGenex, which patents cover various types of products or methods of use. The

coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If it is sued for patent infringement, OncoGenex would need to demonstrate that apatorsen or methods of use either do not infringe the patent claims of the relevant patent, and/or that the patent claims are invalid, and/or that the patent is unenforceable and it may not be able to do this. Proving invalidity, in particular, is difficult since it requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents.

U.S. patent laws as well as the laws of some foreign jurisdictions provide for provisional rights in published patent applications beginning on the date of publication, including the right to obtain reasonable royalties, if a patent subsequently issues and certain other conditions are met.

Because some patent applications in the United States may be maintained in secrecy until the patents are issued, because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing and because publications in the scientific literature often lag behind actual discoveries, OncoGenex cannot be certain that others have not filed patent applications for technology covered by its licensors' issued patents or its pending applications or its licensors' pending applications, or that OncoGenex or its licensors were the first to invent the technology.

Patent applications filed by third parties that cover technology similar to OncoGenex's technology may have priority over its or its licensors' patent applications and could further require OncoGenex to obtain rights to issued patents covering such technologies. If another party files a U.S. patent application on an invention similar to OncoGenex's, OncoGenex may elect to participate in or be drawn into an interference proceeding declared by the U.S. Patent and Trademark Office to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful, resulting in a loss of its U.S. patent position with respect to such inventions. Some of its competitors may be able to sustain the costs of complex patent litigation more effectively than OncoGenex can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on its ability to raise the funds necessary to continue its operations. OncoGenex cannot predict whether third parties will assert these claims against it or against the licensors of technology licensed to OncoGenex, or whether those claims will harm its business. If OncoGenex is forced to defend against these claims, whether they are with or without any merit and whether they are resolved in favor of or against it or its licensors, OncoGenex may face costly litigation and diversion of management's attention and resources. As a result of these disputes, it may have to develop costly non-infringing technology, or enter into licensing agreements. These agreements, if necessary, may be unavailable on terms acceptable to OncoGenex, if at all, which could seriously harm its business or financial condition.

OncoGenex may be subject to damages resulting from claims that it, or its employees or consultants, have wrongfully used or disclosed alleged trade secrets of third parties.

Many of OncoGenex's employees were previously employed, and certain of its consultants are currently employed, at universities or biotechnology or pharmaceutical companies, including its competitors or potential competitors. Although it has not received any claim to date, OncoGenex may be subject to claims that these employees or consultants or it has inadvertently or otherwise used or disclosed trade secrets or other proprietary information of these current or former employers. Litigation may be necessary to defend against these claims. If it fails in defending such claims, in addition to paying monetary damages, OncoGenex may lose valuable intellectual property rights or personnel. It may be subject to claims that employees of its partners or licensors of technology licensed by OncoGenex have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. It may become involved in litigation to defend against these claims. If it fails in defending such claims, in addition to paying monetary damages, OncoGenex may lose valuable intellectual property rights or personnel.

Risks Related to OncoGenex Common Stock

The price for OncoGenex common stock is volatile.

The market prices for OncoGenex common stock and that of emerging life science companies generally have historically been highly volatile. For example, after the announcement of data from recent custirsen and apatorsen clinical trials, OncoGenex experienced significant decreases in its stock price. Future announcements concerning OncoGenex, its pending merger, the results of its clinical trials or its competitors may also have a significant effect on the market price of its common stock. The stock markets also experience significant price and volume fluctuation unrelated to the operating performance of particular companies. These market fluctuations may also adversely affect the market price of OncoGenex common stock.

An increase in the market price of OncoGenex common stock, which is uncertain and unpredictable, may be the sole source of gain from an investment in its common stock. An investment in its common stock may not be appropriate for investors who require dividend income. OncoGenex has never declared or paid cash dividends on its capital stock and does not anticipate paying any cash dividends on its capital stock in the foreseeable future. OncoGenex currently intends to retain all available funds and any future earnings to fund the development and growth of its business. As a result, capital appreciation, if any, of OncoGenex common stock will be the sole source of gain for stockholders for the foreseeable future. Accordingly, an investment in its common stock may not be appropriate for investors who require dividend income or investors who are not prepared to bear a significant risk of losses from such an investment.

The price of OncoGenex common stock does not meet the requirements for continued listing on The NASDAQ Capital Market. If it fails to regain compliance with the minimum listing requirements, OncoGenex common stock will be subject to delisting. OncoGenex's ability to complete the pending merger or publicly or privately sell equity securities and the liquidity of its common stock could be adversely affected if its common stock is delisted.

The continued listing standards of The NASDAQ Capital Market require, among other things, that the minimum bid price of a listed company's stock be at or above $1.00. If the minimum bid price is below $1.00 for a period of more than 30 consecutive trading days, the listed company will fail to be in compliance with The NASDAQ Capital Market's listing rules and, if it does not regain compliance within the grace period, will be subject to delisting. As previously reported, on August 22, 2016, OncoGenex received a notice from the NASDAQ Listing Qualifications Department notifying it that for 30 consecutive trading days, the bid price of OncoGenex common stock had closed below the minimum $1.00 per share requirement. In accordance with The NASDAQ Capital Market's listing rules, OncoGenex was afforded 180 calendar days, or until February 21, 2017, to regain compliance with the bid price requirement. In order to regain compliance, the bid price of its common stock must close at a price of at least $1.00 per share for a minimum of 10 consecutive trading days. On February 22, 2017, OncoGenex received a second notice from the NASDAQ Listing Qualifications Department notifying it that it had not regained compliance with the bid price requirement during the 180 calendar days, and that it may be eligible for an additional 180-day compliance period if OncoGenex meets the market value of publicly held shares requirement for continued listing, all other initial inclusion requirements for The NASDAQ Capital Market, except for the bid price requirement, and provide written notice that it intends to regain compliance with the bid price requirement during the second 180-day compliance period, by effecting a reverse stock split if necessary. OncoGenex believes it is eligible for the additional 180-day compliance period, and intends to meet the bid price requirement by effecting a reverse stock split upon the completion of its pending merger.

If OncoGenex fails to regain compliance, its common stock will be subject to delisting. Delisting from The NASDAQ Capital Market could adversely affect its ability to raise additional financing through the public or private sale of equity securities, would significantly affect the ability of investors to trade its securities and would negatively affect the value and liquidity of OncoGenex common stock. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities. Delisting would also prevent OncoGenex from satisfying a closing

condition for the pending merger, and, in such event, Achieve may elect not to consummate the merger. In addition, the combined company must submit a new application for listing on The NASDAQ Capital Market after the merger pursuant to the reverse merger rules, and the combined company will need to meet NASDAQ's minimum listing requirements.

OncoGenex is at risk of securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities, including in circumstances where such declines occur in close proximity to the announcement of clinical trial results, as well as following certain significant business transactions, such as the announcement of a merger. This risk is especially relevant for OncoGenex because it recently announced a pending merger with Achieve. Additionally, its stock price and those of other biotechnology and biopharmaceutical companies have experienced significant stock price volatility in recent years. If OncoGenex faces such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm its business. Any stockholder litigation challenging the pending merger may also delay completion of the merger in the expected timeframe or altogether.

If OncoGenex raises additional capital, the terms of the financing transactions may cause dilution to existing stockholders or contain terms that are not favorable to it.

To date, OncoGenex's sources of cash have been limited primarily to proceeds from the private or public placement of its securities and reimbursement for custirsen-related development expenses from its prior strategic collaboration with Teva, which terminated in April 2015. In the future, OncoGenex may seek to raise additional financing through private placements or public offerings of its equity or debt securities. It cannot be certain that additional funding will be available on acceptable terms, if at all. To the extent that OncoGenex raises additional financing by issuing equity securities, it may do so at a price per share that represents a discount to the then-current per share trading price of its common stock and its stockholders may experience significant dilution. Any debt financing, if available, may involve restrictive covenants, such as limitations on OncoGenex's ability to incur additional indebtedness, limitations on its ability to acquire or license intellectual property rights and other operating restrictions that could adversely affect its ability to conduct its business.

Risks Related to OncoGenex's Industry

There is a high risk that OncoGenex's drug development activities will not result in commercial products.

OncoGenex or a collaborator, if any, will need to complete significant additional clinical trials before it or they can demonstrate that apatorsen is safe and effective to the satisfaction of regulatory agencies. Clinical trials are expensive and uncertain processes that take years to complete. Failure can occur at any stage of the process, and successful early clinical trials do not ensure that later clinical trials will be successful. In later-stage clinical trials, apatorsen may fail to show desired efficacy and safety traits despite having progressed through initial clinical trials. For example, all of OncoGenex's phase 3 clinical trials for custirsen and all but one of its phase 2 trials for apatorsen failed to meet their clinical endpoints, even after positive results in earlier trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier clinical trials. In addition, a clinical trial may prove successful with respect to a secondary objective, but fail to demonstrate clinically significant benefits with respect to a primary objective. Failure to satisfy a primary objective in a phase 3 clinical trial (registration trial) would generally mean that a product candidate would not receive regulatory approval.

The regulatory approval process is expensive, time consuming and uncertain and may prevent OncoGenex from obtaining approvals for the commercialization of some or all of its product candidates.

The research, testing, manufacturing, labeling, approval, selling, marketing and distribution of drug products are subject to extensive regulation by regulatory agencies, which regulations differ from country to country.

OncoGenex is not permitted to market its product candidate in the United States until it receives approval of an application for market approval from regulatory agencies. OncoGenex has not submitted an application for or received marketing approval for its apatorsen. Obtaining approval of an application for market approval can be a lengthy, expensive and uncertain process. In addition, failure to comply with regulatory agencies' requirements may, either before or after product approval, if any, subject OncoGenex to administrative or judicially imposed sanctions, including:

- restrictions on the products, manufacturers or manufacturing process;
- warning letters;
- civil and criminal penalties;
- injunctions;
- suspension or withdrawal of regulatory approvals;
- product seizures, detentions or import bans;
- voluntary or mandatory product recalls and publicity requirements;
- total or partial suspension of production;
- imposition of restrictions on operations, including costly new manufacturing requirements; and
- refusal to approve pending applications for market approval or supplements to approved applications for market approval.

Regulatory approval of an application for market approval or application for market approval supplement is not guaranteed, and the approval process is expensive and may take several years. Regulatory agencies also have substantial discretion in the drug approval process. Despite the time and expense exerted, failure can occur at any stage, and OncoGenex or a collaborator, if any, could encounter problems that could cause it or them to abandon clinical trials or to repeat or perform additional preclinical studies and clinical trials. The number of preclinical studies and clinical trials that will be required for regulatory agencies' approval varies depending on the drug candidate, the disease or condition that the drug candidate is designed to address, and the regulations applicable to any particular drug candidate. Regulatory agencies can delay, limit or deny approval of a drug candidate for many reasons, including:

- a drug candidate may not be deemed safe or effective;
- regulatory agencies may not find the data from preclinical studies and/or clinical trials sufficient;
- regulatory agencies might not approve its third-party manufacturer's processes or facilities;
- regulatory agencies may change its approval policies or adopt new regulations; and
- third-party products may enter the market and change approval requirements.

Even if OncoGenex or a collaborator, if any, obtains regulatory approvals for apatorsen, the terms of approvals and ongoing regulation of apatorsen may limit how it or a collaborator, if any, manufactures and markets apatorsen, which could materially affect its ability to generate revenue.

If apatorsen is approved, it and its manufacturer will be subject to continual review. Any regulatory approval that OncoGenex or a collaborator, if any, receives for apatorsen is likely to be subject to limitations on the indicated uses for which the end product may be marketed, or include requirements for potentially costly post-approval follow-up clinical trials. In addition, if regulatory agencies approve apatorsen, the labeling, packaging, adverse event reporting, storage, advertising and promotion for the end product will be subject to extensive regulatory requirements. The manufacturers of apatorsen, when and if it has any, will also be required to comply with cGMP regulations, which include requirements relating to quality control and quality assurance, as well as the

corresponding maintenance of records and documentation. Further, regulatory agencies must approve these manufacturing facilities before they can be used to manufacture OncoGenex's product, when and if apatorsen has any, and these facilities are subject to ongoing regulatory inspection. If the manufacturer fails to comply with the regulatory requirements of regulatory agencies, or if previously unknown problems with apatorsen are discovered, OncoGenex could be subject to administrative or judicially imposed sanctions, including:

- restrictions on the product, manufacturers or manufacturing process;
- warning letters;
- civil or criminal penalties or fines;
- injunctions;
- product seizures, detentions or import bans;
- voluntary or mandatory product recalls and publicity requirements;
- suspension or withdrawal of regulatory approvals;
- total or partial suspension of production;
- imposition of restrictions on operations, including costly new manufacturing requirements; and
- refusal to approve pending applications for market approval or supplements to approved applications for market approval.

In addition, regulatory agencies may change their policies and additional regulations may be enacted that could prevent or delay regulatory approval of apatorsen. OncoGenex cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States, Canada or abroad. If it is not able to maintain regulatory compliance, OncoGenex would likely not be permitted to market apatorsen and it may not achieve or sustain profitability.

If government and third-party payors fail to provide coverage and adequate reimbursement rates for apatorsen, OncoGenex's revenue and potential for profitability will be reduced.

In the United States and elsewhere, OncoGenex's product revenue will depend principally on the reimbursement rates established by third-party payors, including government health administration authorities, managed-care providers, public health insurers, private health insurers and other organizations. These third-party payors are increasingly challenging the price, and examining the cost-effectiveness, of medical products and services. In addition, significant uncertainty exists as to the reimbursement status, if any, of newly approved drugs, pharmaceutical products or product indications. OncoGenex or a collaborator, if any, may need to conduct post-marketing clinical trials in order to demonstrate the cost-effectiveness of apatorsen, if any. Such clinical trials may require it or a collaborator, if any, to commit a significant amount of management time and financial and other resources. If reimbursement of such product is unavailable or limited in scope or amount or if pricing is set at unsatisfactory levels, its revenue could be reduced.

In some countries other than the United States, particularly the countries of the European Union and Canada, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, obtaining pricing approval from governmental authorities can take six to 12 months or longer after the receipt of regulatory marketing approval of a product for an indication. To obtain reimbursement or pricing approval in some countries, OncoGenex or a collaborator, if any, may be required to conduct a clinical trial that compares the cost-effectiveness of apatorsen to other available therapies. If reimbursement of such product candidate is unavailable or limited in scope or amount or if pricing is set at unsatisfactory levels, its revenue could be reduced.

Domestic and foreign governments continue to propose and pass legislation designed to reduce the cost of healthcare, including drugs. In the United States, there have been, and OncoGenex expects that there will

continue to be, federal and state proposals to implement similar governmental control. In addition, increasing emphasis on managed care in the United States will continue to put pressure on the pricing of pharmaceutical products. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively, PPACA, became law in the United States. PPACA substantially changes the way healthcare is financed by both governmental and private insurers and significantly affects the pharmaceutical industry.

OncoGenex anticipates that the PPACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and downward pressure on the price for any approved product, and could seriously harm its prospects. In addition, the Medicare and Medicaid program and state healthcare laws and regulations may also be modified to change the scope of covered products and/or reimbursement methodology. Cost control initiatives could decrease the established reimbursement rates that OncoGenex receives for apatorsen in the future, which would limit its revenue and profitability. Legislation and regulations affecting the pricing of pharmaceutical products, including apatorsen, may change at any time, which could further limit or eliminate reimbursement rates for apatorsen or other product candidates.

Failure to obtain regulatory approval outside of the United States and Canada would prevent OncoGenex from marketing its product candidates abroad.

OncoGenex or a collaborator may market apatorsen outside of the United States and Canada. In order to market apatorsen in the European Union and many other non-North American markets, it or a collaborator, if any, must obtain separate regulatory approvals. OncoGenex has had limited interactions with non-North American regulatory authorities. Approval procedures vary among countries and can involve additional testing, and the time required to obtain approval may differ from that required to obtain FDA approval. Approval by the FDA or other regulatory authorities does not ensure approval by regulatory authorities in other countries, and approval by one or more non-North American regulatory authorities does not ensure approval by regulatory authorities in other countries or by the FDA. The non-North American regulatory approval process may include all of the risks associated with obtaining FDA approval. OncoGenex or a collaborator, if any, may not obtain non-North American regulatory approvals on a timely basis, if at all. It or a collaborator, if any, may not be able to file for non-North American regulatory approvals and may not receive necessary approvals to commercialize apatorsen in any market.

Risks Related to Achieve

Risks Related to Achieve's Financial Condition and Capital Requirements

Achieve has incurred losses since its inception, has a limited operating history on which to assess its business, and anticipates that it will continue to incur significant losses for the foreseeable future.

Achieve is a clinical development-stage specialty pharmaceutical company with a limited operating history. Achieve has incurred net losses in each year since its inception. The audit report on the consolidated financial statements as of December 31, 2016 and 2015 and for the year ended December 31, 2016 and period ended December 31, 2015, which appears elsewhere herein, includes an explanatory paragraph related to Achieve's ability to continue as a going concern. As of December 31, 2016, Achieve had a cash balance of $15,000, an accumulated deficit of $1.8 million and a negative working capital balance of $3.1 million. One of the closing conditions of the merger with OncoGenex requires Achieve's liabilities, other than expenses incurred in connection with the merger, not to exceed $1.2 million. Achieve's management believes that Achieve may be able to convert some of the liabilities into equity prior to the consummation of the merger.

The ability of Achieve to continue as a going concern is uncertain and dependent on Achieve's ability to consummate the merger and/or obtain additional financing. To date, Achieve has financed its operations through stockholder loans and debt financing. Achieve's management believes that if the merger does not occur, existing Achieve shareholders have sufficient capital available to contribute to operate Achieve through December 31,

2017, and intends to raise additional financing from alternative sources. However, Achieve will continue to require substantial additional capital to continue its clinical development and potential commercialization activities. Accordingly, Achieve will need to raise substantial additional capital to continue to fund its operations. The amount and timing of its future funding requirements will depend on many factors, including the pace and results of its clinical development efforts. Failure to raise capital as and when needed, on favorable terms or at all, would have a negative impact on its financial condition and its ability to develop cytisine.

Pharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. Achieve has devoted substantially all of its financial resources to identify, acquire, and develop cytisine, including providing general and administrative support for its operations. To date, Achieve has financed its operations primarily through the sale of equity securities and convertible promissory notes. The amount of its future net losses will depend, in part, on the rate of its future expenditures and its ability to obtain funding through equity or debt financings, strategic collaborations, or grants.

Achieve expects to continue to incur significant expenses and increasing operating losses for the foreseeable future. Achieve further expects that its expenses will increase substantially if and as Achieve:

- continues the clinical development of cytisine;
- advances cytisine development into larger, more expensive clinical trials;
- initiates additional pre-clinical, clinical, or other trials or studies for cytisine;
- seeks to attract and retain skilled personnel;
- undertakes the manufacturing of cytisine or increases volumes manufactured by third parties;
- seeks regulatory and marketing approvals and reimbursement for cytisine;
- makes milestone, royalty or other payments under third-party license and/or supply agreements;
- establishes a sales, marketing, and distribution infrastructure to commercialize any product for which Achieve may obtain marketing approval and market for itself;
- continues efforts to discover new product candidates;
- seeks to identify, assess, acquire, and/or develop other product candidates;
- seeks to establish, maintain, protect, and expand its intellectual property portfolio; and
- experiences any delays or encounters issues with the development and potential for regulatory approval of cytisine such as safety issues, clinical trial accrual delays, longer follow-up for planned studies, additional major studies, or supportive studies necessary to support marketing approval.

Further, the net losses Achieve incurs may fluctuate significantly from quarter to quarter and year to year, such that a period-to-period comparison of its results of operations may not be a good indication of its future performance.

Achieve has never generated any revenue from product sales and may never be profitable.

Achieve has no products approved for commercialization and has never generated any revenue from product sales. Achieve's ability to generate revenue and achieve profitability depends on its ability, alone or with strategic collaborators, to successfully complete the development of, and obtain the regulatory and marketing approvals necessary to commercialize cytisine. Achieve does not anticipate generating revenue from product sales for the foreseeable future. Achieve's ability to generate future revenue from product sales depends heavily on its success in many areas, including but not limited to:

- completing research and development of cytisine;

- obtaining regulatory and marketing approvals for cytisine;
- manufacturing product and establishing and maintaining supply and manufacturing relationships with third parties that are commercially feasible, satisfy regulatory requirements and meet Achieve's supply needs in sufficient quantities to satisfy market demand for cytisine, if approved;
- marketing, launching and commercializing any product for which Achieve obtains regulatory and marketing approval, either directly or with a collaborator or distributor;
- obtaining reimbursement or pricing for cytisine that supports profitability;
- gaining market acceptance of cytisine as a treatment option;
- addressing any competing products including the potential for generic cytisine products;
- protecting and enforcing its intellectual property rights, if any, including patents, trade secrets, and know-how;
- negotiating favorable terms in any collaboration, licensing, or other arrangements into which Achieve may enter; and
- attracting, hiring, and retaining qualified personnel.

Even if a product candidate that Achieve develops is approved for commercial sale, Achieve anticipates incurring significant costs associated with commercializing that candidate. Additionally, if Achieve is not able to generate sufficient revenue from the sale of any approved products to cover its operating costs, Achieve may never become profitable. If Achieve obtains regulatory approval to market a product candidate, its future revenue will depend upon the size of any markets in which its product candidates may receive approval, and its ability to achieve sufficient market acceptance, pricing, reimbursement from third-party payors, and adequate market share for its product candidates in those markets.

Cytisine is currently Achieve's sole product candidate and there is no guarantee that Achieve will be able to successfully develop and commercialize cytisine.

Achieve is currently dependent on the potential development of a single product candidate, cytisine. Achieve is still developing its sole product candidate, and cytisine cannot be marketed or sold in the United States or in foreign markets until regulatory approval has been obtained from the U.S. Food and Drug Administration, or the FDA, or applicable foreign regulatory agencies. Achieve has not yet submitted an Investigational New Drug, or IND, application or a New Drug Application, or NDA, for cytisine, and the process of obtaining regulatory approval is expensive and time consuming. The FDA and foreign regulatory authorities may never approve cytisine for sale and marketing, and even if cytisine is ultimately approved, regulatory approval may be delayed or limited in the United States or in other jurisdictions. Even if Achieve is authorized to sell and market cytisine in one or more markets, there is no assurance that Achieve will be able to successfully market cytisine or that cytisine will achieve market acceptance sufficient to generate profits. Failure to develop cytisine, to obtain regulatory approval for cytisine, to successfully market cytisine, or to generate profits from the sale of cytisine would have material adverse effects on Achieve's business, financial condition, and results of operations.

Achieve is dependent upon a single company for the manufacture and supply of cytisine.

Achieve's single product candidate, cytisine, has been in-licensed from a third party. Achieve is required to continue to contract with Sopharma AD, or Sopharma, to continue Achieve's development and commercialization, if any, of cytisine pursuant to a supply agreement with Sopharma. If the supply agreement with Sopharma is terminated, Achieve will need to develop or acquire alternative supply and manufacturing capabilities for cytisine, which it may not be able to do on commercially viable terms or at all.

If Achieve is unable to successfully commercialize cytisine due to failure to obtain regulatory approval or due to other risk factors outlined herein, Achieve's business, financial condition, and results of operations will be materially harmed as cytisine is currently Achieve's sole product candidate.

Raising additional capital may cause dilution to Achieve's stockholders, restrict its operations or require Achieve to relinquish rights.

To the extent that Achieve raises additional capital through the sale of equity, convertible debt or other securities convertible into equity, the ownership interest of Achieve's stockholders will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect rights of Achieve's stockholders. Debt financing, if available at all, would likely involve agreements that include covenants limiting or restricting Achieve's ability to take specific actions, such as incurring additional debt, making capital expenditures, making additional product acquisitions, or declaring dividends. If Achieve is unable to obtain funding on a timely basis, or on terms acceptable to Achieve, or at all, Achieve may be required to delay or discontinue one or more of its development programs or the commercialization of its product candidate or be unable to expand its operations or otherwise capitalize on potential business opportunities, which could materially harm Achieve's business, financial condition, and results of operations.

Achieve's principal stockholders own a significant percentage of its stock and will be able to exert significant control over matters of the combined company subject to stockholder approval.

Achieve's principal stockholders and their affiliates currently beneficially own approximately 85.9% of Achieve's outstanding voting stock. Therefore, these stockholders have the ability, and may continue to have the ability, to influence Achieve through this ownership position. These stockholders are able to determine some or all matters involving Achieve that require stockholder approval. For example, these stockholders, acting together, are able to control elections of directors, amendments of organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This control may prevent or discourage unsolicited acquisition proposals or offers for Achieve's common stock.

Achieve may not have sufficient resources to meet the financial reporting requirements of public companies.

Achieve has to date operated as a private company and as a private company, has not been required to comply with the regulations or incur the costs associated with being a public company, including in particular the financial reporting requirements of a public company. While Achieve intends to use the resources of OncoGenex's already existing team with respect to public company financial reporting requirements, Achieve's reporting systems will have to satisfy public company requirements. Complying with these requirements may require increased management time and attention, and potentially require the retention of additional employees, contractors, or third party professionals such as attorneys and accountants, to support the combined company in its financial reporting obligations. If these requirements are not met, or compliance with them diverts management's attention from other business concerns, they could have a material adverse effect on the combined company's business, prospects, financial condition and operating results.

Risks Related to the Development of Achieve's Product Candidates

Results of earlier clinical trials of cytisine are not necessarily predictive of future results, and any advances of cytisine into clinical trials may not have favorable results or receive regulatory approval.

Even if Achieve's clinical trials are completed as planned, Achieve cannot be certain that their results will be consistent with the results of the earlier clinical trials of cytisine. Positive results in pre-clinical testing and past clinical trials with respect to the safety and efficacy of cytisine do not ensure that results from subsequent clinical trials will also be positive, and Achieve cannot be sure that the results of subsequent clinical trials will replicate the results of prior clinical trials and pre-clinical testing. This failure may cause Achieve to abandon cytisine, which would negatively affect Achieve's ability to generate any product revenues.

Clinical trials are costly, time consuming and inherently risky, and Achieve may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

Clinical development is expensive, time consuming and involves significant risk. Achieve cannot guarantee that any clinical trial will be conducted as planned or completed on schedule, if at all. A failure of one or more

clinical trials can occur at any stage of development. Events that may prevent successful or timely completion of clinical development include, but are not limited to:

- inability to generate satisfactory pre-clinical, toxicology, or other in vivo or in vitro data or diagnostics to support the initiation or continuation of clinical trials;
- delays in reaching agreement on acceptable terms with clinical research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delays in obtaining required institutional review board, or IRB, approval at each clinical trial site;
- failure to permit the conduct of a clinical trial by regulatory authorities, after review of an investigational new drug or equivalent foreign application or amendment;
- delays in recruiting qualified patients in its clinical trials;
- failure by clinical sites or CROs or other third parties to adhere to clinical trial requirements;
- failure by clinical sites, CROs or other third parties to perform in accordance with the good clinical practices requirements of the FDA or applicable foreign regulatory guidelines;
- patients terminating enrollment in Achieve's clinical trials;
- adverse events or tolerability issues significant enough for the FDA or other regulatory agencies to put any or all clinical trials on hold;
- animal toxicology issues significant enough for the FDA or other regulatory agencies to disallow investigation in humans;
- occurrence of adverse events associated with Achieve's product candidate;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- the cost of clinical trials of cytisine;
- negative or inconclusive results from Achieve's clinical trials which may result in Achieve's deciding, or regulators requiring Achieve, to conduct additional clinical trials or abandon development programs in other ongoing or planned indications for cytisine; and
- delays in the time for manufacture of sufficient quantities of cytisine for use in clinical trials.

Any inability to successfully complete clinical development and obtain regulatory approval for cytisine could result in additional costs to Achieve or impair its ability to generate revenue. In addition, if Achieve makes manufacturing or formulation changes to cytisine, Achieve may need to conduct additional pre-clinical trials or the results obtained from such new formulation may not be consistent with previous results obtained. Clinical trial delays could also shorten any periods during which its products have patent protection and may allow competitors to develop and bring products to market before Achieve does, which could impair its ability to successfully commercialize cytisine and may harm its business and results of operations.

Cytisine may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial viability of an approved label, or result in significant negative consequences following marketing approval, if any.

Undesirable side effects caused by cytisine could cause Achieve or regulatory authorities to interrupt, delay, or terminate clinical trials or even if approved, result in a restrictive label or delay regulatory approval by the FDA or comparable foreign authorities.

Additionally, even if cytisine receives marketing approval, and Achieve or others later identify undesirable side effects caused by cytisine, potentially significant negative consequences could result, including but not limited to:

- regulatory authorities may withdraw approvals of cytisine;

- regulatory authorities may require additional warnings on the cytisine label;
- Achieve may be required to create a Risk Evaluation and Mitigation Strategy, or REMS, plan, which could include a medication guide outlining the risks of such side effects for distribution to patients, a communication plan for healthcare providers, and/or other elements to assure safe use;
- Achieve could be sued and held liable for harm caused to patients; and
- Achieve's reputation may suffer.

Any of these events could prevent Achieve from achieving or maintaining market acceptance of cytisine, even if approved, and could significantly harm its business, results of operations, and prospects.

Achieve's product development program may not uncover all possible adverse events that patients who take cytisine or its other product candidates may experience. The number of subjects exposed to cytisine or its other product candidates and the average exposure time in the clinical development program may be inadequate to detect rare adverse events, or chance findings, that may only be detected once the product is administered to more patients and for greater periods of time.

Clinical trials by their nature utilize a sample of the potential patient population. However, Achieve cannot be fully assured that rare and severe side effects of cytisine will be uncovered. Such rare and severe side effects may only be uncovered with a significantly larger number of patients exposed to cytisine. If such safety problems occur or are identified after cytisine reaches the market in the United States, or if such safety problems occur or are identified in foreign markets where cytisine is currently marketed, the FDA may require that Achieve amend the labeling of cytisine or recall it, or may even withdraw approval for cytisine.

If the use or misuse of cytisine harms patients, or is perceived to harm patients even when such harm is unrelated to cytisine, Achieve's regulatory approvals, if any, could be revoked or otherwise negatively impacted and Achieve could be subject to costly and damaging product liability claims. If Achieve is unable to obtain adequate insurance or is required to pay for liabilities resulting from a claim excluded from, or beyond the limits of, its insurance coverage, a material liability claim could adversely affect its financial condition.

The use or misuse of cytisine in clinical trials and the sale of cytisine if marketing approval is obtained, exposes Achieve to the risk of potential product liability claims. Product liability claims might be brought against Achieve by consumers, healthcare providers, pharmaceutical companies or others selling or otherwise coming into contact with its product. There is a risk that cytisine may induce adverse events. If Achieve cannot successfully defend against product liability claims, it could incur substantial liability and costs. During the course of treatment, patients may suffer adverse events for reasons that may be related to cytisine. Such events could subject Achieve to costly litigation, require it to pay substantial amounts of money to injured patients, delay, negatively impact or end its opportunity to receive or maintain regulatory approval to market cytisine, if any, or require Achieve to suspend or abandon its commercialization efforts. Even in a circumstance in which an adverse event is unrelated to cytisine, the investigation into the circumstance may be time-consuming or inconclusive. These investigations may delay Achieve's regulatory approval process or impact and limit the type of regulatory approvals cytisine receives or maintains. As a result of these factors, a product liability claim, even if successfully defended, could have a material adverse effect on Achieve's business, financial condition or results of operations.

If Achieve obtains marketing approval for cytisine, it will need to expand its insurance coverage to include the sale of commercial products. There is no way to know if Achieve will be able to continue to obtain product liability coverage and obtain expanded coverage if it requires it, in sufficient amounts to protect it against losses due to liability, on acceptable terms, or at all. Achieve may not have sufficient resources to pay for any liabilities resulting from a claim excluded from, or beyond the limits of, its insurance coverage. Where Achieve has provided indemnities in favor of third parties under its agreements with them, there is also a risk that these third

parties could incur liability and bring a claim under such indemnities. An individual may bring a product liability claim against Achieve alleging that cytisine causes, or is claimed to have caused, an injury or is found to be unsuitable for consumer use. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, and a breach of warranties. Claims could also be asserted under state consumer protection acts. Any product liability claim brought against Achieve, with or without merit, could result in:

- withdrawal of clinical trial volunteers, investigators, patients or trial sites or limitations on approved indications;
- the inability to commercialize, or if commercialized, decreased demand for, cytisine;
- if commercialized, product recalls, withdrawals of labeling, marketing or promotional restrictions or the need for product modification;
- initiation of investigations by regulators;
- loss of revenues;
- substantial costs of litigation, including monetary awards to patients or other claimants;
- liabilities that substantially exceed Achieve's product liability insurance, which Achieve would then be required to pay itself;
- an increase in Achieve's product liability insurance rates or the inability to maintain insurance coverage in the future on acceptable terms, if at all;
- the diversion of management's attention from Achieve's business; and
- damage to Achieve's reputation and the reputation of its products and its technology.

Product liability claims may subject Achieve to the foregoing and other risks, which could have a material adverse effect on its business, financial condition or results of operations.

The development of Achieve's product candidate is dependent upon securing sufficient quantities of cytisine from the Laburnum anagyroides plant, which plant grows in a limited number of locations outside of the United States.

The therapeutic component of Achieve's product candidate, cytisine, is derived from the seeds of the *Laburnum anagyroides* plant, which grows in the mountains of Southern Europe. Achieve currently secures cytisine exclusively from Sopharma, a Bulgarian third-party supplier. Achieve's current supply agreement with Sopharma expires on February 1, 2030, unless extended by mutual agreement of Achieve and Sopharma. There can be no assurances that *Laburnum anagyroides* will continue to grow in sufficient quantities to meet commercial supply requirements or that the countries from which Achieve can secure *Laburnum anagyroides* will continue to allow the exportation of cytisine. Sopharma currently has planted approximately 600,000 laburnum trees, saplings and seedlings in multiple locations in Central and Eastern Bulgaria. Each tree takes approximately four to five years to reach maturity for harvesting and has a productive life expectancy of 20 to 25 years. Although Sopharma has plans to plant significant numbers of additional trees, there is no guarantee that they will do so or that the trees will produce the anticipated yield of cytisine. In the event Achieve is no longer able to obtain cytisine from Sopharma, or in sufficient quantities, Achieve may not be able to produce its proposed products and its business will be adversely affected.

Achieve's business may be negatively affected by weather conditions and the availability of natural resources, as well as by climate change.

In recent years, extreme weather events and changing weather patterns such as storms, flooding, drought, and temperature changes, appear to have become more common. The production of cytisine from the *Laburnum*

anagyroides plant depends on the availability of natural resources, including sufficient rainfall. Achieve's exclusive supplier of cytisine, Sopharma, could be adversely affected if it experiences a shortage of fresh water due to droughts or other weather conditions. As a result of such events, Achieve could experience cytisine shortages from Sopharma, all of which could have a material adverse effect on its business, financial condition and results of operations.

In addition, the manufacturing and other operations of Sopharma are located near earthquake fault lines in Sofia, Bulgaria. In the event of a major earthquake, Achieve could experience business interruptions from the disruption of its cytisine supplies, which could have a material adverse effect on Achieve's business, financial condition and results of operations.

Achieve may conduct clinical trials internationally, which may trigger additional risks.

If Achieve decides to conduct clinical trials in Europe or other countries outside of the United States, Achieve will have additional regulatory requirements that Achieve will have to meet in connection with its manufacturing, distribution, use of data and other matters. The failure of Achieve to meet such regulatory requirements could delay its clinical trials, the approval, if any, of cytisine by the FDA, or the commercialization of cytisine, or result in higher costs or deprive Achieve of potential product revenues.

Achieve may use its financial and human resources to pursue a particular research program or product candidate and fail to capitalize on programs or product candidates that may be more profitable or for which there is a greater likelihood of success.

Because Achieve has limited financial and human resources, it may forego or delay pursuit of opportunities with some programs or product candidates or for other indications that later prove to have greater commercial potential. Achieve's resource allocation decisions may cause it to fail to capitalize on viable commercial products or more profitable market opportunities. Achieve's spending on current and future research and development programs and future product candidates for specific indications may not yield any commercially viable products. Achieve may also enter into additional strategic collaboration agreements to develop and commercialize some of its programs and potential product candidates in indications with potentially large commercial markets. If Achieve does not accurately evaluate the commercial potential or target market for a particular product candidate, it may relinquish valuable rights to that product candidate through strategic collaborations, licensing or other royalty arrangements in cases in which it would have been more advantageous for Achieve to retain sole development and commercialization rights to such product candidate, or Achieve may allocate internal resources to a product candidate in a therapeutic area in which it would have been more advantageous to enter into a partnering arrangement.

Risks Related to Regulatory Approval of Cytisine and Other Legal Compliance Matters

If Achieve does not obtain the necessary regulatory approvals in the United States and/or other countries, Achieve will not be able to sell cytisine.

Achieve will need approval from the FDA, to commercialize cytisine in the United States and approvals from similar regulatory authorities in foreign jurisdictions to commercialize cytisine in those jurisdictions. In order to obtain FDA approval of cytisine, Achieve must submit first an IND application and then an NDA to the FDA, demonstrating that cytisine is safe, pure and potent, and effective for its intended use. This demonstration requires significant research including completion of clinical trials. Satisfaction of the FDA's regulatory requirements typically takes many years, depending upon the type, complexity and novelty of the product candidate and requires substantial resources for research, development and testing. Achieve cannot predict whether its clinical trials will demonstrate the safety and efficacy of cytisine or if the results of any clinical trials will be sufficient to advance to the next phase of development or for approval from the FDA. Achieve also cannot predict whether its research and clinical approaches will result in data that the FDA considers safe and

effective for the proposed indications of cytisine. The FDA has substantial discretion in the product approval process. The approval process may be delayed by changes in government regulation, future legislation or administrative action or changes in FDA policy that occur prior to or during Achieve's regulatory review. While Achieve intends to begin a pivotal Phase 3 trial in the first half of 2018, the FDA may require Achieve to conduct additional Phase 3 trials, including if it deems the earlier trials involving cytisine to be insufficient or not available to support a single additional Phase 3 trial. Even if Achieve complies with all FDA requests, the FDA may ultimately reject one or more of its applications. Achieve may never obtain regulatory approval for cytisine. Failure to obtain approval from the FDA or comparable regulatory authorities in foreign jurisdictions to commercialize cytisine will leave Achieve without saleable products and therefore without any source of revenues. In addition, the FDA may require Achieve to conduct additional clinical testing or to perform post-marketing studies, as a condition to granting marketing approval of a product or permit continued marketing, if previously approved. If conditional marketing approval is obtained, the results generated after approval could result in loss of marketing approval, changes in product labeling, and/or new or increased concerns about the side effects or efficacy of a product. The FDA has significant post-market authority, including the explicit authority to require post-market studies and clinical trials, labeling changes based on new safety information and compliance with FDA-approved risk evaluation and mitigation strategies. The FDA's exercise of its authority has in some cases resulted, and in the future could result, in delays or increased costs during product development, clinical trials and regulatory review, increased costs to comply with additional post-approval regulatory requirements and potential restrictions on sales of approved products. In foreign jurisdictions, the regulatory approval processes generally include the same or similar risks as those associated with the FDA approval procedures described above. Achieve cannot be certain that it will receive the approvals necessary to commercialize cytisine for sale either within or outside the United States.

Even if Achieve obtains regulatory approval for cytisine, Achieve will remain subject to ongoing regulatory requirements in connection with the sale and distribution of cytisine.

Even if cytisine is approved by the FDA or comparable foreign regulatory authorities, Achieve will be subject to ongoing regulatory requirements with respect to manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping, conduct of post-marketing clinical trials, and submission of safety, efficacy and other post-approval information, including both federal and state requirements in the United States and the requirements of comparable foreign regulatory authorities. Compliance with such regulatory requirements will likely be costly and the failure to comply would likely result in penalties, up to and including, the loss of such approvals from the FDA or comparable foreign regulatory authorities.

Manufacturers and manufacturers' facilities are required to continuously comply with FDA and comparable foreign regulatory authority requirements, including ensuring that quality control and manufacturing procedures conform to current Good Manufacturing Practices, or cGMP, regulations and corresponding foreign regulatory manufacturing requirements. As such, Achieve, Sopharma and other contract manufacturers, if any, will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any NDA or marketing authorization application.

Ongoing post-approval monitoring and clinical trial obligations may be costly to Achieve and the failure to meet such obligations may result in the withdrawal of such approvals.

Any regulatory approvals that Achieve receives for cytisine, if any, may be subject to limitations on the approved indicated uses for which cytisine may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of cytisine. Achieve will be required to report adverse reactions and production problems, if any, to the FDA and comparable foreign regulatory authorities. Any new legislation addressing product safety issues could result in delays in product development or commercialization, or increased costs to assure compliance. If its original marketing approval for cytisine was obtained through an accelerated approval pathway, Achieve could be required to conduct a successful post-marketing clinical trial in order to confirm the clinical benefit for

its products. An unsuccessful post-marketing clinical trial or failure to complete such a trial could result in the withdrawal of marketing approval.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, the regulatory agency may impose restrictions on that product or Achieve, including requiring withdrawal of the product from the market. If Achieve fails to comply with applicable regulatory requirements, a regulatory agency or enforcement authority may, among other things:

- issue warning letters;
- impose civil or criminal penalties;
- suspend or withdraw regulatory approval;
- suspend any of Achieve's ongoing clinical trials;
- refuse to approve pending applications or supplements to approved applications submitted by Achieve;
- impose restrictions on Achieve's operations, including closing its contract manufacturers' facilities; or
- require a product recall.

Any government investigation of alleged violations of law would be expected to require Achieve to expend significant time and resources in response and could generate adverse publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect its ability to develop and commercialize its products and the value of Achieve and its operating results would be adversely affected.

Achieve may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, and health information privacy and security laws. If Achieve is unable to comply, or has not fully complied, with such laws, it could face substantial penalties.

If Achieve obtains FDA approval for any of cytisine and begins commercializing it in the United States, Achieve's operations may be subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute, the federal False Claims Act, and physician sunshine laws and regulations. These laws may impact, among other things, its proposed sales, marketing, and education programs. In addition, Achieve may be subject to patient privacy regulation by both the federal government and the states in which Achieve conduct its business. The laws that may affect its ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology and Clinical Health Act, and its implementing regulations, which imposes specified requirements relating to the privacy, security, and transmission of individually identifiable health information;
- HIPAA, as amended by the Health Information Technology and Clinical Health Act, and its implementing regulations, which imposes specified requirements relating to the privacy, security, and transmission of individually identifiable health information;

- the federal physician sunshine requirements under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or the Health Care Reform Law, requires manufacturers of products, devices, biologics, and medical supplies to report annually to the U.S. Department of Health and Human Services information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws that may apply to items or services reimbursed by any third-party payor, including governmental and private payors, to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require product manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures, and state laws governing the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of Achieve's business activities could be subject to challenge under one or more of such laws. In addition, recent health care reform legislation has strengthened these laws. For example, the Health Care Reform Law, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. Moreover, the Health Care Reform Law provides that the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

If Achieve's operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to Achieve, Achieve may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of its operations, any of which could adversely affect its ability to operate Achieve's business and its results of operations.

Healthcare legislative and executive reform measures may have a material adverse effect on Achieve's business, financial condition or results of operations.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Health Care Reform Law was passed, which substantially changes the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Health Care Reform Law, among other things, addresses a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for products that are inhaled, infused, instilled, implanted, or injected, increases the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extends the rebate program to individuals enrolled in Medicaid managed care organizations, establishes annual fees and taxes on manufacturers of specified branded prescription products, and promotes a new Medicare Part D coverage gap discount program.

On January 20, 2017, President Donald Trump issued an Executive Order to initiate the repeal of the Health Care Reform Law and Achieve expects that additional state and federal healthcare measures under the Trump administration will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand or lower pricing for cytisine, or additional pricing pressures. Currently, the Health Care Reform Law provides coverage for smoking cessation-related activities, including two counseling attempts for smoking cessation per year and

prescription drugs for smoking cessation, but not over-the-counter treatments. If these provisions are repealed, in whole or in part, Achieve's business, financial condition, or results of operations could be negatively affected.

The United Kingdom is currently a member state of the European Union. However, the United Kingdom has signaled its intention to withdraw from the European Union (commonly known as BREXIT). If BREXIT, which is likely to occur in 2019, does occur, the United Kingdom will no longer be a member state within the European Union. Since a significant portion of the regulatory framework in the United Kingdom is derived from the regulations of the European Union, BREXIT could materially change the regulatory framework applicable to the approval of cytisine, which could have a material adverse effect on Achieve and its operations. BREXIT may also result in other significant regulatory and legislative changes in the United Kingdom, which could, for example, affect the pricing of pharmaceutical products in the United Kingdom, which could in turn result in diminished performance for Achieve. Even if the substance of regulatory changes resulting from BREXIT does not have a significant impact on Achieve's operations, it is reasonable to expect that Achieve would incur potentially significant costs in connection with complying with any new regulations. Further, the European Medicines Agency is currently located in the United Kingdom. It is possible that BREXIT would result in the relocation of the European Medicines Agency or disruption to the European Medicines Agency's review process, either of which could have an adverse effect on Achieve's operations in the United Kingdom and the European Union.

BREXIT may also have adverse effects on potential customers and collaborators of Achieve, which could indirectly have an adverse effect on Achieve.

Risks Related to Achieve's Business Operations

It is difficult to evaluate Achieve's current business, predict Achieve's future prospects and forecast Achieve's financial performance and growth.

To date Achieve's business activities have been focused primarily on the development and regulatory approval of cytisine and its various alternative forms. Although Achieve has not generated revenue to date, Achieve expects that, after any regulatory approval, any receipt of revenue will be attributable to sales of cytisine, primarily in the United States, the European Union (including the United Kingdom) and Japan. Because Achieve devotes substantially all of its resources to the development of cytisine and relies on cytisine as its sole source of potential revenue for the foreseeable future, any factors that negatively impact this product, or result in decreasing product sales, would materially and adversely affect Achieve's business, financial condition and results of operations.

Achieve's future success depends in part on its ability to attract, retain, and motivate other qualified personnel.

Achieve currently has a limited number of personnel. Achieve expects to need additional scientific, technical, operational, financial and other personnel. Recruiting and retaining other qualified employees, consultants, and advisors for Achieve's business will be important to achieve success. Achieve may not be able to attract and retain personnel on acceptable terms, if at all, given the competition among numerous pharmaceutical and biotechnology companies for individuals with similar skill sets. In addition, failure to succeed in development and commercialization of cytisine may make it more challenging to recruit and retain qualified personnel. The inability to recruit and retain qualified personnel, or the loss of the services of its current personnel may impede the progress of Achieve's research, development, and commercialization objectives and would negatively impact Achieve's ability to succeed in its product development strategy.

Achieve will need to expand its organization and Achieve may experience difficulties in managing this growth, which could disrupt its operations.

Its management may need to divert a disproportionate amount of its attention away from its day-to-day activities and devote a substantial amount of time to managing these growth activities. Achieve may not be able to

effectively manage the expansion of its operations, which may result in weaknesses in its infrastructure, operational mistakes, loss of business opportunities, loss of employees, and reduced productivity among remaining employees. Achieve's expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If its management is unable to effectively manage its growth, its expenses may increase more than expected, its ability to generate and/or grow revenue could be reduced and Achieve may not be able to implement its business strategy. Achieve's future financial performance and its ability to commercialize product candidates and compete effectively will depend, in part, on its ability to effectively manage any future growth.

Risks Related to Achieve's Reliance on Third Parties

Achieve expects to continue to rely on third parties to manufacture cytisine for use in clinical trials, and Achieve intends to exclusively rely on Sopharma to produce and process cytisine, if approved. Achieve's commercialization of cytisine could be stopped, delayed or made less profitable if Sopharma fails to obtain approval of government regulators, fails to provide Achieve with sufficient quantities of product, or fails to do so at acceptable quality levels or prices.

Achieve does not currently have nor does it currently plan to develop the infrastructure or capability internally to manufacture its clinical supplies for use in the conduct of Achieve's clinical trials, and Achieve lacks the resources and the capability to manufacture cytisine on a clinical or commercial scale. Achieve currently exclusively relies on Sopharma to manufacture cytisine for use in clinical trials and plans to continue relying on Sopharma to manufacture cytisine on a commercial scale, if approved.

Achieve's reliance on Sopharma exposes Achieve to the following additional risks:

- Sopharma might be unable to timely manufacture cytisine or produce the quantity and quality required to meet Achieve's clinical and commercial needs, if any;
- Achieve may be unable to identify manufacturers other than Sopharma on acceptable terms or at all;
- Sopharma may not be able to execute Achieve's manufacturing procedures appropriately;
- Sopharma may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply its clinical trials or to successfully produce, store and distribute its products;
- Sopharma is or will be subject to ongoing periodic unannounced inspection by the FDA and corresponding state agencies to ensure strict compliance with cGMPs and other government regulations and corresponding foreign standards. Achieve does not have control over Sopharma's compliance with these regulations and standards;
- Achieve may not own, or may have to share, the intellectual property rights to any improvements made by Sopharma in the manufacturing process for cytisine;
- Achieve does not own the intellectual property rights to cytisine, and Sopharma could license such rights to third parties or begin supplying other third parties with cytisine; and
- Sopharma could breach or terminate their agreement with Achieve.

Each of these risks could delay Achieve's clinical trials, the approval, if any of cytisine by the FDA or the commercialization of cytisine or result in higher costs or deprive Achieve of potential product revenue.

The manufacture of medical products is complex and requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of medical products often encounter difficulties in production, particularly in scaling up and validating initial production and absence of contamination. These problems include difficulties with production costs and yields, quality control, including stability of the product, quality assurance testing, operator error, shortages of qualified

personnel, as well as compliance with strictly enforced federal, state and foreign regulations. Furthermore, if contaminants are discovered in the supply of cytisine or in the Sopharma manufacturing facilities, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination. Achieve cannot be assured that any stability or other issues relating to the manufacture of cytisine will not occur in the future. Additionally, Sopharma may experience manufacturing difficulties due to resource constraints or as a result of labor disputes or political instability in the countries in which Sopharma conducts its operations. If Sopharma were to encounter any of these difficulties, or otherwise fail to comply with their contractual obligations, Achieve's ability to provide its product candidates to patients in clinical trials could be delayed or suspended. Any delay or interruption in the supply of clinical trial supplies could delay the completion of clinical trials, increase the costs associated with maintaining clinical trial programs and, depending upon the period of delay, require Achieve to commence new clinical trials at additional expense or terminate clinical trials completely. Similar political instability could also harm the commercial production and supply of cytisine in the event that cytisine is ultimately approved for commercial sale.

Achieve relies on third parties to conduct its clinical trials and perform other services. If these third parties do not successfully perform and comply with regulatory requirements, Achieve may not be able to successfully complete clinical development, obtain regulatory approval or commercialize cytisine and its business could be substantially harmed.

Achieve plans to rely upon third-party CROs to conduct, monitor and manage its ongoing clinical programs. Achieve relies on these parties for execution of clinical trials and manages and controls only some aspects of their activities. Achieve remains responsible for ensuring that each of its trials is conducted in accordance with the applicable protocol, legal, regulatory, and scientific standards and its reliance on the CROs does not relieve Achieve of its regulatory responsibilities. Achieve and its CROs and other vendors are required to comply with all applicable laws, regulations and guidelines, including those required by the FDA and comparable foreign regulatory authorities for all of its product candidates in clinical development. If Achieve or any of its CROs or vendors fail to comply with applicable laws, regulations and guidelines, the results generated in its clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require Achieve to perform additional clinical trials before approving its marketing applications. Achieve cannot be assured that its CROs and other vendors will meet these requirements, or that upon inspection by any regulatory authority, such regulatory authority will determine that efforts, including any of its clinical trials, comply with applicable requirements. Its failure to comply with these laws, regulations and guidelines may require Achieve to repeat clinical trials, which would be costly and delay the regulatory approval process.

If any of Achieve's relationships with these third-party CROs terminate, Achieve may not be able to enter into arrangements with alternative CROs in a timely manner or do so on commercially reasonable terms. In addition, Achieve's CROs may not prioritize Achieve's clinical trials relative to those of other customers and any turnover in personnel or delays in the allocation of CRO employees by the CRO may negatively affect its clinical trials. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, continued development of cytisine may be delayed or terminated and Achieve may not be able to meet its current plans with respect to cytisine. CROs may also involve higher costs than anticipated, which could negatively affect Achieve's financial condition and operations.

Achieve may not be able to establish or maintain the third-party relationships that are necessary to develop or potentially commercialize cytisine.

Achieve's business plan relies heavily on third party collaborators, partners, licensees, clinical research organizations, clinical investigators, vendors or other third parties to support its research and development efforts and to conduct clinical trials for cytisine. Achieve cannot guarantee that it will be able to successfully negotiate agreements for, or maintain relationships with, these third parties on a commercially reasonable basis, if at all. If Achieve fails to establish or maintain such third-party relationships as anticipated, its business could be adversely effected.

Achieve may be unable to realize the potential benefits of any collaborations which it may enter into with other companies for the development and commercialization of cytisine.

Achieve may enter into a collaboration with third parties concerning the development and/or commercialization of cytisine; however, there is no guarantee that any such collaboration will be successful. Collaborations may pose a number of risks, including:

- collaborators often have significant discretion in determining the efforts and resources that they will apply to the collaboration, and may not commit sufficient resources to the development, marketing or commercialization of cytisine;
- collaborators may not perform their obligations as expected;
- any such collaboration may significantly limit Achieve's share of potential future profits from the associated program, and may require it to relinquish potentially valuable rights to cytisine, or other potential products or proprietary technologies or grant licenses on terms that are not favorable to Achieve;
- collaborators may cease to devote resources to the development or commercialization of cytisine if the collaborators view cytisine as competitive with their own products or product candidates;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the course of development, might cause delays or termination of the development or commercialization of cytisine, and might result in legal proceedings, which would be time consuming, distracting and expensive;
- collaborators may be impacted by changes in their strategic focus or available funding, or business combinations involving them, which could cause them to divert resources away from the collaboration;
- collaborators may infringe the intellectual property rights of third parties, which may expose Achieve to litigation and potential liability;
- the collaborations may not result in Achieve achieving revenues to justify such transactions; and
- collaborations may be terminated and, if terminated, may result in a need for Achieve to raise additional capital to pursue further development or commercialization of cytisine.

As a result, a collaboration may not result in the successful development or commercialization of cytisine.

Achieve enters into various contracts in the normal course of its business in which Achieve indemnifies the other party to the contract. In the event Achieve has to perform under these indemnification provisions, it could have a material adverse effect on its business, financial condition and results of operations.

In the normal course of business, Achieve enters into academic, commercial, service, collaboration, licensing, consulting and other agreements that contain indemnification provisions. With respect to Achieve's academic and other research agreements, Achieve typically indemnifies the institution and related parties from losses arising from claims relating to the products, processes or services made, used, sold or performed pursuant to the agreements for which Achieve has secured licenses, and from claims arising from Achieve's or its sublicensees' exercise of rights under the agreement. With respect to Achieve's collaboration agreements, Achieve indemnifies its collaborators from any third-party product liability claims that could result from the production, use or consumption of the product, as well as for alleged infringements of any patent or other intellectual property right by a third party. With respect to consultants, Achieve indemnifies them from claims arising from the good faith performance of their services.

Should Achieve's obligation under an indemnification provision exceed applicable insurance coverage or if Achieve were denied insurance coverage, Achieve's business, financial condition and results of operations could be adversely affected. Similarly, if Achieve is relying on a collaborator to indemnify Achieve and the

collaborator is denied insurance coverage or the indemnification obligation exceeds the applicable insurance coverage, and if the collaborator does not have other assets available to indemnify Achieve, its business, financial condition and results of operations could be adversely affected.

Risks Related to Commercialization of Cytisine

Achieve faces substantial competition and its competitors may discover, develop or commercialize products faster or more successfully than Achieve.

The development and commercialization of new products is highly competitive. Achieve faces competition from major pharmaceutical companies, specialty pharmaceutical companies, biotechnology companies, universities and other research institutions worldwide with respect to cytisine and the other product candidates that it may seek to develop or commercialize in the future. Achieve is aware that many companies have therapeutics marketed or in development for smoking cessation, including, Pfizer Inc., GlaxoSmithKline Plc, Merck & Co., Novartis, Invion, Embera Neurotherapeutics, Redwood Scientific Technologies, Inc., 22nd Century Group, Inc., Quit4Good, Chrono Therapeutics, NAL Pharmaceuticals, Selecta Biosciences, Aradigm and others.

Many of Achieve's competitors have substantially greater financial, name recognition, manufacturing, marketing, research, technical and other resources than Achieve. Additional mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in its competitors. Further, Achieve's competitors may develop new products that are safer, more effective or more cost-efficient than cytisine. Large pharmaceutical companies in particular have extensive expertise in pre-clinical and clinical testing and in obtaining regulatory approvals for products. In addition, academic institutions, government agencies, and other public and private organizations conducting research may seek patent protection with respect to potentially competitive products or technologies. These organizations may also establish exclusive collaborative or licensing relationships with Achieve's competitors. Failure of cytisine to effectively compete against established treatment options or in the future with new products currently in development would harm Achieve's business, financial condition, results of operations and prospects.

The commercial success of cytisine will depend upon the degree of market acceptance by physicians, patients, third-party payors, and others in the medical community. Failure to obtain or maintain adequate reimbursement or insurance coverage for products, if any, could limit Achieve's ability to market cytisine and decrease its ability to generate revenue.

Even with the approvals from the FDA and comparable foreign regulatory authorities, the commercial success of cytisine will depend in part on the health care providers, patients, and third-party payors accepting cytisine as medically useful, cost-effective, and safe. Cytisine may not gain market acceptance by physicians, patients and third-party payors. The degree of market acceptance of cytisine will depend on a number of factors, including but not limited to:

- the efficacy, if any, of cytisine as demonstrated in clinical trials and potential advantages over competing treatments, if any;
- the clinical indications for which approval is granted, if any, including any limitations or warnings contained in cytisine's approved labeling;
- the cost of treatment;
- the perceived ratio of risk and benefit of these therapies by physicians and the willingness of physicians to recommend the product to patients based on such risks and benefits;
- the marketing, sales and distribution support for cytisine;
- the publicity concerning cytisine or competing products and treatments;
- the pricing and availability of third-party insurance coverage and reimbursement; and
- negative perceptions or experiences with Achieve's competitor's products may be ascribed to cytisine.

Even if cytisine displays a favorable efficacy and safety profile upon approval, market acceptance of cytisine remains uncertain. Efforts to educate the medical community and third-party payors on the benefits of cytisine, if any, may require significant investment and resources and may never be successful. Additionally, third-party payors, including governmental and private insurers, may also encourage the use of generic products instead of cytisine, which require a prescription. If its products fail to achieve an adequate level of acceptance by physicians, patients, third-party payors, and other health care providers, Achieve will not be able to generate sufficient revenue to become or remain profitable.

The pricing, coverage, and reimbursement of cytisine, if any, must be sufficient to support Achieve's commercial efforts and other development programs and the availability and adequacy of coverage and reimbursement by third-party payors, including governmental and private insurers, are essential for most patients to be able to afford treatments. Sales of cytisine, if any, will depend substantially, both domestically and abroad, on the extent to which the costs of cytisine will be paid for or reimbursed by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or government payors and private payors. If coverage and reimbursement are not available, or are available only in limited amounts, Achieve may have to subsidize or provide cytisine for free or Achieve may not be able to successfully commercialize cytisine.

In addition, there is significant uncertainty related to the insurance coverage and reimbursement for newly approved products. In the United States, the principal decisions about coverage and reimbursement for new products are typically made by CMS, an agency within the U.S. Department of Health and Human Services, as CMS decides whether and to what extent a new product will be covered and reimbursed under Medicare. Private payors tend to follow the coverage reimbursement policies established by CMS to a substantial degree. It is difficult to predict what CMS will decide with respect to reimbursement for novel product candidates such as cytisine and what reimbursement codes cytisine may receive if approved.

Outside the United States, selling operations are generally subject to extensive governmental price controls and other price-restrictive regulations, and Achieve believes the increasing emphasis on cost-containment initiatives in Europe, Canada, and other countries has and will continue to put pressure on the pricing and usage of products. In many countries, the prices of products are subject to varying price control mechanisms as part of national health systems. Price controls or other changes in pricing regulation could restrict the amount that Achieve is able to charge for its products, if any. Accordingly, in markets outside the United States, the potential revenue may be insufficient to generate commercially reasonable revenue and profits.

Moreover, increasing efforts by governmental and private payors in the United States and abroad to limit or reduce healthcare costs may result in restrictions on coverage and the level of reimbursement for new products and, as a result, they may not cover or provide adequate payment for its products. Achieve expects to experience pricing pressures in connection with products due to the increasing trend toward managed healthcare, including the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription products has and is expected to continue to increase in the future. As a result, profitability of cytisine, if any, may be more difficult to achieve even if regulatory approval is received.

Sopharma may breach its supply agreement with Achieve and sell cytisine into Achieve's territories or permit third parties to export cytisine into Achieve's territories and negatively affect Achieve's commercialization efforts of its products in its territories.

Achieve is currently dependent on the exclusivity provisions of its supply agreement with Sopharma to conduct its business and to prevent Sopharma from competing, directly and indirectly, with Achieve in the United States and Western Europe. If Sopharma were to breach the exclusivity provisions of the supply agreement with Achieve and sell or distribute cytisine directly into Achieve's territories or permit third parties to export cytisine into Achieve's territories, among other things, the increase in competition within Achieve's anticipated markets could have a material adverse effect on Achieve's business, results of operations and financial condition.

The illegal distribution and sale by third parties of counterfeit versions of cytisine, stolen products, or alternative third party distribution and sale of cytisine could have a negative impact on Achieve's financial performance or reputation.

Cytisine is not patentable in the United States as it is a naturally occurring substance. As such, third parties are able to manufacture, sell or distribute cytisine without royalties or other payments to Achieve and compete with Achieve's products in the United States and potentially worldwide and negatively impact Achieve's commercialization efforts of its products. Other than regulatory exclusivity or other limitations, there may be little to nothing to stop these third parties from manufacturing, selling or distributing cytisine. Because Achieve has no ability to set rigorous safety standards or control processes over third party manufacturers, sellers or distributors of cytisine, excluding Sopharma, these formulations of cytisine may be unsafe or cause adverse effects to patients and negatively impact the reputation of cytisine as a safe and effective smoking cessation aid.

Third parties could illegally distribute and sell counterfeit versions of cytisine, especially on online marketplaces, which do not meet the rigorous manufacturing and testing standards under cGMP. Counterfeit products are frequently unsafe or ineffective, and may even be life-threatening. Counterfeit medicines may contain harmful substances, the wrong dose of the active pharmaceutical ingredient or no active pharmaceutical ingredients at all. However, to distributors and users, counterfeit products may be visually indistinguishable from the authentic version.

Reports of adverse reactions to counterfeit products, increased levels of counterfeiting, or unsafe cytisine products could materially affect patient confidence in Achieve's cytisine product. It is possible that adverse events caused by unsafe counterfeit or other non-Achieve cytisine products will mistakenly be attributed to Achieve's cytisine product. In addition, thefts of inventory at warehouses, plants or while in-transit, which are not properly stored and which are sold through unauthorized channels could adversely impact patient safety, Achieve's reputation, and Achieve's business. Public loss of confidence in the integrity in cytisine as a result of counterfeiting, theft, or improper manufacturing processes could have a material adverse effect on Achieve's business, results of operations, and financial condition.

It is illegal to sell unapproved prescription medicines in the United States. Sopharma's cytisine brand, Tabex, is currently approved for sale in certain Central and Eastern European countries. Cytisine has not yet received a marketing approval from the FDA or the European Medicines Agency, and Achieve intends to conduct the requisite clinical trials to obtain approval for the marketing of cytisine in the United States and in Europe. Achieve is aware that products purporting to be Tabex are available, via third party internet sites, for importation in the United States and European Union. Achieve has no control over the authenticity of products purchased through these sites, which may be counterfeit or sourced from distributors in Central and Eastern Europe without authorization to sell into the United States or European Union.

Achieve may attempt to form collaborations in the future with respect to cytisine, but it may not be able to do so, which may cause it to alter its development and commercialization plans.

Achieve may attempt to form strategic collaborations, create joint ventures or enter into licensing arrangements with third parties with respect to its programs that it believes will complement or augment its existing business. Achieve may face significant competition in seeking appropriate strategic collaborators, and the negotiation process to secure appropriate terms is time consuming and complex. Achieve may not be successful in its efforts to establish such a strategic collaboration for cytisine on terms that are acceptable to it, or at all. This may be because cytisine may be deemed to be at too early of a stage of development for collaborative effort, its research and development pipeline may be viewed as insufficient, the competitive or intellectual property landscape may be viewed as too intense or risky, or cytisine's patent protection insufficient, and/or third parties may not view cytisine as having sufficient potential for commercialization, including the likelihood of an adequate safety and efficacy profile.

Any delays in identifying suitable collaborators and entering into agreements to develop and/or commercialize cytisine could delay the development or commercialization of cytisine, which may reduce its competitiveness

even if it reaches the market. Absent a strategic collaborator, Achieve would need to undertake development and/or commercialization activities at its own expense. If Achieve elects to fund and undertake development and/or commercialization activities on its own, it may need to obtain additional expertise and additional capital, which may not be available to it on acceptable terms or at all. If Achieve is unable to do so, it may not be able to develop its product candidates or bring them to market and its business may be materially and adversely affected.

Achieve may not be successful in any efforts to identify, license, discover, develop, or commercialize additional product candidates.

Although a substantial amount of Achieve's effort will focus on clinical testing, approval, and potential commercialization of cytisine, Achieve's sole product candidate, the success of Achieve's business is also expected to depend in part upon its ability to identify, license, discover, develop, or commercialize additional product candidates. Research programs to identify new product candidates require substantial technical, financial, and human resources. Achieve may focus its efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful. Achieve's research programs or licensing efforts may fail to yield additional product candidates for clinical development and commercialization for a number of reasons, including but not limited to the following:

- Achieve's research or business development methodology or search criteria and process may be unsuccessful in identifying potential product candidates;
- Achieve may not be able or willing to assemble sufficient resources to acquire or discover additional product candidates;
- its product candidates may not succeed in pre-clinical or clinical testing;
- its potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval;
- competitors may develop alternatives that render Achieve's product candidates obsolete or less attractive;
- product candidates Achieve develops may be covered by third parties' patents or other exclusive rights;
- the market for a product candidate may change during Achieve's program so that such a product may become unreasonable to continue to develop;
- a product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all; and
- a product candidate may not be accepted as safe and effective by patients, the medical community, or third-party payors.

If any of these events occur, Achieve may be forced to abandon its development efforts for a program or programs, or Achieve may not be able to identify, license, discover, develop, or commercialize additional product candidates, which would have a material adverse effect on its business, financial condition or results of operations and could potentially cause Achieve to cease operations.

Risks Related to Achieve's Intellectual Property

Achieve may not be successful in obtaining or maintaining necessary rights to cytisine, product compounds and processes for its development pipeline through acquisitions and in-licenses.

Presently, Achieve has rights to the intellectual property through trade secrets, licenses from third parties and patent applications that Achieve owns. Achieve's product candidates may require specific formulations to work effectively and efficiently and these rights may be held by others. Achieve may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties

that it identifies. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that Achieve may consider attractive. These established companies may have a competitive advantage over Achieve due to their size, cash resources and greater clinical development and commercialization capabilities. In addition, companies that perceive Achieve to be a competitor may be unwilling to assign or license rights to it. Achieve also may be unable to license or acquire third-party intellectual property rights on terms that would allow it to make an appropriate return on its investment. If Achieve is unable to successfully obtain rights to third-party intellectual property rights, its business, financial condition and prospects for growth could suffer.

If Achieve is unable to maintain effective proprietary rights for its product candidates or any future product candidates, Achieve may not be able to compete effectively in its proposed markets.

Achieve currently relies primarily on trade secret protection and on confidentiality agreements to protect proprietary know-how that is not patentable or that Achieve elects not to patent, processes for which patents are difficult to enforce and any other elements of its product candidate discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. Trade secrets can be difficult to protect, however, and even where they are protected they generally provide less intellectual property protection to the holder of the trade secret than to a holder of a patent. Achieve seeks to protect its proprietary technology and processes, in part, by entering into confidentiality agreements with its employees, consultants, scientific advisors, and contractors. Achieve also seeks to preserve the integrity and confidentiality of its data and trade secrets by maintaining physical security of its premises and physical and electronic security of its information technology systems. While Achieve has confidence in these individuals, organizations and systems, agreements or security measures may be breached, and Achieve may not have adequate remedies for any breach. In addition, its trade secrets may otherwise become known or be independently discovered by competitors.

Although Achieve expects all of its employees and consultants to assign their inventions to Achieve, and all of its employees, consultants, advisors, and any third parties who have access to its proprietary know-how, information, or technology to enter into confidentiality agreements, Achieve cannot provide any assurances that all such agreements have been duly executed or that its trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to its trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of Achieve's trade secrets could impair its competitive position and may have a material adverse effect on its business, financial condition or results of operations. Additionally, if the steps taken to maintain its trade secrets are deemed inadequate, Achieve may have insufficient recourse against third parties for misappropriating the trade secret.

Third-party claims of intellectual property infringement may prevent or delay Achieve's development and commercialization efforts.

Achieve is currently developing cytisine for smoking cessation. Achieve's commercial success depends in part on its ability to develop, manufacture, market and sell its product candidates and use its proprietary technology without infringing the patent rights of third parties. Achieve is not aware of any patents or patent applications that would prevent the development, manufacture or marketing of cytisine for smoking cessation.

Achieve is aware of U.S. and foreign patents and pending patent applications owned by third parties that cover certain other therapeutic uses of cytisine. Achieve is currently monitoring these patents and patent applications. Achieve may in the future pursue available proceedings in the U.S. and foreign patent offices to challenge the validity of these patents and patent applications. In addition, or alternatively, Achieve may consider whether to seek to negotiate a license of rights to technology covered by one or more of such patents and patent applications for these certain additional therapeutic uses. If any third party patents or patent applications cover its product candidates or technologies in other therapeutic uses, Achieve may not be free to manufacture or market its

product candidates for additional therapeutic uses, absent such a license, which may not be available to Achieve on commercially reasonable terms, or at all.

It is also possible that Achieve has failed to identify relevant third-party patents or applications. For example, applications filed before November 29, 2000 and applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Moreover, it is difficult for industry participants, including Achieve, to identify all third-party patent rights that may be relevant to its product candidates and technologies because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent claims. Achieve may fail to identify relevant patents or patent applications or may identify pending patent applications of potential interest but incorrectly predict the likelihood that such patent applications may issue with claims of relevance to its technology. In addition, Achieve may be unaware of one or more issued patents that would be infringed by the manufacture, sale or use of a current or future product candidate, or Achieve may incorrectly conclude that a third-party patent is invalid, unenforceable or not infringed by its activities. Additionally, pending patent applications that have been published can, subject to specified limitations, be later amended in a manner that could cover Achieve's technologies, its product candidates or the use of its product candidates.

There have been many lawsuits and other proceedings involving patent and other intellectual property rights in the pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, and reexamination proceedings before the USPTO and corresponding foreign patent offices. U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which Achieve is developing product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that its product candidates may be subject to claims of infringement of the patent rights of third parties.

Parties making claims against Achieve may obtain injunctive or other equitable relief, which could effectively block its ability to further develop and commercialize one or more of its product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from its business. In the event of a successful claim of infringement against Achieve, Achieve may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign its infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

Achieve intends to rely on patent rights for certain aspects of its product candidates and certain future product candidates. If Achieve is unable to obtain or maintain an adequate proprietary position from this approach, Achieve may not be able to compete effectively in its markets.

Although Achieve relies or will rely primarily on trade secret protection as part of its intellectual property rights strategies, Achieve also intends to rely on patent rights to protect certain aspects of its technologies and upon the patent rights of third parties from which it licenses certain of its technologies.

Achieve has sought to protect its proprietary position by filing patent applications in the United Kingdom and intends to file patent applications in the United States related to future product candidates. This process is expensive and time consuming, and Achieve may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner or at all. It is also possible that Achieve will fail to identify patentable aspects of its research and development output before it is too late to obtain patent protection.

The patent position of pharmaceutical companies generally is highly uncertain and involves complex legal and factual questions for which legal principles remain unsolved. The patent applications that Achieve owns may fail to result in issued patents with claims that cover its product candidates in the United States or in other foreign countries. There is no assurance that all potentially relevant prior art relating to its patent applications or its patents (once issued) has been found, which can invalidate a patent or prevent a patent from issuing from a

pending patent application. Even if patents do successfully issue, and even if such patents cover Achieve's future product candidates, third parties may challenge their validity, enforceability, or scope, which may result in such patents being narrowed, found unenforceable or invalidated. Furthermore, even if they are unchallenged, Achieve's patents and patent applications may not adequately protect its intellectual property, provide exclusivity for its future product candidates, or prevent others from designing around the Achieve claims. Any of these outcomes could impair Achieve's ability to prevent competition from third parties, which may have an adverse impact on its business.

Achieve cannot offer any assurances about which, if any, patents will issue, the breadth of any such patent or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful opposition to these patents or any other patents owned by or licensed to Achieve after patent issuance could deprive Achieve of rights necessary for the successful commercialization of any future product candidates that Achieve may develop. Further, if Achieve encounters delays in regulatory approvals, the period of time during which Achieve could market a future product candidate under patent protection could be reduced.

If Achieve cannot obtain and maintain effective protection of exclusivity from its regulatory efforts and intellectual property rights, including patent protection or data exclusivity, for its product candidates, Achieve may not be able to compete effectively and its business and results of operations would be harmed.

Changes in patent law could diminish the value of patents in general, thereby impairing Achieve's ability to protect its product candidates.

Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity, and is therefore costly, time-consuming, and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to Achieve's ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents once obtained, if any. Depending on decisions by the U.S. Congress, the federal courts and the U.S. Patent and Trademark Office, or the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken Achieve's ability to obtain new patents or to enforce its existing patents and patents that Achieve might obtain in the future.

In a recent case, *Assoc. for Molecular Pathology v. Myriad Genetics, Inc*., the U.S. Supreme Court held that certain claims to naturally-occurring substances are not patentable. Cytisine is a naturally-occurring product and is not patentable. Achieve's intellectual property strategy involves novel formulations of cytisine and there is no guarantee that such patents will be issued or if issued, will be broad enough to prevent competitors from developing competing cytisine products. Although Achieve does not believe that any patents that may issue from Achieve's pending patent applications directed at its product candidates, if issued in their currently pending forms, as well as patent rights licensed by Achieve, will be found invalid based on this decision, Achieve cannot predict how future decisions by the courts, the U.S. Congress or the USPTO may impact the value of Achieve's patent rights. There could be similar changes in the laws of foreign jurisdictions that may impact the value of Achieve's patent rights or its other intellectual property rights.

Achieve may be subject to claims that its employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties or that its employees have wrongfully used or disclosed alleged trade secrets of their former employers.

Achieve employs individuals who were previously employed at other biotechnology or pharmaceutical companies. Although Achieve has written agreements and makes every effort to ensure that its employees, consultants, and independent contractors do not use the proprietary information or intellectual property rights of others in their work for Achieve, Achieve may in the future be subject to any claims that its employees,

consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties. Litigation may be necessary to defend against these claims. If Achieve fails in defending any such claims, in addition to paying monetary damages, Achieve may lose valuable intellectual property rights or personnel, which could adversely impact its business. Even if Achieve is successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Risks Related to the Combined Company

In determining whether you should approve the merger, the issuance of shares of OncoGenex common stock and other matters related to the merger, as the case may be, you should carefully read the following risk factors in addition to the risks described above.

The combined company's stock price is expected to be volatile, and the market price of its common stock may drop following the merger.

The market price of the combined company's common stock following the merger could be subject to significant fluctuations following the merger. Market prices for securities of early-stage pharmaceutical, biotechnology and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the market price of the combined company's common stock to fluctuate include:

- the ability of the combined company or its partners to develop cytisine and other product candidates and conduct clinical trials that demonstrate such product candidates are safe and effective;
- the ability of the combined company to identify a collaboration partner to fund the further development of apatorsen and the ability of the collaboration partner to obtain regulatory approvals for apatorsen;
- the ability of the combined company or its partners to obtain regulatory approvals for cytisine or other product candidates, and delays or failures to obtain such approvals;
- failure of any of the combined company's product candidates to demonstrate safety and efficacy, receive regulatory approval and achieve commercial success;
- failure to maintain its existing third party license, manufacturing and supply agreements;
- failure by the combined company or its licensors to prosecute, maintain, or enforce its intellectual property rights;
- changes in laws or regulations applicable to the combined company's product candidates;
- any inability to obtain adequate supply of product candidates or the inability to do so at acceptable prices;
- adverse regulatory authority decisions;
- introduction of new or competing products by its competitors;
- failure to meet or exceed financial and development projections the combined company may provide to the public;
- the perception of the pharmaceutical industry by the public, legislatures, regulators and the investment community;
- announcements of significant acquisitions, strategic partnerships, joint ventures, or capital commitments by the combined company or its competitors;
- disputes or other developments relating to proprietary rights, including patents, litigation matters, and the combined company's ability to obtain intellectual property protection for its technologies;
- additions or departures of key personnel;

- significant lawsuits, including intellectual property or stockholder litigation;
- if securities or industry analysts do not publish research or reports about the combined company, or if they issue an adverse or misleading opinions regarding its business and stock;
- changes in the market valuations of similar companies;
- general market or macroeconomic conditions;
- sales of its common stock by the combined company or its stockholders in the future;
- trading volume of the combined company's common stock;
- adverse publicity relating to the combined company's markets generally, including with respect to other products and potential products in such markets;
- changes in the structure of health care payment systems; and
- period-to-period fluctuations in the combined company's financial results.

Moreover, the stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies. These broad market fluctuations may also adversely affect the trading price of the combined company's common stock.

In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against those companies. Such litigation, if instituted, could result in substantial costs and diversion of management attention and resources, which could significantly harm the combined company's profitability and reputation.

The combined company will incur costs and demands upon management as a result of complying with the laws and regulations affecting public companies.

The combined company will incur significant legal, accounting and other expenses that Achieve did not incur as a private company, including costs associated with public company reporting requirements. The combined company will also incur costs associated with corporate governance requirements, including requirements under the Sarbanes-Oxley Act, as well as new rules implemented by the SEC and The NASDAQ Stock Market LLC. These rules and regulations are expected to increase the combined company's legal and financial compliance costs and to make some activities more time-consuming and costly. These rules and regulations may also make it difficult and expensive for the combined company to obtain directors' and officers' liability insurance. As a result, it may be more difficult for the combined company to attract and retain qualified individuals to serve on the combined company's board of directors or as executive officers of the combined company, which may adversely affect investor confidence in the combined company and could cause the combined company's business or stock price to suffer.

OncoGenex and Achieve do not anticipate that the combined company will pay any cash dividends in the foreseeable future.

The current expectation is that the combined company will retain its future earnings, if any, to fund the development and growth of the combined company's business. As a result, capital appreciation, if any, of the common stock of the combined company will be your sole source of gain, if any, for the foreseeable future.

Future sales of shares by existing stockholders could cause the combined company's stock price to decline.

If existing stockholders of OncoGenex and Achieve sell, or indicate an intention to sell, substantial amounts of the combined company's common stock in the public market after legal restrictions on resale discussed in this proxy statement/prospectus/information statement lapse, the trading price of the common stock of the combined

company could decline. Based on shares outstanding as of December 31, 2016 and shares expected to be issued upon completion of the merger, the combined company is expected to have outstanding a total of approximately 120.1 million shares of common stock (prior to giving effect to the proposed reverse stock split) immediately following the completion of the merger. Approximately 49.8 million of such shares of common stock will be freely tradable, without restriction, in the public market. Approximately 70.3 million of such shares will be held by directors, executive officers of the combined company and other affiliates and will be subject to volume limitations under Rule 144 under the Securities Act and various vesting agreements.

If the ownership of the combined company common stock is highly concentrated, it may prevent you and other stockholders from influencing significant corporate decisions and may result in conflicts of interest that could cause the combined company stock price to decline.

Executive officers and directors of the combined company and their affiliates are expected to beneficially own or control approximately 39.1% of the outstanding shares of the combined company common stock following the completion of the merger. Accordingly, these executive officers, directors and their affiliates, acting as a group, will have substantial influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of the combined company assets or any other significant corporate transactions. These stockholders may also delay or prevent a change of control of the combined company, even if such a change of control would benefit the other stockholders of the combined company. The significant concentration of stock ownership may adversely affect the trading price of the combined company's common stock due to investors' perception that conflicts of interest may exist or arise.

Because the merger will result in an ownership change under Section 382 of the Code for OncoGenex, pre-merger net operating loss carryforwards and certain other tax attributes will be subject to limitations.

If a corporation undergoes an "ownership change" within the meaning of Section 382 of the Code, the corporation's net operating loss carryforwards and certain other tax attributes arising from before the ownership change are subject to limitations on use after the ownership change. In general, an ownership change occurs if there is a cumulative change in the corporation's equity ownership by certain stockholders that exceeds fifty percentage points over a rolling three-year period. Similar rules may apply under state tax laws. The merger will result in an ownership change for OncoGenex and, accordingly, OncoGenex's net operating loss carryforwards and certain other tax attributes will be subject to limitations on their use after the merger.

Anti-takeover provisions under Delaware law could make an acquisition of the combined company more difficult and may prevent attempts by the combined company stockholders to replace or remove the combined company management.

Because the combined company will be incorporated in Delaware, it is governed by the provisions of Section 203 of the Delaware General Corporate Law, which prohibits stockholders owning in excess of 15% of the outstanding combined company voting stock from merging or combining with the combined company. Although OncoGenex and Achieve believe these provisions collectively will provide for an opportunity to receive higher bids by requiring potential acquirors to negotiate with the combined company's board of directors, they would apply even if the offer may be considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by the combined company's stockholders to replace or remove then current management by making it more difficult for stockholders to replace members of the board of directors, which is responsible for appointing the members of management.

The bylaws of the combined company will provide that the Court of Chancery of the State of Delaware is the exclusive forum for substantially all disputes between the combined company and its stockholders, which could limit its stockholders' ability to obtain a favorable judicial forum for disputes with the combined company or its directors, officers or other employees.

The bylaws of the combined company will provide that the Court of Chancery of the State of Delaware is the sole and exclusive forum for any derivative action or proceeding brought on the combined company's behalf, any

action asserting a breach of fiduciary duty owed by any of its directors, officers or other employees to the combined company or its stockholders, any action asserting a claim against it arising pursuant to any provisions of the Delaware General Corporation Law, its certificate of incorporation or its bylaws, or any action asserting a claim against it that is governed by the internal affairs doctrine. The choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with the combined company or its directors, officers or other employees, which may discourage such lawsuits against the combined company and its directors, officers and other employees. If a court were to find the choice of forum provision contained in the bylaws to be inapplicable or unenforceable in an action, the combined company may incur additional costs associated with resolving such action in other jurisdictions.

CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This proxy statement/prospectus/information statement and the documents incorporated by reference into this proxy statement/prospectus/information statement contain forward-looking statements. These forward-looking statements are based on current expectations and beliefs and involve numerous risks and uncertainties that could cause actual results to differ materially from expectations. These forward-looking statements should not be relied upon as predictions of future events as OncoGenex cannot assure you that the events or circumstances reflected in these statements will be achieved or will occur. You can identify forward-looking statements by the use of forward-looking terminology including "believes," "expects," "may," "will," "should," "seeks," "intends," "plans," "pro forma," "estimates," or "anticipates" or the negative of these words and phrases or other variations of these words and phrases or comparable terminology. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. For example, forward-looking statements include, but are not limited to statements about:

- the expected benefits of and potential value created by the merger for the stockholders of OncoGenex and Achieve;
- any statements of the plans, strategies and objectives of management for future operations, including the execution of integration and restructuring plans and the anticipated timing of filings;
- the likelihood of the satisfaction of certain conditions to the completion of the merger and whether and when the merger will be consummated;
- whether the holders of CVRs will ultimately receive any payment;
- statements of the plans, strategies and objectives of management with respect to the approval and closing of the merger, and OncoGenex's ability to solicit a sufficient number of proxies to approve matters related to the consummation of the merger;
- any statements concerning proposed new products, anticipated development activities and planned regulatory communications;
- any statements regarding future economic conditions or performance; and
- statements of belief and any statement of assumptions underlying any of the foregoing.

For a discussion of the factors that may cause OncoGenex, Achieve or the combined company's actual results, performance or achievements to differ materially from any future results, performance or achievements expressed or implied in such forward-looking statements, or for a discussion of risk associated with the ability of OncoGenex and Achieve to complete the merger and the effect of the merger on the business of OncoGenex, Achieve and the combined company, see the section entitled "Risk Factors."

Additional factors that could cause actual results to differ materially from those expressed in the forward-looking statements are discussed in reports filed with the Securities and Exchange Commission by OncoGenex. See the section entitled "Where You Can Find More Information."

If any of these risks or uncertainties materializes or any of these assumptions proves incorrect, the results of OncoGenex, Achieve or the combined company could differ materially from the forward-looking statements. All forward-looking statements in this proxy statement/prospectus/information statement are current only as of the date on which the statements were made. OncoGenex and Achieve do not undertake any obligation to publicly update any forward-looking statement to reflect events or circumstances after the date on which any statement is made or to reflect the occurrence of unanticipated events.

THE SPECIAL MEETING OF ONCOGENEX STOCKHOLDERS

Date, Time and Place

The special meeting of OncoGenex stockholders will be held on , 2017, at 1191 Second Avenue, Floor 10, Seattle, WA 98101 commencing at local time. OncoGenex is sending this proxy statement/prospectus/information statement to its stockholders in connection with the solicitation of proxies by the OncoGenex board of directors for use at the OncoGenex special meeting and any adjournments or postponements of the special meeting. This proxy statement/prospectus/information statement is first being furnished to stockholders of OncoGenex on or about , 2017.

Purposes of the OncoGenex Special Meeting

The purposes of the OncoGenex special meeting are:

1. To consider and vote upon a proposal to approve the merger and the issuance of OncoGenex common stock in the merger pursuant to the Agreement and Plan of Merger and Reorganization, dated as of January 5, 2017, by and among OncoGenex, Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc. and Achieve, a copy of which is attached as *Annex A* to this proxy statement/prospectus/information statement, or the Merger Agreement;

2. To approve the amendment to the certificate of incorporation of OncoGenex to effect a reverse stock split of OncoGenex common stock, at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting, the form of which is attached as *Annex B* to this proxy statement/prospectus/information statement;

3. To approve the amendment to the certificate of incorporation of OncoGenex to change the name "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc.," the form of which is attached as *Annex C* to this proxy statement/prospectus/information statement;

4. To consider and vote upon an adjournment of the OncoGenex special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of OncoGenex Proposal Nos. 1, 2 and 3; and

5. To transact such other business as may properly come before the OncoGenex special meeting or any adjournment or postponement thereof.

Recommendation of the OncoGenex Board of Directors

- The OncoGenex board of directors has determined and believes that the merger and the issuance of shares of OncoGenex common stock pursuant to the first merger is in the best interests of OncoGenex and its stockholders and has approved such items. The OncoGenex board of directors recommends that OncoGenex stockholders vote "FOR" OncoGenex Proposal No. 1 to approve the merger and the issuance of shares of OncoGenex common stock in the first merger.
- The OncoGenex board of directors has determined and believes that it is advisable to, and in the best interests of, OncoGenex and its stockholders to approve the amendment to the certificate of incorporation of OncoGenex effecting a reverse stock split at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting, as described in this proxy statement/prospectus/information statement. The OncoGenex board of directors recommends that OncoGenex stockholders vote "FOR" OncoGenex Proposal No. 2 to approve the amendment to the certificate of incorporation of OncoGenex effecting a reverse stock split at a ratio not to exceed 1-for-20, as described in this proxy statement/prospectus/information statement.

- The OncoGenex board of directors has determined and believes that the amendment to the certificate of incorporation of OncoGenex to change the name of OncoGenex to "Achieve Life Sciences, Inc." is advisable to, and in the best interests of, OncoGenex and its stockholders and has approved such name change. The OncoGenex board of directors recommends that OncoGenex stockholders vote "FOR" OncoGenex Proposal No. 3 to approve the name change, as described in this proxy statement/prospectus/information statement.
- The OncoGenex board of directors has determined and believes that adjourning the OncoGenex special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of OncoGenex Proposal Nos. 1, 2 and 3 is advisable to, and in the best interests of, OncoGenex and its stockholders and has approved and adopted the proposal. The OncoGenex board of directors recommends that OncoGenex stockholders vote "FOR" OncoGenex Proposal No. 4 to adjourn the OncoGenex special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of OncoGenex Proposal Nos. 1, 2 and 3.

Record Date and Voting Power

Only holders of record of OncoGenex common stock at the close of business on the record date, , 2017, are entitled to notice of, and to vote at, the OncoGenex special meeting. At the close of business on the record date, shares of OncoGenex common stock were issued and outstanding. Each share of OncoGenex common stock entitles the holder thereof to one vote on each matter submitted for stockholder approval. See the section entitled "Principal Stockholders of OncoGenex" for information regarding persons known to the management of OncoGenex to be the beneficial owners of more than 5% of the outstanding shares of OncoGenex common stock.

Voting and Revocation of Proxies

The proxy accompanying this proxy statement/prospectus/information statement is solicited on behalf of the board of directors of OncoGenex for use at the OncoGenex special meeting.

If you are a stockholder of record of OncoGenex as of the record date referred to above, you may vote in person at the OncoGenex special meeting or vote by proxy using the enclosed proxy card. Whether or not you plan to attend the OncoGenex special meeting, OncoGenex urges you to vote by proxy to ensure your vote is counted. You may still attend the OncoGenex special meeting and vote in person if you have already voted by proxy. As a stockholder of record you are entitled:

- to vote in person, come to the OncoGenex special meeting and OncoGenex will give you a ballot when you arrive.
- to vote using the proxy card, simply mark, sign and date your proxy card and return it promptly in the postage-paid envelope provided. If you return your signed proxy card to OncoGenex before the OncoGenex special meeting, OncoGenex will vote your shares as you direct.
- to vote on the Internet, go to the website on the proxy card or voting instruction form to complete an electronic proxy card. You will be asked to provide the company number and control number from the enclosed proxy card. Your vote must be received by , 2017, Pacific Time to be counted.

If your OncoGenex shares are held by your broker as your nominee, that is, in "street name," the enclosed voting instruction card is sent by the institution that holds your shares. Please follow the instructions included on that proxy card regarding how to instruct your broker to vote your OncoGenex shares. If you do not give instructions to your broker, your broker can vote your OncoGenex shares with respect to "discretionary" items but not with respect to "non-discretionary" items. Discretionary items are proposals considered routine under the rules of The NASDAQ Capital Market on which your broker may vote shares held in "street name" in the absence of your voting instructions. On non-discretionary items for which you do not give your broker instructions, the OncoGenex shares will be treated as broker non-votes. It is anticipated that OncoGenex Proposal No. 1 will be a non-discretionary item and OncoGenex Proposal Nos. 2, 3 and 4 will be discretionary items.

All properly executed proxies that are not revoked will be voted at the OncoGenex special meeting and at any adjournments or postponements of the OncoGenex special meeting in accordance with the instructions contained in the proxy. If a holder of OncoGenex common stock executes and returns a proxy and does not specify otherwise, the shares represented by that proxy will be voted "FOR" OncoGenex Proposal No. 1 to approve the merger and the issuance of shares of OncoGenex common stock in the merger; "FOR" OncoGenex Proposal No. 2 to approve the amendment to the certificate of incorporation of OncoGenex effecting a reverse stock split at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting; "FOR" OncoGenex Proposal No. 3 to approve the amendment to the certificate of incorporation of OncoGenex to change the name of "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc."; and "FOR" OncoGenex Proposal No. 4 to adjourn the OncoGenex special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of OncoGenex Proposal Nos. 1, 2 and 3 in accordance with the recommendation of the OncoGenex board of directors.

OncoGenex stockholders of record, other than those OncoGenex stockholders who have executed support agreements, may change their vote at any time before their proxy is voted at the OncoGenex special meeting in one of three ways. First, a stockholder of record of OncoGenex can send a written notice to the Secretary of OncoGenex stating that the stockholder would like to revoke its proxy. Second, a stockholder of record of OncoGenex can submit new proxy instructions either on a new proxy card or via the Internet. Third, a stockholder of record of OncoGenex can attend the OncoGenex special meeting and vote in person. Attendance alone will not revoke a proxy. If an OncoGenex stockholder of record or a stockholder who owns OncoGenex shares in "street name" has instructed a broker to vote its shares of OncoGenex common stock, the stockholder must follow directions received from its broker to change those instructions.

Required Vote

The presence, in person or represented by proxy, at the OncoGenex special meeting of the holders of a majority of the shares of OncoGenex common stock outstanding and entitled to vote at the OncoGenex special meeting is necessary to constitute a quorum at the meeting. Abstentions and broker non-votes will be counted towards a quorum. Approval of OncoGenex Proposal Nos. 1 and 4 requires the affirmative vote of the holders of a majority of the shares of OncoGenex common stock properly cast at the OncoGenex special meeting. Approval of OncoGenex Proposal Nos. 2 and 3 requires the affirmative vote of holders of a majority of the OncoGenex common stock outstanding on the record date for the OncoGenex special meeting. **Each of Proposal Nos. 1, 2 and 3 are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of Proposal Nos. 1, 2 and 3.**

Votes will be counted by the inspector of election appointed for the meeting, who will separately count "FOR" and "AGAINST" votes, abstentions and broker non-votes. Abstentions and broker non-votes will not be counted towards the vote total for each proposal and, accordingly, will have no effect on the outcome of OncoGenex Proposal Nos. 1 and 4 and will have the same effect as a vote "AGAINST" OncoGenex Proposal Nos. 2 and 3. OncoGenex Proposal Nos. 2, 3 and 4 are matters on which a broker or other nominee are generally empowered to vote, and therefore, limited or no broker non-votes are expected with respect to those proposals.

As of December 31, 2016, the directors and executive officers of OncoGenex owned 1.0% of the outstanding shares of OncoGenex common stock entitled to vote at the OncoGenex special meeting. The directors and executive officers of OncoGenex owning these shares are subject to support agreements. Each stockholder that entered into a support agreement has agreed to vote all shares of OncoGenex common stock owned by him or her as of the record date in favor of the approval of the Merger Agreement, the issuance of OncoGenex common stock in the first merger pursuant to the Merger Agreement, approval of the reverse stock split, the approval of any proposal to adjourn or postpone any meeting to a later date, if there are not sufficient votes for the approval of any of the foregoing on the date on which such meeting is held, and any other proposal included in this proxy statement/prospectus/information statement in connection with or related to the consummation of the merger that

the OncoGenex board of directors has recommended that the OncoGenex stockholders vote in favor of, and against any other acquisition proposal. As of December 31, 2016, OncoGenex is not aware of any affiliate of Achieve owning any shares of OncoGenex common stock entitled to vote at the OncoGenex special meeting.

Solicitation of Proxies

In addition to solicitation by mail, the directors, officers, employees and agents of OncoGenex may solicit proxies from OncoGenex stockholders by personal interview, telephone, telegram, email or otherwise. OncoGenex will pay the costs of printing and filing this proxy statement/prospectus/information statement and proxy card. Arrangements will also be made with brokerage firms and other custodians, nominees and fiduciaries who are record holders of OncoGenex common stock for the forwarding of solicitation materials to the beneficial owners of OncoGenex common stock. OncoGenex will reimburse these brokers, custodians, nominees and fiduciaries for the reasonable out-of-pocket expenses they incur in connection with the forwarding of solicitation materials. OncoGnex has engaged The Proxy Advisory Group, LLC to assist in the solicitation of proxies and provide related advice and informational support, for a service fee, plus customary disbursements, which are not expected to exceed $25,000 in total.

Other Matters

As of the date of this proxy statement/prospectus/information statement, the OncoGenex board of directors does not know of any business to be presented at the OncoGenex special meeting other than as set forth in the notice accompanying this proxy statement/prospectus/information statement. If any other matters should properly come before the OncoGenex special meeting, it is intended that the shares represented by proxies will be voted with respect to such matters in accordance with the judgment of the persons voting the proxies.

THE MERGER

This section entitled "The Merger Agreement" describes the material aspects of the merger, including the Merger Agreement. While OncoGenex and Achieve believe that this description covers the material terms of the merger and the Merger Agreement, it may not contain all of the information that is important to you. You should read carefully this entire proxy statement/prospectus/information statement for a more complete understanding of the merger and the Merger Agreement, including the Merger Agreement, and the other documents to which you are referred herein. See the section entitled "Where You Can Find More Information."

Background of the Merger

OncoGenex Background of the Merger

The OncoGenex board of directors and executive management team regularly review OncoGenex's strategic outlook and operating plans, both near-term and long-term, including various strategic alternatives in an effort to enhance stockholder value. These reviews and discussions have, at various times, focused on the opportunities and risks associated with OncoGenex's business and financial condition; ongoing development activities associated with OncoGenex's product candidates custirsen and apatorsen, including regular review of projected timelines and costs to conclude development activities; assessment of strategic alternatives, including scenarios where one or more of OncoGenex's ongoing clinical trials, including the phase 3 trials (Synergy, Affinity and Enspirit) for custirsen and the phase 2 trial (Borealis-2) for apatorsen, are negative or OncoGenex's partnership with Teva Pharmaceutical Industries Ltd., or Teva, for the development of custirsen is terminated; and evaluation of existing strategic relationships, potential partnering opportunities and other strategic alternatives and options. In connection with such ongoing strategic review, OncoGenex engaged MTS Health Partners, L.P., or MTS Health Partners, on February 12, 2015, to advise on strategic alternatives, including potential acquisitions by OncoGenex, acquisitions of OncoGenex and other strategic transactions, in order to maximize stockholder value.

On December 1, 2015, OncoGenex issued a press release announcing that the Affinity trial did not meet the first co-primary endpoint of extending survival in poor prognostic patients. Subsequent to such announcement, OncoGenex began receiving inbound inquiries regarding potential strategic transactions, including reverse mergers pursuant to which a wholly owned subsidiary of OncoGenex would merge with and into a third party, with the third party surviving as a wholly owned subsidiary of OncoGenex.

On December 4, 2015, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, a long-time consultant to OncoGenex who assists OncoGenex with business development matters, and representatives of Fenwick & West LLP, or Fenwick, outside legal counsel to OncoGenex. At such meeting, the board of directors together with executive management discussed the various strategic alternatives available to OncoGenex in light of the previous failure of OncoGenex's Synergy trial to demonstrate a survival benefit of custirsen in combination with first-line docetaxel treatment for patients with metastatic castrate resistant prostate cancer, mCRPC, the termination of the collaboration arrangement with Teva for custirsen, under which Teva had agreed to fund clinical trials for custirsen, the recent failure of the Affinity trial to meet the first co-primary endpoint of extending survival in poor prognostic patients with second-line cabazitaxel treatment for mCRPC, the current status of OncoGenex's ongoing Affinity (second co-primary endpoint) and Enspirit trials for custirsen and Borealis-2 clinical trial for apatorsen, including the need to balance the costs of such ongoing clinical trials with the opportunity for potential value creation if such trials were successful, and the lack of viable alternatives to acquire or license additional product candidates. As a result of such discussions, the board of directors authorized executive management to begin preparing to explore potential strategic transactions, including a potential acquisition of OncoGenex if such clinical trials were not successful.

On January 26, 2016, the OncoGenex board of directors held a meeting where the board of directors and executive management continued to evaluate potential strategic opportunities available to OncoGenex, including continuing the development of custirsen and/or apatorsen, pursing a strategic transaction and liquidation of the company.

On February 14, 2016, Ms. Stewart Parker, a member of the board of directors of OncoGenex, received an email from Mr. Richard Stewart of Achieve indicating that Achieve's board of directors was seeking a reverse merger vehicle to advance their smoking cessation product candidate, cytisine. In response to Mr. Stewart's email, Ms. Parker suggested that Mr. Stewart contact Mr. Cormack, the Chief Executive Officer of OncoGenex, to further discuss a potential strategic transaction. On February 16, 2016, Mr. Cormack and Mr. Stewart discussed the circumstances of the two companies, and Mr. Stewart provided an overview of Achieve's business. Mr. Cormack also noted that while OncoGenex's product candidates continued to be developed, OncoGenex was interested in exploring potential strategic transactions that could increase stockholder value and that the two companies should enter into a mutual confidentiality agreement to allow further discussions to proceed. On February 19, 2016, a mutual confidentiality agreement between OncoGenex and Ricanto Limited, a related party of Achieve, was executed.

On February 22, 2016, Mr. Cormack received an inbound call from a specialized investor relations company in the life sciences space, indicating that they had private company clients that may be interested in a potential strategic transaction with OncoGenex. Following discussions with Mr. Cormack about the strategic objectives of these private companies, two principal candidates for a potential strategic transaction were identified by the specialized finance company, one of which was Company A.

On March 3, 2016, members of Company A's management held a telephonic meeting with members of OncoGenex's executive management to provide a non-confidential overview of Company A's business and product candidates and to discuss a potential strategic transaction involving OncoGenex and Company A. As of such date, Company A was a biotechnology company conducting an early-stage clinical trial with its lead asset and preclinical studies in other development programs.

On March 10, 2016, Company A indicated that they would not continue to engage in strategic transaction discussions given that OncoGenex's phase 3 clinical trials still had near-term data events and the potential impact positive results in those clinical trials could have on strategic discussions with Company A.

On April 1, 2016, Mr. Cormack received an inbound call from an investment banking firm that had a client, or Company B, that was interested in exploring a potential strategic transaction with OncoGenex and querying OncoGenex's interest in exploring such an opportunity. Following the call, a non-confidential management presentation from Company B was provided to Mr. Cormack for review. On May 17, 2016, a mutual confidentiality agreement between OncoGenex and Company B was executed

On April 1, 2016, Mr. Cormack, Ms. Griffin and Mr. Stewart of Achieve, held an initial diligence call during which a discussion regarding OncoGenex business operations and the amount of cash OncoGenex expected to have at the time the Enspirit data and Affinity data was expected to be available. Mr. Cormack and Mr. Stewart discussed that it would be appropriate to continue to conduct bilateral diligence while OncoGenex awaited data from its ongoing phase 3 clinical trials.

During the period from April 1, 2016 and August 16, 2016, representatives of OncoGenex and Achieve conducted internal diligence and reviewed scientific publications regarding each company's product candidates but did not advance additional discussions.

On April 28, 2016, an independent recruiter contacted Ms. Griffin to discuss a potential board opportunity at a newly formed private company, or Company C.

On May 5, 2016, and in furtherance of OncoGenex's ongoing review of strategic alternatives, Mr. Cormack established an internal diligence team consisting of the executive management of OncoGenex, which included, finance, marketing, intellectual property, clinical, regulatory and manufacturing personnel, and a weekly meeting process to efficiently evaluate potential strategic opportunities.

On May 12, 2016, Ms. Griffin spoke with the lead investor of Company C and, during the discussion, the lead investor and Ms. Griffin determined that many of Company C's needs could be met with expertise within OncoGenex. Company C's lead investor agreed that a combination of OncoGenex and Company C could be of value and the parties entered into a mutual confidentiality agreement on May 17, 2016.

From May 17, 2016 through June 20, 2016, each of Company C and OncoGenex conducted initial due diligence review with respect to the other.

On May 26, 2016, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, and representatives of Fenwick. During the meeting, executive management updated the board of directors on the current status of each of the Affinity, Enspirit and Borealis-2 clinical trials, and the board of directors and executive management explored the strategic alternatives available to OncoGenex and the potential consequences of various events, including both positive and negative results for each of the Affinity and Enspirit clinical trials for custirsen and the Borealis-2 clinical trial for apatorsen, including potentially entering into partnering arrangements for the development of apatorsen if Borealis-2 returned positive data.

On May 31, 2016, OncoGenex and Company B held a teleconference where each party presented an overview of its company.

On June 20, 2016, the OncoGenex executive management team (Mr. Cormack, Dr. Jacobs, Dr. Stewart, Mr. Bencich), together with Ms. Griffin, presented OncoGenex's business overview to Company C and Company C reciprocated. During the period from June 20, 2016 until July 14, 2016, OncoGenex executive management conducted substantive diligence related to the business of Company C, including an assessment of the current treatment paradigms available to patients intended to be addressed by Company C's product candidates, the number of estimated patients that could be treated, evaluation of Company C's intellectual property portfolio and assessment of their licenses from university institutions, assessment of the feasibility of manufacturing to supply product for clinical materials and for commercial supply. Also during this period, the respective management teams and financial advisors discussed the business terms for a potential business combination.

On June 30, 2016, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, and representatives of Fenwick. During the meeting, Mr. Cormack provided an update on the status of discussions with Company B and Company C. Mr. Cormack informed the board of directors that Company B was conducting its own process, and that such process could extend for a number of additional months, and that OncoGenex had not had further contact with Company B since May 31, 2016. With respect to Company C, Mr. Cormack informed the board of directors that the due diligence process was continuing, with concurrent negotiations of terms of a potential business combination.

On July 14, 2016, at a meeting of the OncoGenex board of directors, members of OncoGenex executive management (Mr. Cormack, Mr. Bencich and Dr. Jacobs), together with Ms. Griffin, provided an update to the OncoGenex board of directors regarding the status of diligence and negotiations with Company C, including the status of ongoing negotiations with Company C regarding an adjustment to OncoGenex's valuation in any strategic transaction upon positive results from one or more of OncoGenex's ongoing clinical trials. Additionally, Mr. Cormack informed the board of directors that Company C had stated that it would require a termination fee of no less than $10 million if OncoGenex terminated any proposed strategic transaction with Company C after the receipt of positive clinical data. In deliberating over the terms negotiated to date, the OncoGenex board of directors considered that if the clinical data from either or both of custirsen and/or apatorsen was negative, the stock price would be negatively affected and achieving a valuation similar to the potential transaction with Company C could be difficult to obtain in the future. The board of directors also discussed that in waiting on the clinical data, OncoGenex would be utilizing additional cash in its operations making the company potentially less appealing as a potential reverse merger candidate. Also presented during the meeting was an update on the status

of the ongoing strategic transaction process with other third parties that had reached out to OncoGenex. Such process included 11 companies with whom OncoGenex was in discussions, including Company B, with whom OncoGenex had begun a mutual due diligence process, and Company C, with whom OncoGenex had begun preliminary negotiations. Additionally, executive management updated the board of directors on its ongoing efforts to find a partnering arrangement for apatorsen and noted that the majority of third parties with which it had discussed a potential partnering transaction had deferred a decision pending the release of data from the Borealis-2 clinical trial.

On July 21, 2016, Company C and OncoGenex management teams met in person in an effort to agree to terms for a reverse merger of OncoGenex. Given the potential impact on OncoGenex's valuation that could be caused by positive clinical data for one or more of OncoGenex's ongoing clinical trials, the parties were unable to find a mutually agreeable valuation model and discussions ceased.

On August 15, 2016, OncoGenex's executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, received the unblinded second co-primary endpoint results from the Affinity trial. The Affinity trial did not meet the final co-primary endpoint of demonstrating a statistically significant improvement in overall survival for patients treated with custirsen in combination with cabazitaxel/prednisone compared to cabazitaxel/prednisone alone.

Also on August 15, 2016, the OncoGenex board of directors met with the OncoGenex executive management team (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, to review the Affinity clinical trial results. Upon learning that the Affinity trial did not meet the primary endpoint, the board of directors authorized OncoGenex executive management to proceed with plans to conduct an early analysis of the Enspirit trial and, prior to such early analysis, to hold a type A meeting with the FDA to ensure that the study results could be used to support a New Drug Application in the event that the trial is positive. The OncoGenex board of directors then discussed the remaining clinical trials for which data was expected, the timing of these data events and the general timeline expected to complete a potential strategic transaction. It was determined that waiting until all data events were completed would position the company with limited cash, which could negatively impact the valuation of OncoGenex in any potential strategic transaction. The board of directors then engaged in a detailed discussion of the relative merits and risks of preceding with a clinical development plan for apatorsen in bladder cancer, including the potential financial impact, the likelihood of the treatment landscape continuing to evolve with the addition of new immune-oncology products, potential financing and capital needs of OncoGenex to fund the development plan, the development status of competitive products, the status of the company's manufacturing capabilities and related operational matters. Following such discussions, the OncoGenex board of directors determined to prioritize the exploration and evaluation of a potential strategic transaction and directed OncoGenex executive management to formally initiate a process to evaluate and pursue strategic alternatives, to determine the landscape for a potential strategic partner and what transaction terms may be available to OncoGenex. The board of directors also instructed executive management to formally announce such strategic process in the press release announcing the results of the Affinity clinical trial in order to garner the most attention from prospective parties interested in a strategic transaction.

On August 16, 2016, OncoGenex announced the results from the Phase 3 Affinity trial of custirsen and announced that it had engaged MTS Health Partners as its financial advisor to assist with the exploration of strategic alternatives. On August 16, 2016, the share price of OncoGenex's common stock closed at $0.53 per share, as compared to $0.90 per share at the close of market on the trading day preceding the public announcement.

As described in further detail below, between August 2016 and January 2017, OncoGenex and MTS Health Partners conducted a formal process of identifying and evaluating potential strategic transactions. The initial list of potential parties to a possible strategic transaction was created by MTS Health Partners, in consultation with OncoGenex executive management, and was based upon MTS Health Partners' experience in financial advisory services, MTS Health Partners' knowledge of the life sciences marketplace, relationships that MTS Health

Partners had developed with companies through prior engagements, existing relationships between OncoGenex executive management and other companies and certain identified companies known to have an interest in similar transactions, including companies that had previously reached out to OncoGenex regarding similar strategic transactions. Additional companies were evaluated based on inbound calls from third parties after OncoGenex's announcement of the Affinity clinical trial results and the commencement of a strategic process on August 16, 2016. More than 70 companies were contacted during this strategic outreach process. A subset of these companies expressed interest and 13 submitted non-binding proposals that were further evaluated. During the course of this process, substantially all of the parties with whom MTS Health Partners and OncoGenex had discussions were interested in pursuing only a reverse merger transaction and no viable strategic partners expressed an interest in acquiring custirsen, apatorsen or any of OncoGenex's other assets. As a result, MTS Health Partners, the OncoGenex board of directors and executive management primarily focused on a reverse merger transaction to maximize stockholder value.

In evaluating potential counterparties, OncoGenex utilized a broad set of criteria, which focused on a range of attributes and characteristics of such parties, including the terms proposed by such parties for a potential strategic transaction. This set of criteria included, but was not limited to: (i) the proposed valuation of the strategic counterparty and OncoGenex in the proposed transaction, (ii) the anticipated relative ownership of the combined entity immediately following the consummation of any proposed transaction by OncoGenex's pre-combination stockholders, (iii) the depth of product pipeline and stage of development of the counterparty, (iv) the risks relating to clinical success of product candidates and operational risks, (v) the market opportunity for products, (vi) the anticipated scope and timing of development and commercialization milestones, (vii) the management team's experience, (viii) the support of high quality investors, (ix) the sufficiency of financial resources to achieve potentially meaningful milestones, either through resources to be obtained through financing activities consummated prior to the effectiveness of a combination with OncoGenex or through the resources that would result from a combination with OncoGenex, (x) the valuation estimate and prospects for the company and (xi) the ability to expeditiously consummate a transaction with OncoGenex and risks related thereto. OncoGenex also requested information from each potential strategic partner as to its interest in continuing the development of apatorsen, or providing OncoGenex stockholders with a contingent value right for consideration received for partnering or selling apatorsen.

Also on August 16, 2016, Mr. Stewart of Achieve provided a letter of intent outlining a proposed merger between Achieve and OncoGenex, including a proposed exchange ratio and management structure, together with a draft term sheet for a concurrent investment in the combined company.

On August 17, 2016, Mr. Cormack acknowledged receipt of the proposal and advised Mr. Stewart that per the press release issued on August 16, 2016, OncoGenex was running a formal process to evaluate its strategic alternatives and that it had engaged MTS Health Partners to facilitate that process. Mr. Cormack copied a representative of MTS Health Partners and suggested that Mr. Stewart and the MTS Health Partners representative connect directly to ensure that Achieve is appropriately considered in the process being undertaken by OncoGenex.

On August 19, 2016, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, and representatives of Fenwick. During the meeting, at the request of the board of directors, the executive management team reviewed the timing and costs associated with developing apatorsen for use in non-muscle invasive bladder cancer, which would exceed $40 million. Given the stock price of OncoGenex at that time, it was determined that raising additional capital for the development program was not feasible. The board of directors and executive management then reviewed the merger process, guided by input from representatives of MTS Health Partners and Fenwick, to better understand timing and process. The board of directors confirmed to executive management that it should continue to take appropriate steps to accelerate Enspirit results. The board of directors and executive management then focused discussions on scenarios if Enspirit were also negative. Following discussion, it was determined that if Enspirit is negative, then the executive management would

(i) immediately terminate those positions that are not required for the wind down process of current trials and operations, or for a strategic transaction, (ii) identify and retain key employees required for operating a public company during such potential strategic transaction process, and (iii) provide work plan deliverables and termination dates for remaining staff and consultants.

Also on August 19, 2016, OncoGenex and Achieve executed a new mutual confidentiality agreement, which included a stand-still provision that was not included in the mutual confidentiality agreement executed on February 19, 2016 between OncoGenex and Ricanto Limited, a related party of Achieve.

On August 23, 2016, OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, met with the management of Company B and a representative of its financial advisor. During the meeting, Company B presented their scientific platform, key deliverables timeline, intellectual property overview and an overview of their three-year budget and capital requirements.

On September 6, 2016, OncoGenex and Company C executed a mutual confidentiality agreement.

On September 9, 2016, Mr. Cormack contacted a representative of Company A's financial advisor to explore Company A's potential interest in continuing previous discussions regarding a strategic transaction. Company A's financial advisor representative contacted the Company A chief executive officer in the days following the call with Mr. Cormack and, on September 12, 2016, Company A and OncoGenex executed a mutual confidentiality agreement.

Also on September 9, 2016, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, and representatives of Fenwick. Mr. Cormack provided an overview of the status of the strategic transaction process indicating that 112 companies had been reviewed to date with 17 mutual confidentiality agreements signed and 10 management presentations completed. Additionally, four new mutual confidentiality agreements were being negotiated. Mr. Cormack then advised the board of directors that OncoGenex intended to invite select companies, to be determined using the previously discussed criteria for evaluating potential counterparties, to submit non-binding proposals by September 27, 2016.

On September 13, 2016, the Chief Executive Officer and Chief Scientific Officer of Achieve presented their corporate overview to OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, with representatives of MTS Health Partners present.

On September 15, 2016, the Chief Executive Officer and Chief Financial Officer of Company C presented their corporate overview to the OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, with representatives of MTS Health Partners present.

On September 16, 2016, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, and representatives of Fenwick. Mr. Cormack provided an overview of the status of the strategic transaction process indicating that 114 companies had been reviewed to date with 22 mutual confidentiality agreements signed and 18 management presentations completed. Additionally, five new mutual confidentiality agreements were being negotiated. Based on initial diligence and discussions, and the previously discussed criteria to evaluate potential counterparties, Mr. Cormack indicated that that MTS Health Partners anticipated inviting 12 of those companies to submit non-binding proposals.

On September 22, 2016, the Chief Executive Officer of Company A presented their corporate overview to OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, with representatives of MTS Health Partners present.

On September 23, 2016, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, and representatives of Fenwick. Mr. Cormack provided an overview of the status of the strategic transaction process, indicating that 115 companies had been reviewed to date with 27 mutual confidentiality agreements signed and 19 management presentations completed. Of the 19 companies that had presented management presentations, MTS Health Partners invited 16 companies to submit non-binding proposals by September 27, 2016. The invitations to submit non-binding proposals requested that each party address certain matters in their non-binding proposal, including, among others, the anticipated ownership of the combined entity expected to be held by OncoGenex's pre-combination stockholders, the post-closing funding needs of the combined entity, any concurrent financing plans, the anticipated total number of board seats of the combined entity and the number of such seats that are expected to be filled by such party and by OncoGenex and any assumptions regarding OncoGenex's net cash at closing.

On September 27, 2016, MTS Health Partners forwarded 13 proposals to the board of directors and executive management for review and consideration.

On September 28, 2016, the OncoGenex board of directors held a meeting with members of OncoGenex executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, and representatives of Fenwick and MTS Health Partners. During such meeting, the board of directors and executive management of OncoGenex selected nine companies that would be invited to present their proposals for a potential strategic transaction directly to the board of directors and executive management.

On October 5, 2016 and October 6, 2016, the OncoGenex board of directors held a meeting in Seattle, Washington together with members of OncoGenex's executive management (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), Ms. Griffin, and representatives of Fenwick and MTS Health Partners. During these two days, all nine invited companies presented to the board of directors and management with Achieve and Company B and two other companies presenting on October 5, 2016 and Company A and four others, one of which was Company D, presenting on October 6, 2016. At the conclusion of this process, based on OncoGenex's criteria for evaluating potential counterparties, the board of directors narrowed the number of ongoing participants in OncoGenex's strategic process to three companies, Achieve, Company A and Company D, and instituted a standing weekly update call with executive management to help ensure they were kept appraised of ongoing developments regarding potential strategic transactions. Such weekly update calls began on October 21, 2016 and continued for the balance of 2016.

On October 10, 2016, Mr. Cormack separately contacted the Chief Executive Officers of Achieve and Company A and advised them that they had been selected to continue on in the strategic process and that OncoGenex wished to undertake full diligence and begin negotiations of transaction documents and terms.

On October 11, 2016, Mr. Cormack contacted the Chief Executive Officer of Company D and advised him that they had been selected to continue on in the process and that OncoGenex wished to undertake full diligence and begin negotiations of transaction documents and terms.

On October 12, 2016, the OncoGenex executive management team (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, received the unblinded clinical trial results from the Enspirit trial. The Enspirit trial did not meet the primary endpoint of extending survival in patients with non-small cell lung cancer. Also on October 12, 2016, the OncoGenex board of directors met with the OncoGenex executive management team (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, to review the Enspirit clinical trial results.

Also on October 12, 2016, Achieve granted access to its electronic data room to Mr. Cormack, Ms. Griffin, Ms. Welch, Mr. Bencich, Dr. Stewart and representatives of Fenwick and MTS Health Partners.

On October 13, 2016, OncoGenex announced the results from the Enspirit trial. The share price of OncoGenex's common stock closed at $0.40 per share, as compared to $0.45 per share at the close of market on the trading day preceding the public announcement.

On each of October 17, 19, 24, 25, 26 and 27, 2016 detailed due diligence calls were held with Company A and its representatives, including third party key opinion leaders, assessing clinical programs and related regulatory opportunities and risks, manufacturing, human resource and financial operations, intellectual property and related risks, and commercial opportunities.

On each of October 18, 19, 24 and 26, 2016 detailed due diligence calls were held with Achieve and its representatives, including third party key opinion leaders, assessing clinical programs and related regulatory opportunities and risks, manufacturing, human resource and financial operations, intellectual property and related risks, and commercial opportunities.

On each of October 20, 21, 26, 27 and 28, 2016 detailed due diligence calls were held with Company D and its representatives, including third party key opinion leaders, assessing clinical programs and related regulatory opportunities and risks, manufacturing, human resource and financial operations, intellectual property and related risks, and commercial opportunities.

On October 20, 2016, OncoGenex executive management provided draft acquisition agreements to each of Achieve, Company A and Company D for review and discussion.

On October 22, 2016, the OncoGenex board of directors held a meeting at which executive management updated the board of directors on the status of the Borealis-2 clinical trial and the status of ongoing due diligence efforts with each of Achieve, Company A and Company D.

On October 24, 2016, the OncoGenex executive management team (Mr. Cormack, Mr. Bencich, Dr. Jacobs, Dr. Stewart and Ms. Welch), together with Ms. Griffin, received the unblinded clinical trial results from the Borealis-2 trial. The Borealis-2 trial met the survival primary endpoint of demonstrating a statistically significant improvement in survival as defined in the protocol. Also on October 24, 2016, Mr. Cormack sent the OncoGenex board of directors an e-mail informing them of the results of the Borealis-2 clinical trial.

On October 25, 2016, OncoGenex announced the results from the Borealis-2 trial and committed to a restructuring of a portion of the Company's workforce in order to preserve the Company's resources as it determined future strategic plans. The share price of OncoGenex's stock closed at $0.55 per share on October 26, 2016, as compared to $0.37 per share at the close of market on the trading day preceding the public announcement. OncoGenex executive management began scheduling meetings with multiple companies to review the apatorsen data set and discuss potential partnership opportunities.

On October 26, 2016, OncoGenex received preliminary comments on its form acquisition agreement from Achieve, which noted that the agreement had not yet been reviewed by its outside legal counsel.

Following detailed diligence, OncoGenex executive management determined that the risks associated with Company D's clinical and regulatory strategy outweighed the potential benefit of time and size of the commercial opportunity for Company D's product candidates and made the recommendation to the board of directors on October 28, 2016 that Company D be withdrawn from the process due to the assessment that their pipeline held a higher level of risk than the other companies in the process.

On October 28, 2016, the OncoGenex board of directors held a meeting at which executive management provided the board of directors a detailed review of the Borealis-2 data and updated the board of directors on the ongoing efforts to enter into a potential strategic transaction with each of Achieve, Company A and Company D, including ongoing due diligence and planned site visits with each of Achieve, Company A and Company D.

Executive management provided the board of directors with an overview of the proposed terms offered by each of Achieve, Company A and Company D, including the fact that Achieve was willing to include contingent value rights for apatorsen, Company A was resistant to, but willing to discuss, contingent value rights and Company D was not willing to include contingent value rights. Executive management also provided an overview of the existing assets and liabilities of Achieve, Company A and Company D, as well as the complexity of each of the proposed deal structures. Company D proposed the most complex deal structure, whereas the deal structures proposed by Achieve and Company A were less complex. Based upon further discussions with executive management regarding due diligence, its evaluation of the product candidates and relative strength of the intellectual property assets of each of Achieve, Company A and Company D, the projected timeline of clinical trials for Achieve's, Company A's and Company D's product candidates, the proposed terms offered by each of Achieve, Company A and Company D, executive management's recommendation regarding the risks associated with Company D's product candidate and the advice of OncoGenex's outside legal and financial advisors, the board of directors authorized executive management to continue pursuing a strategic transaction with each of Company A and Achieve and to inform Company D that OncoGenex was ceasing activity on a potential strategic transaction with Company D.

On October 31, 2016 and November 1, 2016, in connection with OncoGenex's ongoing due diligence of Achieve, Tom Hayes, Ph.D. (OncoGenex's Senior Director, CMC Operations) and an outside quality expert conducted site visits at the API and DP operations of Sopharma, the sole supplier of cytisine to Achieve, as well as visiting the orchards from which cytisine was sourced.

On November 1, 2016, Mr. Cormack, Mr. Bencich and Ms. Griffin met with Company A management to discuss the proposed timeline associated with a potential strategic transaction. The parties also had dinner that evening with certain members of the Company A board of directors. On November 2, 2016, Mr. Cormack, Mr. Bencich and Ms. Griffin had dinner with Company A management and discussed human resources and clinical and regulatory operations. On November 3 and 4, 2016, Mr. Cormack, Mr. Bencich, Ms. Griffin and Dr. Hayes, along with an outside quality expert, conducted site visits at Company A's manufacturing and process development facilities.

Additionally, on November 3, 2016, Mr. Cormack, Mr. Bencich and Ms. Griffin met with the management team and financial advisors from Company A after completing the site visit for that day. The Company A financial advisor presented a revised proposal that provided that Company A's cash balance at closing would be approximately $13 million less than in the original proposal received from Company A on October 27, 2016 as Company A was no longer confident it would be able to close a financing concurrently with the closing of its proposed strategic transaction with OncoGenex. Although they anticipated a lower cash balance, Company A maintained the ownership split of the post-closing combined Company between pre-closing OncoGenex stockholders and pre-closing Company A stockholders as originally proposed. Furthermore, the Company A financial advisor also proposed that OncoGenex's valuation be equal to twice its cash balance at closing, which, based upon then current projections of OncoGenex's cash position at closing would effectively reduce OncoGenex's valuation by approximately $10 million. Lastly, the Company A financial advisor suggested that Company A may not provide a contingent value right for apatorsen in connection with the proposed transaction.

On November 10, 2016 a representative of OncoGenex and Achieve held a call and discussed the likelihood of completing a transaction and the costs to pursue such a transaction. During such discussion, Achieve's Chief Executive Officer noted that he was unwilling to engage outside legal counsel unless the parties entered into an exclusively agreement. OncoGenex explained that it would be unable to enter into a period of exclusivity at that time. The parties agreed to consider other alternatives that could address both parties' issues and concerns.

Also on November 10, 2016, OncoGenex received a proposed form of agreement from Company A's counsel to review. During November 2016, multiple calls were held between representatives of the parties regarding diligence, financial forecasts, the terms of the agreement, timing and other open issues.

On November 11, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. During the call, Mr. Cormack advised that Company D had been notified that they had been withdrawn from the process. Mr. Cormack also relayed the results from the Company A site visit and that the Company A financial advisor representative had presented revised terms on November 3, 2016, including (i) that Company A was no longer confident that it would have its proposed financing in place in time for the closing of the potential strategic transaction with OncoGenex, which would result in Company A having approximately $13 million less at closing, (ii) a reduction in OncoGenex's relative value in the proposed strategic transaction by approximately $10 million and (iii) that there would be no contingent value rights for apatorsen. Mr. Cormack then advised that based upon further discussions with Company A after the November 3, 2016 meeting, that Company A had agreed to their relative ownership of the combined company being adjusted downward by up to 10% depending upon how much capital Company A was able to raise prior to closing. Mr. Cormack also noted that OncoGenex and Company A had not reached agreement on valuation and the relative ownership of the post-closing combined companies, and that further discussion was necessary on these points. Mr. Cormack also advised that Company A now appeared to be open to the idea of a contingent value right for apatorsen, though specific terms needed to be agreed to. The board of directors then discussed the transaction timeline and expressed concern that the continuing passage of time would result in OncoGenex having less cash at closing, which in turn could erode the value OncoGenex's stockholders would receive in any strategic transaction. Mr. Cormack then advised the board of directors that since Company D was no longer engaged in the process, Mr. Cormack had re-engaged Company B. Mr. Cormack reported that both parties were actively engaged in ongoing diligence and that a call with Company B's Chief Executive Officer was scheduled for November 12, 2016 to review issues.

Mr. Cormack also reported on the manufacturing site visit for Achieve and that no major issues were identified. Mr. Cormack advised that both Achieve and Sopharma appeared willing to enter into an amended and restated supply agreement to clarify certain ambiguities in the existing agreement between Achieve and Sopharma, including the exclusivity of Sopharma's obligation to supply Achieve with cytisine and terms relating to Achieve's rights in the event of Sopharma's failure to supply cytisine. The amended and restated supply agreement will provide that Sopharma will not supply cytisine to any other person or entity for use or sale in any territories except for mainly those in Eastern Europe and part of North Africa, that Achieve has full access to the cytisine supply chain, and that Sopharma will manufacture sufficient cytisine to meet a forecast for a specified demand of cytisine for a specified period of time, each to be mutually agreed upon by the parties. Mr. Cormack also advised the board of directors that Achieve was highly concerned about incurring substantial legal and audit costs in the absence of exclusivity with OncoGenex. The board of directors and executive management discussed at length the fiduciary challenges of entering into an exclusivity agreement with Achieve, particularly at this stage in the process. The board of directors determined that until a transaction agreement was well advanced and an understanding of any key economic and business issues was obtained, entering into an exclusivity agreement with Achieve would not be in the best interests of OncoGenex or its stockholders. Mr. Cormack reminded the board of directors that Achieve did not have a positive net cash balance and that all legal and accounting costs would need to come from Achieve's existing investors. To bridge the gap, executive management proposed offering Achieve a letter agreement that would provide that OncoGenex would bear the cost of up to $200,000 of certain of Achieve's out of pocket legal expenses if a transaction agreement between OncoGenex and Achieve was not executed. Mr. Cormack advised that in his opinion, this should enable Achieve to mitigate their financial risk and also mitigate OncoGenex's risk in the event a transaction could not be completed with Company A. He expressed the importance of advancing multiple parties simultaneously so that time is not lost in the event a particular transaction loses momentum. Following substantial discussion, and consulting representatives of Fenwick on the issue, the board of directors authorized executive management to offer a letter agreement to Achieve to reimburse Achieve for up to $200,000 of certain out of pocket legal expenses in the event that a transaction agreement between the two companies was not executed.

Finally, Mr. Cormack advised the board of directors that the ancillary agreements to the transaction agreement, including a draft support agreement, lock-up agreement and contingent value rights agreement had been drafted and would be provided to Achieve and Company A upon receipt by OncoGenex of comments to its draft transaction agreement.

Later on November 11, 2016, OncoGenex proposed in a letter agreement to reimburse Achieve for up to $200,000 of certain out-of-pocket expenses if the parties were unable to reach an agreement on a strategic transaction.

Also on November 11, 2016, a representative from Company B's financial advisor requested to receive OncoGenex's form of transaction agreement. Mr. Cormack provided the draft transaction agreement later that day.

On November 18, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. During the call, Mr. Cormack advised the board of directors that the form of transaction agreement received from Company A would require substantial negotiations and material revisions. Mr. Cormack advised the board of directors of the intent to return to Company A later that day, the revised transaction agreement, the contingent value rights agreement, support agreement and lock up agreement. Mr. Cormack reported on the open issues in the transaction agreement, which included agreement on the exchange ratio and overall economics and any adjustments due to pre-closing financings by Company A; the economics related to the contingent value rights for apatorsen; deal certainty; and the termination fee. Mr. Cormack also reported the likelihood that the transaction agreement would not be entered into until near year end given the extensive changes in the transaction agreement and associated issues that had arisen.

Mr. Cormack also reported on the status of discussions with Achieve. He advised the board of directors that Achieve did not accept the proposed letter agreement that provided that OncoGenex would reimburse Achieve for up to $200,000 of certain out of pocket legal costs in the event that a transaction agreement between the two companies was not executed. Rather, Mr. Cormack advised that Achieve countered with a request that OncoGenex also pay their out-of-pocket audit expenses, make the letter non-conditional on closing a transaction with a third party other than Achieve and that OncoGenex assume direct billing of their expenses during the transaction agreement drafting process. Mr. Cormack advised that this counter was rejected by OncoGenex.

Later on November 18, 2016, OncoGenex's legal counsel provided comments to the proposed draft transaction agreement to Company A and its outside counsel.

On November 21, 2016, members of the executive management team of OncoGenex (Mr. Cormack, Dr. Jacobs and Dr. Stewart) met with a Japanese pharmaceutical company to discuss apatorsen. Following the meeting, the pharmaceutical company, like other companies with which OncoGenex executive management had discussed potential partnering arrangements for apatorsen, indicated that while the data for apatorsen was interesting, they would need to see the survival data from Borealis-2 in order to fully assess the opportunity.

Also on November 21, 2016, Achieve contacted a representative of MTS Health Partners and informed him that Achieve remained interested in pursuing discussions if the probability of completing a transaction were increased.

On November 22, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process, including that a series of calls between representatives of MTS Health Partners and representatives of Company A's financial advisor as well as between representatives of Fenwick and representatives of Company A's counsel had occurred since the prior board of directors meeting. Mr. Cormack reported that several issues remain unresolved, including the exchange ratio and the overall economics, including any adjustments due to pre-closing financings by Company A, whether Company A would provide any consideration for apatorsen, including contingent value rights, that Company A would not be able to deliver voting agreements supporting the proposed strategic transaction from a majority of its stockholders, deal certainty and termination fees. Mr. Cormack also advised the board of directors that Company A was not expecting to return a revised transaction agreement for up to two additional weeks.

On November 23, 2016, Mr. Cormack and Achieve discussed the attributes that made the combination valuable to both parties, the risks associated with engaging in the process for Achieve, and addressed the need for

timeliness in completing an agreement. The parties agreed that timing was of the essence and both parties agreed that they could quickly come to conclusion as to whether a transaction was achievable or not. Based on that conversation, both parties mutually agreed to accelerate negotiations of a definitive agreement regarding a potential strategic transaction, and Mr. Cormack sent a revised letter agreement to Achieve providing for up to $200,000 of reimbursement of certain legal and audit fees in the event that a transaction agreement between the two companies was not executed.

On November 28, 2016, representatives of OncoGenex received a response to the draft acquisition agreement it had provided to Company A. No material progress was made on the open issues summarized for the board of directors on November 22, 2016.

On November 29, 2016 Mr. Cormack received an email from the investment banking representative of Company B indicating that he had been advised by his client to inform OncoGenex that Company B was withdrawing from the process.

On December 1, 2016, Mr. Cormack contacted Achieve's Chief Executive Officer to discuss the proposed transaction.

Also on December 1, 2016, the executive management team of OncoGenex held a teleconference meeting with a large pharmaceutical company regarding potential partnering arrangements for apatorsen. Following the meeting, the pharmaceutical company requested that OncoGenex present the apatorsen data that has been generated in prostate cancer. This subsequent meeting occurred on December 20, 2016 as described below.

On December 2, 2016, OncoGenex and Achieve entered into the letter agreement regarding the potential reimbursement by OncoGenex to Achieve of up to $200,000 of certain out of pocket legal expenses in the event that a transaction agreement between the two companies is not executed.

Also on December 2, 2016, representatives of Fenwick and outside legal counsel for Company A negotiated the terms of the proposed transaction agreement, including the exchange ratio and the overall economics, including any adjustments due to pre-closing financings by Company A, whether Company A would provide any consideration for apatorsen, deal certainty and termination fees.

On December 2, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. During the call, Mr. Cormack reported that the transaction agreement received from Company A was substantially similar to the one OncoGenex previously received on November 18, 2016 with the vast majority of OncoGenex's suggested revisions rejected and that little forward progress had been made. He also advised that the overall economics of the proposed transaction still had not been resolved. Mr. Cormack also advised the board of directors of the executive management's concerns regarding certain diligence requirements under existing Company A contracts and the potential economic consequences of not complying with such diligence requirements. Mr. Cormack advised that additional diligence was required on the matter and that a call with Company A's counsel and management was being scheduled. Mr. Cormack also advised the board of directors that a revised draft of the Achieve transaction agreement reflecting recent discussions was expected from Achieve in the coming days and that the two companies and their respective legal counsel intended to meet in person on December 6, 2016 to negotiate remaining open items regarding the transaction agreement.

On December 4, 2016, OncoGenex executive management (Mr. Cormack and Mr. Bencich), Ms. Griffin and representatives of Fenwick received from representatives of Paul Hastings LLP, or Paul Hastings (legal counsel to Achieve), a further revised draft transaction agreement which included, among other things, substantially diluted representations and warranties being made by Achieve and removal of a contingent value right for apatorsen. The parties also discussed the triggers for payment of the termination fees and third-party expenses in connection with a termination of the Merger Agreement. OncoGenex executive management (Mr. Cormack and Mr. Bencich), Ms. Griffin and representatives of Fenwick and MTS Health Partners met by teleconference on December 5, 2016 to review the transaction agreement received from Achieve and agreed that the response to

Achieve would include clarification regarding the removal of the apatorsen contingent value right from the previous draft and for representatives of Fenwick to further negotiate the representations and warranties with Paul Hastings.

On December 5, 6 and 7, 2016, additional discussions were held with Company A regarding regulatory diligence and the contingent value right for apatorsen, which in light of the positive results from Borealis-2, OncoGenex had previously determined was an important component of any transaction in order to provide greater potential return to OncoGenex stockholders. Also on December 5, 2016, Company A provided responses to OncoGenex's questions regarding Company A's diligence obligations under certain partnering arrangements and Company A's historic equity grants. Later that day, Company A, with its outside tax experts, discussed the potential inclusion of a contingent value right for apatorsen in the transaction. Company A and OncoGenex also discussed the various collaborations that Company A was currently pursuing or could be pursuing in the near term.

On December 6, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. During the call, Mr. Cormack reported on the December 5, 2016 call with Company A management. While there was progress on certain provisions of the transaction agreement, importantly, Company A remained unwilling to provide any value for apatorsen and the overall economics of the deal remain unresolved. Mr. Cormack also advised the board of directors that the revised transaction agreement for Achieve had been received and that the parties would be meeting in person later that day to negotiate the terms of a potential definitive agreement.

Also, on December 6, 2016, representatives of Fenwick and representatives of Paul Hastings, together with members of OncoGenex executive management (Mr. Cormack and Mr. Bencich), as well as Ms. Griffin, and members of Achieve's management held an in person meeting to discuss the terms of the transaction, including the overall economics, terms of the proposed contingent value right and the projected timeline for the proposed transaction. At such meeting, OncoGenex and Achieve reached agreement on the material terms of the contingent value right for apatorsen.

On December 7, 2016, representatives of Fenwick and Company A's legal counsel, together with members of OncoGenex executive management (Mr. Cormack and Mr. Bencich), as well as Ms. Griffin, and members of Company A's management held a teleconference to discuss certain tax matters related to the inclusion of a contingent value right for apatorsen in the proposed transaction. Following substantial discussion, Company A reconfirmed that they were unwilling to include a contingent value right for apatorsen in the transaction.

On December 8, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. During the call, Mr. Cormack reported on the telephone conferences with Company A on December 7, 2016 and advised the board of directors that numerous business issues, including the overall economics of the proposed transaction, remained open. Mr. Cormack then updated the board of directors on the Achieve transaction and advised that comments on the contingent value right agreement from Achieve's legal counsel have been received by Fenwick and the business points agreed to during the various meetings earlier in the week were being incorporated into the transaction agreement. Mr. Cormack advised the board of directors that the intention was to return revised forms of both the transaction agreement and the contingent value rights agreement to Achieve on December 9, 2016.

On December 9, 2016, OncoGenex and Achieve, as well as representatives from Fenwick and Paul Hastings, held a teleconference to negotiate certain terms of the transaction agreement and the transaction, including the proposed Sopharma amendment, following which OncoGenex provided Achieve with comments to the draft agreement.

On December 12, 2016, Company A's and OncoGenex's respective management teams discussed the material open issues, including the overall economics. Company A stated that they were unwilling to provide contingent value rights to OncoGenex stockholders. Company A suggested OncoGenex provide a new proposal for further consideration if OncoGenex desired to continue discussions.

Additionally, between December 12, 2016 and January 3, 2017, representatives from Fenwick and Paul Hastings held numerous teleconferences to continue to negotiate the transaction agreement and ancillary agreements to the transaction agreement, as well as finalize the OncoGenex disclosure schedule and the Achieve disclosure schedule.

On December 13, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. During the call, Mr. Cormack confirmed that the transaction agreement had been provided to Achieve as planned on December 9, 2016 and that a further revised version was received from Achieve earlier on December 13, 2016. Mr. Cormack also advised the board of directors that a proposed amended and restated supply agreement between Achieve and Sopharma had been discussed with Achieve and that Achieve and OncoGenex had agreed that a letter agreement outlining the key terms of the proposed amended and restated supply agreement would be signed by Achieve and Sopharma prior to the transaction agreement, which letter agreement would provide that an amended and restated supply agreement would be entered into prior to closing of the strategic transaction between OncoGenex and Achieve. Mr. Cormack also reported on the discussions with Company A that occurred on December 12, 2016 and advised the board of directors that Company A had a board meeting on December 12, 2016 and confirmed that Company A would not agree to provide a contingent value right for apatorsen and that Company A now wanted OncoGenex to propose an alternative to a contingent value right in a revised term sheet. The board of directors and executive management discussed that any deal that would be competitive with the Achieve deal would need to provide consideration for apatorsen. As Company A would not provide such consideration as a contingent value right, the board of directors instructed executive management to determine the possibility of adjusting the exchange ratio in the proposed strategic transaction with Company A to provide for additional consideration for OncoGenex's stockholders. The board of directors and executive management discussed that this may also be challenging since the exchange ratio itself had not been resolved and increasing the OncoGenex valuation may be problematic for Company A. After further discussion, it was determined that OncoGenex would not provide a new proposal to Company A and would continue its negotiations with Achieve.

Also on December 13, 2016, OncoGenex executive management and representatives of Fenwick held a teleconference to discuss the proposed terms for a strategic transaction with each of Achieve and Company A, including the fact that the Achieve proposal provided for a contingent value right for apatorsen and the Company A proposal contained greater financial, financing and execution risks that were identified during the due diligence process. Additionally, beginning on December 13, 2016 and continuing through January 4, 2017 multiple calls between representatives of OncoGenex and Achieve occurred to address the open issues in the various transaction agreements, including representations and warranties, current and projected financial position, termination provisions and related costs associated with such provisions and the ancillary agreements to the transaction agreement. During this time, Achieve introduced the concept of an additional termination fee in the event OncoGenex breached its obligations under the non-solicitation provisions of the Merger Agreement. Additionally, OncoGenex proposed that the exchange ratio would fluctuate based on OncoGenex's net cash at closing. If OncoGenex's net cash was greater than a negotiated threshold, the exchange ratio would be adjusted such that the OncoGenex stockholders would hold a greater proportion of the surviving entity post-closing. OncoGenex also proposed that Achieve's net cash would similarly influence the exchange ratio. Achieve rejected the proposal that Achieve's net cash would affect the exchange ratio.

On December 14, 2016, OncoGenex executive management and representatives of Fenwick held a teleconference where the proposed terms of the proposed strategic transaction with Achieve and Company A were discussed.

On December 15 and 17, 2016, representatives of OncoGenex and Achieve, along with representatives from Fenwick and Paul Hastings, held a teleconference to negotiate the terms of the proposed strategic transaction. Significant negotiations were focused on the cash each company would have at the closing of the transaction. OncoGenex proposed that the exchange ratio would be adjusted based on the amount of cash held by Achieve at the closing. Achieve rejected this proposal and proposed that there would be a minimum amount of cash OncoGenex would need to have at the closing. The parties also discussed and negotiated the trigger for payment

of termination fees. In particular, Achieve continued to advocate for its proposal that if OncoGenex breached its obligations under the non-solicitation provisions of the Merger Agreement, Achieve should be entitled to a termination fee. In addition, the parties discussed reimbursement of third party expenses incurred by the other party in the event the Merger Agreement is terminated because a party is unable to secure stockholder approval or if a party pursues an alternative transaction. The parties continued to negotiate the scope of the representations and warranties of the parties. The parties negotiated the composition of the board of directors of the surviving entity with a focus on ensuring that the board would meet the requisite independence standards.

On December 16, 2016, Mr. Cormack updated the OncoGenex board of directors with respect to the strategic transaction process.

On December 18, 2016, representatives of Fenwick and Paul Hastings held a teleconference to negotiate the terms of the proposed strategic transaction, including the amount of the termination fees upon the occurrence of certain events. On such teleconference, it was agreed that each of Achieve and OncoGenex would pay the other party a termination fee, or Termination Fee, upon the occurrence of certain triggering events or if OncoGenex stockholders failed to approve the proposed transaction and, at the time of such failure to approve, an alternative transaction proposal had been publicly disclosed and, within 12 months of the termination of the proposed transaction agreement OncoGenex entered into an alternative transaction, in the case of OncoGenex and an OncoGenex triggering event, or a failure to approve the transaction by the Achieve stockholders in the case of a payment of Achieve. Additionally, if either Achieve or OncoGenex violated their non-solicitation obligations under the proposed transaction agreement and the other party terminated the transaction agreement due to such violation, the violating party would pay the other party a termination fee, or the Non-solicitation Termination Fee.

On December 19, 2016, representatives of Fenwick and Paul Hastings held a teleconference to negotiate the terms of the transaction agreement. At such teleconference, representatives of Fenwick conveyed OncoGenex's position that the Termination Fee should be $250,000 and the Non-solicitation Termination Fee should be $500,000. In addition to the discussion regarding the termination fees, the parties continued to negotiate the exchange ratio. OncoGenex proposed a slightly modified exchange ratio based on the relative valuations of the two parties discussed during the initial due diligence review period. Achieve rejected these modifications. The parties continued to negotiate the scope of the representations and warranties.

On December 20, 2016, the OncoGenex executive management (Mr. Cormack, Mr. Bencich and Dr. Jacobs), together with Ms. Griffin, presented the clinical results from all apatorsen prostate cancer studies completed to date to the pharmaceutical company that they had met with on December 1, 2016. A subsequent meeting was to be scheduled for the BIO EU conference in March, 2017, following the presentation of the results of the Pacific trial with apatorsen in February 2017.

On December 21, 2016, Mr. Cormack circulated then current draft agreements with Achieve, including a draft of the Merger Agreement, to the board of directors for their review.

Also, on December 21, 2016, representatives of Fenwick and Paul Hastings held a teleconference to negotiate the terms of the transaction agreement, during which representatives of Paul Hastings conveyed Achieve's position the Termination Fee should be $600,000 and the Non-solicitation Termination Fee should be $1.2 million.

On December 22, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. Mr. Cormack reported that since December 16, 2016, a number of teleconferences between executive management and representatives of Fenwick on one side and management for Achieve and representatives of Paul Hastings on the other side had occurred and most open issues in the draft transaction agreement and related ancillary agreements had been resolved other than the composition of the post-closing board of directors of the combined company, the amount of liability Achieve would have at closing, whether Achieve would issue additional equity to reduce certain of its liabilities prior to the closing of the proposed strategic transaction, which additional equity, along with all other equity of Achieve, would be converted into a fixed percentage of the

capitalization of the post-closing combined company, whether there would be a minimum cash requirement of $9 million for OncoGenex as a closing condition to the proposed strategic transaction and the amount of the termination fee upon the occurrence of certain events. Mr. Cormack informed the board of directors that executive management intended to continue working with Achieve to attempt to resolve these issues.

Between December 22, 2016 and December 23, 2016, numerous calls occurred between representatives of OncoGenex and Achieve to resolve the remaining open issues and all items other than the amount of liability that Achieve would have at closing were resolved, including that the Termination Fee would be $500,000 and the Non-solicitation Termination Fee would be $1.0 million.

On December 23, 2016, Mr. Cormack updated the board of directors with regards to the strategic transaction process. Mr. Cormack reported that since the last update received by the board of directors on December 22, 2016, all open items had been resolved other than the amount of liability that Achieve would have at closing.

Between December 23, 2016 and January 2, 2017, additional conversations regarding the amount of liability Achieve would have at closing occurred between Mr. Cormack and Mr. Stewart.

On January 3, 2017, Mr. Cormack updated the board of directors with regards to the strategic transaction process. During the call, Mr. Cormack reported on progress with Achieve and Company A. Mr. Cormack reported that Achieve intended to raise up to $2.4 million of additional capital and that such amount would not adjust the agreed to exchange ratio. He also reported that if such capital is not raised prior to closing then certain existing liabilities would be settled by the issuance of additional equity in Achieve pre-closing such that Achieve's liabilities would not exceed $1.2 million. The board of directors together with executive management considered this solution and agreed that the opportunity remained of high interest and in the best interests of OncoGenex and its stockholders to conclude.

Mr. Cormack also updated the board of directors on the various communications with Company A and that revised terms agreeable to Company A were discussed and that such terms provide some value for apatorsen up front but no separate contingent value right for apatorsen. Mr. Cormack advised that while the current offer ascribes some value to apatorsen, Company A decreased the value of the other components of the deal such that OncoGenex's valuation and thus the exchange ratio remained the same as before. The board of directors discussed the economic terms and the opportunity represented by Achieve and Company A, including consideration that a form of transaction agreement still had not been settled with Company A and determined that the Company A proposal remained uncompetitive.

Also on January 3, 2017, based upon discussions among members of the Achieve board of directors, Achieve indicated that it intended to designate Richard Stewart and Anthony Clarke, Ph.D. as members of the post-closing board of directors of the combined entity pursuant to the terms of the Merger Agreement. Mr. Stewart was selected as a member of the post-closing board of directors of the combined entity based primarily on his experience as the chairman of Achieve since its inception and his familiarity with the lead product candidate, together with his other publicly-traded company chief executive officer experience and significant experience serving as a director of other public and private life sciences companies. Dr. Clarke was selected as a member of the post-closing board of directors of the combined entity based primarily on his experience as the chief scientific officer of Achieve since its inception and his familiarity with the lead product candidate, together with his other chief scientific officer experience.

On January 4, 2017, representatives of Fenwick provided the fully negotiated and final transaction documents consisting of the Merger Agreement, disclosure schedules, support agreements, contingent value rights agreement and lock-up agreements to Mr. Cormack for inclusion in the board materials being sent to the OncoGenex board of directors. Mr. Cormack in turn provided the transaction documents to the board of directors.

On January 5, 2017, the OncoGenex board of directors held a telephonic meeting with members of OncoGenex executive management with representatives of MTS Health Partners and Fenwick present. During the meeting,

representatives of Fenwick reviewed with the OncoGenex board of directors the terms of the Merger Agreement and the fiduciary duties of the OncoGenex board of directors in the context of the proposed transaction. During the presentations, the OncoGenex board of directors asked questions and discussed the provisions of the Merger Agreement and related documentation. Representatives of MTS Health Partners reviewed the results of its financial analysis with respect to the merger and presented the oral opinion of MTS Securities, LLC, an affiliate of MTS Health Partners, or MTS Securities, that based upon and subject to the assumptions made, procedures followed, matters considered and qualifications and limitations of the review set forth in its written opinion, as of January 5, 2017, the exchange ratio in connection with the first merger, as provided in the Merger Agreement, was fair, from a financial point of view, to OncoGenex, as more fully described in the section entitled "The Merger—Opinion of the Financial Advisor to OncoGenex's Board of Directors" and responded to questions from the OncoGenex board of directors regarding its financial analysis. After the presentations and discussions, the OncoGenex board of directors unanimously (i) determined that the transaction, the issuance of shares of OncoGenex common stock pursuant to the transaction and the other transactions contemplated by the Merger Agreement are fair to, advisable and in the best interests of OncoGenex and its stockholders, (ii) approved the issuance of shares of OncoGenex common stock pursuant to the transaction, the Merger Agreement and the other transactions contemplated thereby, (iii) approved and declared advisable the Merger Agreement and the transactions contemplated thereby, and (iv) resolved to recommend that the OncoGenex stockholders vote to approve the issuance of shares of OncoGenex common stock in the transaction pursuant to the terms of the Merger Agreement.

On January 5, 2017, based upon discussions among members of the OncoGenex board of directors, OncoGenex expressed its intent to designate Martin Mattingly, Pharm. D., Stewart Parker and Scott Cormack as members of the post-closing board of directors of the combined entity pursuant to the terms of the Merger Agreement. Dr. Mattingly was selected as a member of the post-closing board of directors of the combined entity based primarily on his marketing background, chief executive officer experience and significant experience serving as a director of other public and private life sciences companies. Ms. Parker was selected as a member of the post-closing board of directors of the combined entity based primarily on her business development background, chief executive officer experience and significant experience serving as a director of other public and private life sciences companies. Mr. Cormack was selected as a member of the post-closing board of directors of the combined entity based primarily on his background in developing apatorsen, product development background with medical products, venture capital experience, chief executive officer experience and significant experience serving as a director of other public and private life sciences companies.

On January 5, 2017, the Merger Agreement was entered into among OncoGenex, Achieve, the Sellers and the Seller Representative, and the support agreement and lock-up agreements were entered into by the relevant parties. Later that day, OncoGenex and Achieve issued a joint press release announcing the execution of the Merger Agreement after the closing of trading in OncoGenex common stock on January 5, 2017.

Achieve Background of the Merger

Since Achieve's inception, its board of directors has been regularly evaluating its business and operations, clinical development plan, regulatory requirements, commercial market, competition, long-term strategic goals, and prospects as an independent company. Achieve's board of directors has continuously reviewed Achieve's competitive position, financial situation, and industry, including changes in applicable law and regulatory schemes, the competitive landscape, and Achieve's future prospects. As part of this review, Achieve's board of directors regularly consider strategic alternatives available to Achieve, including without limitation, possible mergers, acquisitions, divestitutres, and other strategic transactions.

As a result of this review, Achieve's board of directors began considering specific financing and business combination transactions in October 2015.

On February 19, 2016, Ricanto Limited, a related party of Achieve, and OncoGenex entered into a confidentiality agreement to facilitate due diligence and discussions between the parties regarding a possible business combination between Achieve and OncoGenex.

In September 2016, Achieve submitted a preliminary proposal to OncoGenex regarding a merger between Achieve and OncoGenex. As summarized above in "OncoGenex Background of the Merger," Achieve and OncoGenex engaged in continued discussions from September 2016 through the end of 2016 and on January 5, 2017, Achieve, OncoGenex, Ash Acquisition Sub, Inc., and Ash Acquisition Sub 2, Inc. entered into the Merger Agreement.

OncoGenex Reasons for the Merger

As noted above, the OncoGenex board of directors and executive management team have regularly reviewed and discussed OncoGenex's operating and strategic plans, both near-term and long-term, as well as potential partnerships and strategic transactions, in an effort to enhance stockholder value. These reviews and discussions have focused, among other things, on the opportunities and risks associated with OncoGenex's business and financial condition and strategic relationships and other strategic options. In particular, recent setbacks in the clinical development of OncoGenex's product candidates have prompted the OncoGenex board of directors to focus on alternative means for providing returns to stockholders.

In the course of its evaluation of the merger and the Merger Agreement, the OncoGenex board of directors held numerous meetings, consulted with OncoGenex's executive management, legal counsel and financial advisors, and reviewed and assessed a significant amount of information and, in reaching its unanimous decision to approve the merger, the issuance of OncoGenex common stock pursuant to the Merger Agreement and the other transactions contemplated by the Merger Agreement, the OncoGenex board of directors considered a number of factors, including, among others, the following:

- The OncoGenex board of directors considered the historical and current information concerning OncoGenex's business, financial performance, financial condition, including OncoGenex's cash position, operations, management and competitive position, the prospects of OncoGenex and its product candidates, the nature of the biotechnology industry generally, including financial projections of OncoGenex under various scenarios and its short- and long-term strategic objectives and the related risks and the belief that the combination of OncoGenex's and Achieve's businesses would create more value for OncoGenex stockholders in the long-term than OncoGenex could create as an independent, stand-alone company.
- The OncoGenex board of directors' belief, based in part on the judgment, advice and analysis of OncoGenex management with respect to the potential strategic, financial and operational benefits of the merger (which judgment, advice and analysis was informed in part by the business, technical, financial, accounting and legal due diligence investigation performed by OncoGenex with respect to Achieve), that Achieve's smoking cession product candidate, cytisine, represents a sizeable market opportunity, and may provide new medical benefits for patients and returns for investors.
- The OncoGenex board of directors also reviewed with the management of OncoGenex the current plans of Achieve for developing cytisine to confirm the likelihood that the combined company would possess sufficient resources, or have access to sufficient resources, to allow the management team to focus on the continued development and anticipated commercialization of cytisine. The OncoGenex board of directors also considered the possibility that the combined company would be able to take advantage of the potential benefits resulting from the combination of the OncoGenex public company structure with the Achieve business to raise additional funds in the future.
- The OncoGenex board of directors also considered the valuation and business prospects of all the potential strategic transaction candidates. In particular, their collective view was that Achieve was the most attractive candidate because of the promising results of previous clinical trials with cytisine, the possibility for expedited regulatory review in the United States and the large market for smoking cessation products. After considering the comprehensive diligence review that OncoGenex management had completed of three other prospective transaction partners, the board concluded that the merger with Achieve would create a publicly traded company focused on improving patient access to an important treatment that would create more value for OncoGenex's stockholders than any of the other proposals that the board had received.

- The OncoGenex board of directors concluded that the merger would provide existing OncoGenex stockholders a significant opportunity to participate in the potential growth of the combined company following the merger.
- The OncoGenex board of directors considered the ability of the existing OncoGenex stockholders to potentially recognize additional value from the development of apatorsen through the issuance of the CVRs.
- The OncoGenex board of directors also considered that the combined company will be led by an experienced senior management team and a board of directors with representation from each of the current management and boards of directors of OncoGenex and Achieve.
- The OncoGenex board of directors considered the financial analyses of MTS Health Partners, which the board engaged to provide financial advisory and investment banking services in connection with the board of directors' consideration and evaluation of potential strategic alternatives, and the opinion of MTS Securities, that based upon and subject to the assumptions made, procedures followed, matters considered and qualifications and limitations of the review set forth in its written opinion, as of January 5, 2017, the exchange ratio in connection with the first merger, as provided in the Merger Agreement, was fair, from a financial point of view, to OncoGenex, as more fully described in the section entitled "The Merger—Opinion of the Financial Advisor to OncoGenex's Board of Directors."

The OncoGenex board of directors also reviewed the recent results of operations and financial condition of OncoGenex, including:

- the failure of custirsen to meet the primary endpoint of improving overall survival in all three completed phase 3 trials and the failure of apatorsen to meet the primary endpoint of improving survival in certain clinical trials;
- the clinical development and sequential risks associated with continuing to develop apatorsen, including additional clinical studies that would be required and the potential market value of apatorsen;
- the loss of the operational capabilities of OncoGenex, and the risks associated with continuing to operate OncoGenex on a stand-alone basis, including the recourses needed to continue to develop apatorsen and the need to rebuild a pipeline of product candidates to continue its operations;
- the results of substantial efforts made over a significant period of time by OncoGenex's senior management and financial advisors to solicit strategic alternatives for OncoGenex to the merger, including the discussions that OncoGenex management, OncoGenex's representatives and the OncoGenex board of directors had in 2016 with other potential strategic transaction candidates;
- current financial market conditions and historical market prices, volatility and trading information with respect to OncoGenex common stock; and
- the risks, costs and timing associated with a potential liquidation of OncoGenex.

The OncoGenex board of directors also reviewed the terms of the Merger Agreement and associated transactions, including:

- the relative percentage ownership of OncoGenex stockholders and Achieve stockholders immediately following the completion of the merger, which is fixed;
- the number and nature of the conditions to Achieve's obligation to consummate the merger and the limited risk of non-satisfaction of such conditions as well as the likelihood that the merger will be consummated on a timely basis;
- the rights of, and limitations on, OncoGenex under the Merger Agreement to consider certain unsolicited acquisition proposals under certain circumstances, should OncoGenex receive a superior proposal;

- the reasonableness of the potential termination fee of up to $1.0 million and related reimbursement of certain transaction expenses of up to $0.5 million, which could become payable by OncoGenex if the Merger Agreement is terminated in certain circumstances;
- the agreement by a majority of Achieve stockholders to vote such shares in favor of approving the transactions contemplated by the Merger Agreement and against actions that could adversely affect the consummation of the merger; and
- the belief that the terms of the Merger Agreement, including the parties' representations, warranties and covenants, and the conditions to their respective obligations, are reasonable under the circumstances.

In the course of its deliberations, the OncoGenex board of directors also considered a variety of risks and other countervailing factors related to the merger, including:

- the up to $1.0 million termination fee and/or up to $0.5 million in related expenses payable by OncoGenex upon the occurrence of certain events and the potential effect of such termination fee in deterring other potential acquirors from proposing an alternative transaction that may be more advantageous to OncoGenex stockholders;
- the substantial expenses to be incurred in connection with the merger;
- the possible volatility, at least in the short term, of the trading price of the OncoGenex common stock resulting from the announcement of the merger;
- the risk that the merger might not be consummated in a timely manner or at all and the potential adverse effect of the public announcement of the merger or on the delay or failure to complete the merger on the reputation of OncoGenex;
- the risk to the business of OncoGenex, operations and financial results in the event that the merger is not consummated;
- the strategic direction of the continuing entity following the completion of the merger, which will be determined by a combination of individuals from OncoGenex's management team and Achieve's management team and board of directors, and a board of directors initially comprised of a combination of OncoGenex's and Achieve's board of directors; and
- various other risks associated with the combined company and the merger, including those described in the sections entitled "Risk Factors" and "Cautionary Statement Concerning Forward-Looking Statements."

The foregoing information and factors considered by the OncoGenex board of directors are not intended to be exhaustive but are believed to include all of the material factors considered by the OncoGenex board of directors. In view of the wide variety of factors considered in connection with its evaluation of the merger and the complexity of these matters, the OncoGenex board of directors did not find it useful, and did not attempt, to quantify, rank or otherwise assign relative weights to these factors. In considering the factors described above, individual members of the OncoGenex board of directors may have given different weight to different factors. The OncoGenex board of directors conducted an overall analysis of the factors described above, including thorough discussions with, and questioning of, the OncoGenex management team and the legal and financial advisors of OncoGenex, and considered the factors overall to be favorable to, and to support, its determination.

Achieve Reasons for the Merger

In the course of reaching its decision to approve the merger, Achieve's board of directors consulted with its management team, as well as its legal advisors, and considered a number of factors, among others, including the following material factors (which factors are not necessarily presented in any order of relative importance):

- the potential to provide its current stockholders with greater liquidity by owning stock in a public company;

- the fact that Achieve will have access to additional personnel with significant clinical and regulatory experience;
- the potential synergies with OncoGenex's clinical development, regulatory and financial capabilities;
- the fact that Achieve will have access to additional personnel with experience in preparing public company financial statements and otherwise complying with laws and regulations applicable to U.S. public companies;
- the potential to access public market capital, including sources of capital from a broader range of investors to support the clinical development of its product candidates than it could otherwise obtain if it continued to operate as a privately-held company and through OncoGenex's existing effective shelf registration statement on Form S-3;
- the potential to utilize approximately $100 million in net operating losses from OncoGenex's Canadian subsidiary, OncoGenex Technologies Inc.;
- the potential benefits from increased public market awareness of Achieve and its product candidate;
- the expectation that the merger would be a more time and cost-effective means to access capital than other options considered, including an initial public offering which Achieve was alternatively planning to pursue;
- information concerning Achieve's business, financial performance (both past and prospective) and its financial condition results of operation (both past and prospective), business and strategic objectives, as well as the risks associated with such objectives;
- the fact that shares of OncoGenex common stock issued to OncoGenex stockholders will be registered pursuant to a registration statement on Form S-4 by OncoGenex and will become freely tradable for Achieve's stockholders who are not affiliates of Achieve;
- the likelihood that the merger will be consummated on a timely basis;
- the terms and conditions of the Merger Agreement, including, without limitation, the following:
    - the determination that an exchange ratio that is not subject to adjustment based on trading prices is appropriate to reflect the expected relative percentage ownership of OncoGenex securityholders, Achieve securityholders and securityholders of those shares sold in the concurrent financing was appropriate based, in the judgment of Achieve's board of directors;
    - the expectation that the merger will be treated as a reorganization for U.S. federal income tax purposes, with the result that the Achieve stockholders will not recognize taxable gain or loss for U.S. federal income tax purposes upon the exchange of Achieve common stock for OncoGenex common stock pursuant to the merger;
    - the rights of Achieve under the Merger Agreement to consider certain unsolicited competing proposals under certain circumstances should Achieve receive a superior proposal; and
    - the conclusion of Achieve's board of directors that (i) the potential termination fee, for breaches not pertaining to a breach of the non-solicitation provisions of the Merger Agreement, of $0.5 million and expense reimbursements of up to $0.5 million, payable by OncoGenex to Achieve and the circumstances when such fee may be payable, were reasonable; and (ii) the potential termination fee, for breaches pertaining to a breach of the non-solicitation provisions of the Merger Agreement, of $1.0 million and expense reimbursements of up to $0.5 million, payable by OncoGenex to Achieve were reasonable; and
- the availability of appraisal rights under Delaware law to current stockholders who do not vote in favor of the adoption of the Merger Agreement and comply with all of the required procedures under Delaware law, which provides those eligible stockholders with an opportunity to have a Delaware court determine the fair value of their shares, which may be more than, less than, or the same as the amount such stockholders would have received under the Merger Agreement.

Achieve's board of directors also considered a number of uncertainties and risks in its deliberations concerning the Mergers and the other transactions contemplated by the Merger Agreement, including the following (which factors are not necessarily presented in any order of relative importance):

- the possibility that the merger might not be completed and the potential adverse effect of the public announcement of the merger on the reputation of Achieve and the ability of Achieve to obtain financing in the future in the event the Mergers is not completed;
- the termination fees of $0.5 million or $1.0 million and expense reimbursements of up to $0.5 million, payable by Achieve to OncoGenex upon the occurrence of certain events, and the potential effect of such termination fee in deterring other potential acquirers from proposing a competing transaction that may be more advantageous to Achieve's stockholders;
- the risk that the merger might not be consummated in a timely manner or at all;
- the expenses to be incurred in connection with the merger and related administrative challenges associated with combining the companies;
- the risk of diverting management's attention from other strategic priorities in order to implement the wind-down of certain aspects of the OncoGenex business or managing any unexpected OncoGenex liabilities that may arise;
- the additional public company expenses and obligations that Achieve's business will be subject to following the merger to which it has not previously been subject; and
- various other risks associated with the combined company and the merger, including the risks described in the section titled "Risk Factors."

The foregoing information and factors considered by Achieve's board of directors are not intended to be exhaustive, but are believed to include all of the material factors considered by Achieve's board of directors. In view of the wide variety of factors considered in connection with its evaluation of the merger and the complexity of these matters, Achieve's board of directors did not find it useful, and did not attempt, to quantify, rank or otherwise assign relative weights to these factors. In considering the factors described above, individual members of Achieve's board of directors may have given different weight to different factors. Achieve's board of directors conducted an overall analysis of the factors described above, including thorough discussions with, and questioning of, Achieve's management and Achieve's legal advisors, and considered the factors overall to be favorable to, and to support, its determination.

Certain Financial Forecasts of OncoGenex Utilized in Connection with the Merger

OncoGenex Financial Forecasts

OncoGenex does not, as a matter of course, publicly disclose long-term forecasts or internal projections as to future performance, earnings or other results, and OncoGenex is particularly concerned with making such forecasts and projections due to the unpredictability of the underlying assumptions and estimates. In connection with its due diligence process and evaluation of the merger, OncoGenex's management prepared financial forecasts regarding OncoGenex's forecasted milestone and royalty payments, operating expenses and net income (loss) for its 2017 through 2027 fiscal years. These unaudited financial forecasts were considered by the management of OncoGenex for purposes of evaluating the merger. The OncoGenex financial forecasts were not prepared with a view toward public disclosure. However, OncoGenex has included below a summary of the OncoGenex financial forecasts to provide its stockholders access to certain non-public information that was furnished to the OncoGenex board of directors and certain third parties in connection with the evaluation of the merger.

The OncoGenex financial forecasts included assumptions with respect to general business, economic, competitive, regulatory, market and financial conditions, and other future events, as well as matters specific to OncoGenex's business, such as the timing of completion of clinical trials and receipt of marketing approval for

apatorsen and operating expenses related to the development and commercialization of apatorsen, all of which are difficult to predict and many of which are beyond OncoGenex's control. Cost estimates during the development of apatorsen were based on OncoGenex's internal models and estimates regarding expenses. Cost estimates after the assumed commercialization of apartorsen were based on expected milestone and royalty payments owed under collaboration and license agreements relating to apatorsen. OncoGenex assumed all other commercialization costs would be incurred by a collaboration partner.

The OncoGenex financial forecasts presented below were prepared by OncoGenex management, reviewed with the OncoGenex board of directors and used by MTS Securities in connection with its financial analysis related to the merger.

The inclusion of the OncoGenex financial forecasts in this proxy statement/prospectus/information statement should not be regarded as an indication that OncoGenex or the OncoGenex board of directors considered, or now considers, these forecasts to be material to the OncoGenex or Achieve stockholders or necessarily indicative of actual future results. You should not place undue reliance on the unaudited financial forecasts contained in this proxy statement/prospectus/information statement. Please read the information set forth below under "Important Information About the OncoGenex Financial Forecasts."

OncoGenex's management provided MTS Securities non-probability of success, or non-POS, adjusted financial forecasts, which assumed that OncoGenex remained an independent company, partnered with a third party to develop apatorsen, utilized approximately $100 million of Canadian NOLs plus any NOLs created from OncoGenex's losses as a stand-alone entity to offset tax expense on milestones and royalties from an apatorsen partnership, and completed a $5 million equity financing in 2017 at a 50% discount to its closing stock price of $0.55 on January 4, 2017.

The following table presents the non-POS adjusted financial forecasts of OncoGenex, as used by the OncoGenex's board of directors for purposes of its consideration of the merger and by MTS Securities for purposes of its financial analyses related to the merger.

$ in millions	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Milestone and Royalty Payments	$—	$—	$—	$5	$24	$24	$52	$68	$70	$73	$75
Operating Expenses	($6)	($6)	($6)	($6)	($6)	($6)	($6)	($6)	($6)	($6)	($6)
Net Income (Loss)	($6)	($6)	($6)	($1)	$19	$18	$47	$55	$48	$50	$51

Important Information About the OncoGenex Financial Forecasts

While the OncoGenex financial forecasts were prepared in good faith, no assurance can be made regarding future events. The estimates and assumptions underlying the OncoGenex financial forecasts involve judgments with respect to, among other things, future economic, competitive, regulatory, and financial market conditions and future business decisions that may not be realized and that are inherently subject to significant business, economic, competitive, and regulatory uncertainties and contingencies, including, among others, the risks and uncertainties described under the sections entitled "Risk Factors" and "Cautionary Statement Concerning Forward-Looking Statements" in this proxy statement/prospectus/information statement, all of which are difficult to predict and many of which are beyond the control of OncoGenex and/or Achieve and will be beyond the control of the combined company. There can be no assurance that the underlying assumptions will prove to be accurate or that the forecasted results will be realized, and actual results likely will differ, and may differ materially, from those reflected in the OncoGenex financial forecasts, whether or not the merger is completed.

The OncoGenex financial forecasts summarized in this section were prepared solely for internal use by OncoGenex and not with a view toward public disclosure or with a view toward complying with the guidelines established by the American Institute of Certified Public Accountants for preparation and presentation of

prospective financial data, published guidelines of the SEC regarding forward-looking statements, or GAAP. OncoGenex's management believes the forecasts were prepared in good faith and on a reasonable basis based on the best information available to OncoGenex's management at the time of their preparation. The OncoGenex financial forecasts, however, are not fact and should not be relied upon as being necessarily indicative of actual future results, and readers of this proxy statement/prospectus/information statement are cautioned not to place undue reliance on this information. None of the OncoGenex financial forecasts reflects any synergies or costs related to or that may arise from the merger.

All of the OncoGenex financial forecasts summarized in this section were prepared by, and are the responsibility of, OncoGenex's management, as indicated. Ernst & Young LLP, OncoGenex's independent registered accounting firm, did not provide any assistance in preparing the OncoGenex financial forecasts and has not examined, compiled, or otherwise performed any procedures with respect to the OncoGenex financial forecasts and, accordingly, Ernst & Young LLP has not expressed any opinion or given any other form of assurance with respect thereto and they assume no responsibility for the prospective financial information. The Ernst & Young LLP reports included in this proxy statement/prospectus/information statement relate solely to the historical financial information of OncoGenex. Such reports do not extend to the OncoGenex financial forecasts and should not be read to do so.

By including in this proxy statement/prospectus/information statement a summary of the OncoGenex financial forecasts, neither OncoGenex nor any of its representatives has made or makes any representation to any person regarding the ultimate performance of OncoGenex compared to the information contained in the OncoGenex financial forecasts. OncoGenex has made no representation to Achieve, in the Merger Agreement or otherwise, concerning the OncoGenex financial forecasts. The OncoGenex financial forecasts summarized in this section were prepared during the periods described above and have not been updated to reflect any changes since the date of this proxy statement/prospectus/information statement or any actual results of operations of OncoGenex, as set forth under the section entitled "Selected Historical Consolidated Financial Data of OncoGenex" in this proxy statement/prospectus/information statement. Neither OncoGenex, Achieve nor, after completion of the Merger, the combined company undertakes any obligation, except as required by law, to update or otherwise revise the OncoGenex financial forecasts to reflect circumstances existing since their preparation or to reflect the occurrence of unanticipated events, even in the event that any or all of the underlying assumptions are shown to be in error, or to reflect changes in general economic or industry conditions.

The foregoing summary of the OncoGenex financial forecasts is not included in this proxy statement/prospectus/information statement in order to induce any stockholder to vote in favor of the proposals being brought before stockholders at the special meeting of OncoGenex stockholders or any other proposals to be voted on by Achieve stockholders.

Certain Financial Forecasts of Achieve Utilized in Connection with the Merger

Achieve Financial Forecasts

Achieve does not, as a matter of course, publicly disclose long-term forecasts or internal projections as to future performance, earnings, or other results, and Achieve is particularly concerned with making such forecasts and projections due to the unpredictability of the underlying assumptions and estimates. In connection with its due diligence process and evaluation of the Merger, OncoGenex management prepared financial forecasts regarding Achieve's forecasted revenues, operating expenses and net income (loss) results for its 2017 through 2032 fiscal years. The Achieve financial forecasts were not prepared with a view toward public disclosure.

The Achieve financial forecasts included assumptions with respect to general business, economic, competitive, regulatory, market and financial conditions, and other future events, as well as matters specific to Achieve's business, such as the timing of completion of clinical trials and receipt of marketing approval for cytisine and operating expenses related to the development and commercialization of cytisine, all of which are difficult to predict and many of which are beyond Achieve's control. Cost estimates were based on Achieve's internal

models and estimates, as modified by OncoGenex management, regarding Achieve's expenses. Commercial revenue and expense estimates were based on assumptions and models created by OncoGenex management.

The Achieve financial forecasts presented below were used by MTS Securities in connection with its financial analysis related to the merger. The Achieve financial forecasts were reviewed with the OncoGenex board of directors and were utilized by OncoGenex in connection with its financial analysis related to the merger.

The inclusion of the Achieve financial forecasts in this proxy statement/prospectus/information statement should not be regarded as an indication that OncoGenex, Achieve or the OncoGenex or Achieve boards of directors considered, or now considers, these forecasts to be material to the Achieve or OncoGenex stockholders or necessarily indicative of actual future results. You should not place undue reliance on the unaudited financial forecasts contained in this proxy statement/prospectus/information statement. Please read the information set forth below under "Important Information About the Achieve Financial Forecasts."

OncoGenex management provided MTS Securities non-POS adjusted and POS adjusted financial forecasts of Achieve, which assumed that Achieve remained an independent company and was taxed at a rate of 35%.

The following table presents the POS adjusted financial forecasts of Achieve, as used by the OncoGenex board of directors for purposes of its consideration of the merger and by MTS Securities for purposes of its financial analyses related to the merger.

$ in millions	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Total Revenue	$—	$—	$18	$46	$91	$128	$157	$166	$156	$139	$127	$108	$87	$78	$60	$56
Operating Expenses	($17)	($14)	($24)	($32)	($32)	($44)	($52)	($56)	($52)	($47)	($44)	($38)	($31)	($28)	($22)	($20)
Net Income (Loss)	($16)	($14)	($8)	$13	$36	$51	$63	$67	$63	$56	$51	$43	$34	$30	$23	$21

The following table presents the non-POS adjusted financial forecasts of Achieve, as used by the OncoGenex board of directors for purposes of its consideration of the merger and by MTS Securities for purposes of its financial analyses related to the merger.

$ in millions	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Total Revenue	$—	$—	$33	$86	$168	$236	$291	$308	$289	$258	$235	$201	$161	$144	$112	$103
Operating Expenses	($17)	($22)	($47)	($58)	($60)	($81)	($98)	($103)	($97)	($86)	($80)	($69)	($57)	($52)	($41)	($38)
Net Income	($16)	($21)	($16)	$24	$66	$95	$118	$125	$117	$104	$94	$80	$63	$56	$43	$39

Important Information About the Achieve Financial Forecasts

While the Achieve financial forecasts were prepared by OncoGenex management in good faith, no assurance can be made regarding future events. The estimates and assumptions underlying the Achieve financial forecasts involve judgments with respect to, among other things, future economic, competitive, regulatory, and financial market conditions and future business decisions that may not be realized and that are inherently subject to significant business, economic, competitive, and regulatory uncertainties and contingencies, including, among others, the risks and uncertainties described under the sections entitled "Risk Factors" and "Cautionary Statement Concerning Forward-Looking Statements" in this proxy statement/prospectus/information statement, all of which are difficult to predict and many of which are beyond the control of Achieve and/or OncoGenex and will be beyond the control of the combined company. There can be no assurance that the underlying assumptions will prove to be accurate or that the forecasted results will be realized, and actual results likely will differ, and may differ materially, from those reflected in the Achieve financial forecasts, whether or not the merger is completed.

The Achieve financial forecasts summarized in this section were not prepared by or at the direction of Achieve or its management and were prepared by OncoGenex management solely for internal use by OncoGenex and not with a view toward public disclosure or with a view toward complying with the guidelines established by the American Institute of Certified Public Accountants for preparation and presentation of prospective financial data,

published guidelines of the SEC regarding forward-looking statements, or GAAP. OncoGenex management believes the forecasts were prepared in good faith and on a reasonable basis based on the best information available to OncoGenex management at the time of their preparation. The Achieve financial forecasts, however, are not fact and should not be relied upon as being necessarily indicative of actual future results, and readers of this proxy statement/prospectus/information statement are cautioned not to place undue reliance on this information. None of the Achieve financial forecasts reflects any synergies or costs related to or that may arise from the merger.

All of the Achieve financial forecasts summarized in this section were prepared by, and are the responsibility of, OncoGenex management, as indicated. Neither Ernst & Young LLP, OncoGenex's independent registered public accounting firm, nor PricewaterhouseCoopers LLP, Achieve's independent accountants, provided any assistance in preparing the Achieve financial forecasts and has not examined, compiled, or otherwise performed any procedures with respect to the Achieve financial forecasts and, accordingly, Ernst & Young LLP and PricewaterhouseCoopers LLP have not expressed any opinion or given any other form of assurance with respect thereto and they assume no responsibility for the prospective financial information. The Ernst & Young LLP and PricewaterhouseCoopers LLP reports included into this proxy statement/prospectus/information statement relate solely to the historical financial information of OncoGenex and Achieve, respectively. Such reports do not extend to the Achieve financial forecasts and should not be read to do so.

By including in this proxy statement/prospectus/information statement a summary of the Achieve financial forecasts, neither Achieve nor any of its representatives has made or makes any representation to any person regarding the ultimate performance of Achieve compared to the information contained in the Achieve financial forecasts. Achieve has made no representation to OncoGenex, in the Merger Agreement or otherwise, concerning the Achieve financial forecasts. The Achieve financial forecasts summarized in this section were prepared during the periods described above and have not been updated to reflect any changes since the date of this proxy statement/prospectus/information statement or any actual results of operations of Achieve, as set forth under the section entitled "Selected Historical Consolidated Financial Data of Achieve" in this proxy statement/prospectus/information statement. Neither Achieve, OncoGenex nor, after completion of the merger, the combined company undertakes any obligation, except as required by law, to update or otherwise revise the Achieve financial forecasts to reflect circumstances existing since their preparation or to reflect the occurrence of unanticipated events, even in the event that any or all of the underlying assumptions are shown to be in error, or to reflect changes in general economic or industry conditions.

The foregoing summary of the Achieve financial forecasts is not included in this proxy statement/prospectus/information statement in order to induce any stockholder to vote in favor of any proposal to be voted on by Achieve stockholders or any of the proposals to be voted on by OncoGenex stockholders at the special meeting of OncoGenex stockholders.

Opinion of the Financial Advisor to OncoGenex's Board of Directors

OncoGenex's board of directors engaged MTS Health Partners to provide financial advisory and investment banking services in connection with the OncoGenex board of directors' consideration and evaluation of potential strategic alternatives. On January 5, 2017, MTS Securities rendered its oral opinion to OncoGenex's board of directors, which opinion was confirmed in writing on the same date, that, as of the date of such opinion, and based upon and subject to the assumptions made, procedures followed, matters considered and qualifications and limitations of the review set forth in its written opinion, as of January 5, 2017, the exchange ratio in connection with the first merger, as provided in the Merger Agreement, was fair, from a financial point of view, to OncoGenex.

The full text of MTS Securities' written opinion, which sets forth the assumptions made, procedures followed, matters considered, and qualifications and limitations of the review undertaken by MTS Securities in connection with such opinion, is attached as *Annex D* to this proxy statement/prospectus/

information statement and is incorporated herein by reference. OncoGenex urges you to carefully read the MTS Securities opinion, together with the description of such opinion included elsewhere in this proxy statement/prospectus/information statement, in its entirety. The following is a summary of the material terms of the MTS Securities opinion and is qualified in its entirety by reference to the full text of such opinion.

MTS Securities provided its opinion for the information and assistance of OncoGenex's board of directors in connection with its consideration of the merger. MTS Securities' opinion addressed solely the fairness, from a financial point of view, of the exchange ratio in connection with the first merger, as provided in the Merger Agreement, to OncoGenex. MTS Securities' opinion does not address OncoGenex's underlying business decision to proceed with the merger or the relative merits of the merger compared to other alternatives available to OncoGenex. MTS Securities' opinion did not constitute a recommendation to OncoGenex's board of directors, and is not a recommendation to any stockholder of OncoGenex, as to how to vote with respect to the first merger or take any other action in connection with the merger or otherwise.

In connection with rendering the opinion described above and performing its related financial analyses, MTS Securities:

- reviewed the financial terms of a draft copy of the Merger Agreement dated as of January 4, 2017, which was the most recent draft available to MTS Securities;
- reviewed certain publicly available business and financial information concerning OncoGenex and the industries in which it operates;
- reviewed certain internal financial analyses and forecasts of OncoGenex and Achieve prepared by and provided to MTS Securities by the management of OncoGenex relating to each of OncoGenex's and Achieve's business, including certain benefits to be realized as a result of the merger, which are referred to in this discussion as the projections, and utilized per instruction of OncoGenex;
- conducted discussions with members of senior management and representatives of OncoGenex and Achieve concerning the matters described in the three preceding bullets, the other strategic alternatives considered or pursued by OncoGenex since August 16, 2016, the likelihood of OncoGenex being able to enter into partnership arrangements or obtain financing to the extent necessary to finance OncoGenex's strategic plan, and certain other matters MTS Securities believed necessary or appropriate to its inquiry;
- compared the financial and operating performance of Achieve with publicly available information concerning other publicly-traded companies, including certain publicly traded securities of such other companies, that MTS Securities deemed relevant;
- reviewed and analyzed, based on the projections, the projected cash flows to be generated by Achieve to determine the present value of Achieve's discounted cash flows; and
- performed such other financial studies, analyses and investigations and considered such other information as MTS Securities deemed appropriate for the purposes of its opinion described below.

In arriving at its opinion, MTS Securities assumed and relied upon, without assuming liability or responsibility for independent verification, the accuracy and completeness of all of the financial, legal, regulatory, tax, accounting and other information that was publicly available or was provided to, discussed with or reviewed by MTS Securities. MTS Securities are not legal, regulatory, tax or financial reporting experts and relied, with OncoGenex's consent, on the assessments made by advisors to OncoGenex with respect to such issues. MTS Securities did not conduct any independent verification of the projections. Without limiting the generality of the foregoing, with respect to the projections, MTS Securities assumed, with OncoGenex's consent, and based upon discussions with its management, that the projections had been reasonably prepared in good faith, that the projections were the best currently available estimates and judgments of the management of OncoGenex of the

future results of operations and financial performance of OncoGenex and Achieve. MTS Securities expresses no view as to the projections or the assumptions on which they were based.

In arriving at its opinion, MTS Securities made no analysis of, and expressed no opinion as to, the adequacy of the reserves of OncoGenex or Achieve and relied upon information supplied to it by OncoGenex as to such adequacy. In addition, MTS Securities did not make any independent evaluations or appraisals of the assets or liabilities (including any contingent derivatives or off-balance-sheet assets or liabilities) of OncoGenex or Achieve or any of their respective subsidiaries, and MTS Securities was not furnished with any such evaluations or appraisals, nor did MTS Securities evaluate the solvency of OncoGenex, Achieve or any other entity under any state or federal law relating to bankruptcy, insolvency or similar matters. MTS Securities assumed that there had been no material change in the assets, financial condition, business or prospects of OncoGenex since the date of the most recent relevant financial statements made available to MTS Securities. Without limiting the generality of the foregoing, MTS Securities did not undertake any independent analysis of any pending or threatened litigation, regulatory action, possible unasserted claims or other contingent liabilities, to which OncoGenex, Achieve or any of their respective affiliates is a party or may be subject, and at the direction of OncoGenex and with its consent, the opinion of MTS Securities did not make any assumption concerning, and therefore did not consider, the possible assertion of claims, outcomes or damages arising out of any such matters. MTS Securities also assumed that neither OncoGenex nor Achieve was a party to any material pending transaction that had not been disclosed to MTS Securities, including without limitation any financing, recapitalization, acquisition or merger, divestiture or spin-off, other than the merger.

MTS Securities assumed that the representations and warranties of each party contained in the Merger Agreement and in all other related documents and instruments that are referred to therein are and were true and correct as of the date or the dates made or deemed made, that each party thereto will fully and timely perform all of the covenants and agreements required to be performed by it under the Merger Agreement and any other agreement contemplated thereby, that the merger will be consummated pursuant to the terms of the Merger Agreement without amendments thereto, and that all conditions to the consummation of the merger will be satisfied without waiver thereof. MTS Securities assumed that the final form of the Merger Agreement would be, in all material respects, identical to the draft of the Merger Agreement reviewed by MTS Securities for purposes of its opinion. MTS Securities, with OncoGenex's consent, further assumed that that no adjustment of the exchange ratio as provided in the Merger Agreement would result in any adjustment to the exchange ratio that is material to its analysis. MTS Securities also assumed that any governmental, regulatory and other consents and approvals contemplated in connection with the merger would be obtained and that, in the course of obtaining any of those consents, no restrictions would be imposed or waivers made that would have an adverse effect on OncoGenex or the contemplated benefits of the merger.

The MTS Securities opinion was based on economic, market, financial and other conditions existing, and on the information made available to MTS Securities, as of the date of such opinion. MTS Securities did not consider any potential legislative or regulatory changes currently being considered by the United States Congress, the Securities and Exchange Commission, or any other governmental or regulatory bodies, or any changes in accounting methods or generally accepted accounting principles that may be adopted by the Securities and Exchange Commission or the Financial Accounting Standards Board. MTS Securities noted that, although subsequent developments may affect the conclusion reached in such opinion, MTS Securities assumed no obligation to update, revise or reaffirm such opinion.

The MTS Securities opinion addressed solely the fairness, from a financial point of view, of the exchange ratio in connection with the first merger to OncoGenex and did not address any other terms in the Merger Agreement, or any other agreement contemplated by the Merger Agreement or relating to the merger or any other aspect or implication of the merger, including without limitation, the form or structure of the merger or the fairness of the merger or the exchange ratio in connection with the first merger to the holders of OncoGenex common stock or of any other securities or creditors or any other constituency of OncoGenex. The MTS Securities opinion does not address the Company's underlying business decision to proceed with the merger or the relative merits of the merger compared to other alternatives available to OncoGenex. MTS Securities expressed no opinion as to the

prices or ranges of prices at which shares of securities of any person, including OncoGenex, will trade at any time, including following the announcement or consummation of the merger. MTS Securities was not requested to opine as to, and the MTS Securities opinion does not in any manner address, the amount or nature of compensation to any of the officers, directors or employees of any party to the merger, or any class of such persons relative to the compensation to be paid to the security holders of Achieve in connection with the merger or with respect to the fairness of any such compensation. The MTS Securities opinion was reviewed and approved by a fairness committee of MTS Securities.

The following is a summary of the material financial analyses delivered by MTS Securities to the OncoGenex board of directors in connection with rendering the MTS Securities opinion. The following summary, however, does not purport to be a complete description of the financial analyses performed by MTS Securities. The order of the analyses described below does not represent the relative importance or weight given to those analyses by MTS Securities. Some of the summaries of the financial analyses include information presented in tabular format. The tables must be read together with the full text of the corresponding summaries and are alone not a complete description of the financial analyses performed by MTS Securities. Considering the data in the tables below without considering the corresponding full narrative descriptions of the financial analyses, including the methodologies and assumptions underlying such analyses, could create a misleading or incomplete view of the financial analyses performed by MTS Securities. Other than the guidance provided by OncoGenex's board of directors and senior management to MTS Securities set forth in this proxy statement/prospectus/information statement, no instructions were given to or limitations imposed upon MTS Securities by OncoGenex's board of directors and senior management with respect to the investigations made or procedures followed by it in rendering its opinion.

MTS Securities performed stand-alone valuation analyses of both OncoGenex and Achieve using a variety of valuation methodologies described below. MTS Securities then performed a relative valuation analysis in order to compare the proposed pro forma ownership ratio of 3:1 to the pro forma ownership ratios implied based on the respective stand-alone valuation ranges. Except as otherwise noted, the following quantitative information, to the extent that it is based on market data, is based on market data as it existed on or before January 4, 2017 and is not necessarily indicative of current market conditions.

Historical Stock Price Analysis

MTS Securities reviewed the historical trading prices for shares of OncoGenex common stock on certain dates and the volume weighted average trading prices for certain periods, in order to put the current stock price in perspective with historical averages. MTS Securities noted that the closing stock price of OncoGenex common stock on January 4, 2017 was $0.55 per share, which MTS Securities calculated to result in a market capitalization of approximately $16.6 million.

The following table presents the results of this analysis as of January 4, 2017:

Stock Price	Minimum	Volume Weighted Average	Maximum
Last 5 Days	$0.49	$0.53	$0.57
Last 10 Days	$0.49	$0.52	$0.57
Last 20 Days	$0.43	$0.51	$0.57
Last 3 Months	$0.33	$0.51	$0.70
Year to Date	$0.33	$0.79	$1.42

Methodology for Estimating Probability of Success (POS) Adjustments

For purposes of its analysis, MTS Securities used and relied upon the probability of success scenarios determined by OncoGenex's management based on their experience, including with respect to development experience and management's expectation of commercial success, and due diligence findings for each of OncoGenex and Achieve as described below.

In order for a prescription drug to reach the market, that drug must successfully complete various phases of clinical trials and then must be approved by a regulatory agency (such as the FDA) for marketing. Typically, a drug progresses from preclinical (non-human) testing into clinical (human) testing in a serial manner culminating in the regulatory review and potential approval.

In order to calculate the probability of success for a drug to gain regulatory approval, one must consider the total cumulative probability of the drug progressing from the current phase of clinical development through approval. Because each phase of development has its own individual probability of success, in order to calculate the total cumulative probability of success through approval at any given point in development, one typically uses the product of multiplying all of the probabilities of success of each individual phase to be completed to arrive at a total cumulative probability of success for marketing approval. This total cumulative probability of success for marketing approval is referred to as the drug's probability of success. The probability of success is applied directly to all revenues and expenses that are projected to occur post-marketing approval. For any revenue or expenses that are projected to occur before marketing approval, the appropriate cumulative probability from the current phase to the appropriate projected stage of development is applied to the revenue or expense.

OncoGenex Valuation Analysis

MTS Securities analyzed the valuation of OncoGenex using a sum of the parts methodology based on three different scenarios: a liquidation scenario, liquidation and net operating losses sale scenario and apatorsen partnership scenario. The results of each of the analyses performed are summarized below.

MTS Securities did not analyze the valuation of OncoGenex using a comparable companies analysis or comparable acquisitions analysis because of the unique nature of OncoGenex as a cash shell company with no current revenue stream. OncoGenex would therefore only be comparable to another shell company with the same cash balance, liabilities, and projected future cash flows, and such a comparable public company does not exist.

OncoGenex management provided, and instructed MTS Securities to use, certain assumptions and projections for OncoGenex. These projections included probability of success factors related to apatorsen of 55%, 83%, and 46% related to Phase III success, approval and cumulative probability of success, respectively. These projections also provided for a scenario in which OncoGenex was able to enter into a partnership with respect to apatorsen and included assumed royalty rates and milestone payments, based on management's experiences. These projections also assumed that OncoGenex would need to raise $5.0 million in equity financing in 2017 at a 50% discount to OncoGenex's closing price of $0.55 on January 4, 2017, in order to fund ongoing operations as a stand-alone entity.

Liquidation Scenario. In a liquidation scenario a company's value is calculated based on what amount of cash it would be worth in liquidation. Based on information provided by OncoGenex's management, MTS Securities calculated the amount of net cash available to OncoGenex stockholders in an orderly liquidation of OncoGenex.

The liquidation scenario assumed the value of OncoGenex based on the value of its assets in the case of bankruptcy and were based on projections provided by OncoGenex management for use in the analysis which assumed a liquidation date of March 31, 2017, full payment of all wind down costs related to the custirsen and apatorsen trials and all other liabilities and liquidation costs, termination of all remaining licenses and retention of necessary OncoGenex employees to facilitate clinical trials wind down. MTS Securities calculated, based on these assumptions, that net cash available for distribution to OncoGenex stockholders would be approximately $10.8 million.

Liquidation and Sale of Net Operating Losses Scenario. MTS Securities also conducted a sum of the parts analysis which added to the liquidation scenario an assumption that OncoGenex would be able to monetize its Canadian net operating losses and applied a proxy value for those assets. Using projections and assumptions provided by OncoGenex management and based on a $100 million Canadian net operating loss balance as of

September 30, 2016, MTS Securities calculated a total net present value of $6.9 million for such net operating losses by applying a 15.0% discount rate to the projected year-by-year tax savings resulting from the use of such net operating losses and assuming a Canadian tax rate of 26%.

Apatorsen Partnership Scenario. MTS Securities calculated the net present value of OncoGenex based on a sum of the parts analysis which added to the liquidation and sale of net operating losses scenario an assumption, based on the advice of OncoGenex management, that OncoGenex would be able to form a partnership with respect to apatorsen which would result in annual revenue and milestone payments and which would require OncoGenex to conduct an equity financing of $5 million at an assumed 50% discount to OncoGenex's January 4, 2017 closing price in order to fund ongoing operations as a stand-alone entity. Using this information and probability of success assumptions prepared by OncoGenex management, MTS Securities calculated a net present value to current OncoGenex shareholders of apatorsen as a result of a partnership to be approximately $19.3 million by applying a discount rate of 15.0% to the probability weighted cash flows resulting from such partnership. In this scenario, no additional value was ascribed to (a) OncoGenex's Canadian net operating losses because management advised MTS Securities, and MTS Securities assumed, including for purposes of valuing apatorsen, that such net operating losses would be completely utilized in offsetting taxes resulting from the apatorsen program, or (b) OncoGenex's cash on hand because management advised MTS Securities, and MTS Securities assumed, that all existing cash balances would be completely utilized in funding the development of apatorsen pursuant to a development partnership.

Achieve Valuation Analysis

MTS Securities analyzed the valuation of Achieve using two different methodologies: a discounted cash flow analysis and a comparable publicly traded companies analysis. The results of each of these analyses are summarized below.

OncoGenex management provided two scenarios of projections for Achieve. One set of projections was adjusted for probably of success and the other set was not. Specifically, the cash flows for Achieve's lead product, cytisine, including potential revenues, cost of sales and operating expenses, were or were not, as applicable, adjusted for probability of success factors at each stage of the regulatory process. OncoGenex management suggested that, based on their experience and published examples of preclinical efficacy data, smoking cessation therapies that made it to human clinical trials have a very high probability of clinical success. OncoGenex's management advised MTS Securities to apply probability of success adjustments of 65%, 83%, and 54%, related to probability of Phase III success, probability of approval and cumulative probability of success, respectively, to the Achieve projections based on the outcome of technical and regulatory due diligence to account for the risk associated with achieving the projections. The probability of success adjustment percentages were based on OncoGenex's management's experience in the pharmaceutical industry and commercialization of products, and on the basis of extensive scientific, development, technical, and regulatory due diligence performed by OncoGenex and its consultants. For each set of projections, MTS Securities was instructed by OncoGenex's management to assume a launch year of 2019, net working capital of 2% of revenues from 2019-2032 and $40 million in financing at a 50% discount to program equity value.

Discounted Cash Flow Analysis. A discounted cash flow analysis is a valuation methodology that calculates a company's value as the net present value of that company's projected future cash flows by discounting those cash flows back to today at that company's cost of capital. Given the projections were adjusted for probability of success, MTS Securities performed a discounted cash flow analysis on Achieve using a range of discount rates commensurate with the cost of capital of profitable commercial stage biotechnology companies.

The discounted cash flow analysis was based on the following key assumptions (i) range of discount rates from 13% to 17% based on the cost of capital of recently commercial stage, single product biopharmaceutical companies, (ii) no terminal value, (iii) range of revenue achievement factors from 80% to 120% and (iv) a tax

rate of 35%. MTS Securities reviewed and compared certain financial information for the following commercial stage, single product biopharmaceutical companies:

Commercial Stage, Single Product Biopharmaceutical Companies

Company	Debt/Equity Ratio	Total Debt /Total Capital
Theravance Biopharma	NM	NM
Corcept Therapeutics, Inc.	2.2%	2.2%
Amarin Corporation	13.9%	12.2%
Keryx Biopharmaceuticals, Inc.	19.0%	15.9%
Arena Pharmaceuticals, Inc.	18.1%	15.3%
VIVUS, Inc.	185.2%	64.9%
Neos Therapeutics, Inc.	60.0%	37.5%
Alimera Sciences, Inc.	45.7%	31.3%
Orexigen Therapeutics, Inc.	405.1%	80.2%

NM = not meaningful. The company does not have meaningful debt, and thus it is not meaningful to calculate a debt/equity ratio or total debt/total capital.

The mean and median debt / equity ratios for this group of companies were 93.7% and 32.3%, respectively. The mean and median total debt to total capital for this group of companies were 32.5% and 23.6%, respectively.

Based on the OncoGenex probability of success adjusted management projections for Achieve, additional funding would be necessary to finance Achieve in order to achieve future profitability. MTS Securities assumed that Achieve would fund any cash shortfalls by raising equity financing at a 50% discount to current equity value of $133 million. This analysis resulted in an illustrative equity value range for Achieve of $40 million to $70 million, $70 million to $100 million, and $90 million to $140 million, for the 80%, 100% and 120% revenue achievement factors, respectively.

Public Trading Comparable Companies Analysis. A comparable companies analysis is a valuation analysis that calculates a company's valuation by applying valuations of comparable public companies to the company being valued. MTS Securities reviewed and compared certain financial information for the following public primary care-focused, clinical stage biopharmaceutical companies with Phase II—Phase III data:

Public Primary Care-Focused, Clinical Stage Biopharmaceutical Companies With Phase II – Phase III Data

Company	Enterprise Value	Peak Revenue	Total Enterprise Value / Peak Revenue
CoLucid Pharmaceuticals, Inc.	$ 608	$ 1,750	.35x
Achaogen, Inc.	$ 432	$ 570	.76x
Poxel SA	$ 145	$ 3,100	.05x
Nabriva Therapeutics AG	$ 59	$ 400	.15x
Genocea Biosciences	$ 70	$ 1,000	.07x
Synthetic Biologics, Inc.	$ 74	$ 400	.18x
Oramed Pharmaceuticals Inc.	$ 57	$ 2,100	.03x
Scynexis, Inc.	$ 44	$ 550	.08x
Agile Therapeutics, Inc.	$ 40	$ 440	.09x

The high, mean, median and low enterprise values for this group of companies were $608 million, $170 million, $70 million and $40 million, respectively. The high, mean, median, and low peak revenue for this group of

companies were $3,100 million, $1,146 million, $570 million and $400 million, respectively. The high, mean, median and low total enterprise value/peak revenue for this group of companies were 0.76x, 0.19x, 0.09x and 0.03x, respectively.

Although none of the selected companies is identical or directly comparable to Achieve, MTS Securities, based on its experience and professional judgment, selected the comparable companies because, although they are publicly traded companies, they have certain operations and products that, for purposes of analysis, may be considered similar to certain operations and number of products of Achieve, and, in particular, each of the selected companies have lead products and indications that were primarily available through a primary care physician and at a similar development stage as Achieve's product, i.e. not commercial stage. Although MTS Securities is not aware of any other companies that would fit the mix of criteria used to identify the selected comparable companies, other persons might regard other companies to be comparable or might not include all of the companies MTS Securities included in its selected comparable companies analysis. MTS Securities noted that no comparable company meeting its selection criteria was excluded from its analysis. The information that MTS Securities reviewed included the enterprise values and peak revenues. MTS Securities did not apply a specific discount rate designed to account solely for Achieve being a private company, although it did take into account Achieve's status as a private company for purposes of the determinations of valuation noted below. Taking into account Achieve's stage of development and pipeline relative to the comparable companies and assuming a peak sale estimate of $308 million at the direction of OncoGenex management, the comparable companies analysis resulted in an illustrative equity value range for Achieve of $40 million to $610 million based on enterprise values and $10 million to $230 million based on total enterprise value/peak revenues.

Relative Valuation Analysis

MTS Securities analyzed the relative valuations resulting from the stand-alone equity value ranges calculated for Achieve and OncoGenex using two methodologies (i) by comparing valuations calculated using the discounted cash flow analysis for Achieve and the high (apatorsen partnership scenario) valuation and low (liquidation scenario) valuation for OncoGenex and the implied relative pro forma ownership ratio and (ii) by comparing valuations calculated using the comparable publicly traded companies analysis for Achieve and the high (apatorsen partnership scenario) valuation and low (liquidation scenario) valuation for OncoGenex and the implied relative pro forma ownership ratio.

*Relative Valuation based on Achieve Discounted Cash Flow Analysis and OncoGenex Liquidation and Apatorsen Partnership Scenarios.*For Achieve, this illustrative value range of equity value was $43.6 million to $70.5 million, $66.2 million to $103.2 million and $90.3 million to $137.3 million for the 80%, 100% and 120% revenue achievement factors, respectively. For OncoGenex, the stand alone equity value range was, based on the high (apatorsen partnership scenario) valuation and low (liquidation scenario) valuation, $10.8 million to $19.3 million.

The result of this relative valuation analysis showed a range of implied post-closing pro forma ownership of 2:1 to 7:1, 3:1 to 10:1 and 5:1 to 13:1 for the 80%, 100% and 120% revenue achievement factors, respectively.

MTS Securities noted that the significant majority of implied pro forma ownership ratios in this analysis exceed the 3:1 ratio proposed in the transaction.

*Relative Valuation based on Achieve Comparable Publicly Traded Companies Analysis and OncoGenex Liquidation and Apatorsen Partnership Scenarios.*For Achieve, this illustrative value range of enterprise values was $38.5 million to $607.0 million and total enterprise value/peak revenue range of $7.3 million to $232.8 million. For OncoGenex, the stand alone equity value range was, based on the high (apatorsen partnership scenario) valuation and low (liquidation scenario) valuation, $10.8 million to $19.3 million.

The result of this relative valuation analysis showed a range of implied post-closing pro forma ownership of 2:1 to 56:1 based on enterprise value and 0:1 to 22:1 based on total enterprise value/peak revenue.

MTS Securities noted that the significant majority of implied pro forma ownership ratios in this analysis exceed the 3:1 ratio proposed in the transaction.

General Overview of Analyses; Other Considerations

MTS Securities performed a variety of financial and comparable analyses for purposes of rendering its opinion. The preparation of a financial opinion is a complex process and is not susceptible to partial analysis or summary description. In arriving at its opinion, MTS Securities considered the results of all of its analyses as a whole and did not attribute any particular weight to any analysis or factor considered. Each analytical technique has inherent strengths and weaknesses, and the nature of the available information may further affect the value of particular techniques. The overall conclusions MTS Securities reached are based on all the analyses and factors presented, taken as a whole, and also on application of MTS Securities' own experience and judgment. Such conclusions may involve significant elements of subjective judgment and qualitative analysis. MTS Securities therefore gave no opinion as to the value or merit, standing alone, of any one or more parts of the analyses. Furthermore, MTS Securities believes that the summary provided and the analyses described above must be considered as a whole and that selecting any portion of the analyses, without considering all of them, would create an incomplete view of the process underlying MTS Securities' analysis and opinion. As a result, the ranges of valuations resulting from any particular analysis or combination of analyses described above should not be taken to be the view of MTS Securities with respect to the actual value of OncoGenex or Achieve or their respective capital stock.

In performing its analyses, MTS Securities made numerous assumptions with respect to industry performance, general business, regulatory, and economic conditions, and other matters, all of which are beyond MTS Securities' control and many of which are beyond the control of OncoGenex or Achieve. Any estimates used by MTS Securities in its analysis are not necessarily indicative of future results or actual values, which may be significantly more or less favorable than those suggested by such estimates.

No single company or transaction used in the above analyses as a comparison is identical to OncoGenex, Achieve or the merger, and an evaluation of the results of those analyses is not entirely mathematical. Rather, the analyses involve complex considerations and judgments concerning financial and operating characteristics and other factors that could affect the acquisition, public trading, or other values of the companies, businesses, or transactions analyzed. The analyses were prepared solely for purposes of MTS Securities providing its opinion and do not purport to be appraisals or necessarily reflect the prices at which businesses or securities actually may be sold, which are inherently subject to uncertainty.

The MTS Securities opinion was one of the many factors taken into consideration by OncoGenex's board of directors in making its determination to recommend to the OncoGenex stockholders that they approve the first merger. See the section entitled "The Merger—OncoGenex Reasons for the Merger." Consequently, the analyses as described above should not be viewed as determinative of the opinion of OncoGenex's board of directors with respect to the exchange ratio or of whether OncoGenex's board of directors would have been willing to agree to a different exchange ratio. The exchange ratio was determined through arm's-length negotiations between OncoGenex and Achieve and was approved by OncoGenex's board of directors and Achieve's board of directors. MTS Health Partners provided advice to OncoGenex's board of directors during these negotiations; however, neither MTS Securities nor MTS Health Partners recommended any specific amount of consideration or specific exchange ratio to OncoGenex or its board of directors or suggested that any specific amount of consideration or exchange ratio constituted the only appropriate consideration or exchange ratio for the first merger.

MTS Securities has consented to the use of the MTS Securities opinion in this proxy statement/prospectus/information statement; however, MTS Securities has not assumed any responsibility for the form or content of this proxy statement/prospectus/information statement, other than the MTS Securities opinion itself and the description of such opinion contained herein.

OncoGenex's board of directors selected MTS Health Partners because MTS Health Partners is nationally recognized in the health care industry as having investment banking professionals with significant experience in

health care investment banking and merger and acquisition transactions, including transactions similar to the merger. Pursuant to an engagement letter agreement, dated as of February 12, 2015, as amended, by and between OncoGenex and MTS Health Partners, OncoGenex engaged MTS Health Partners to act as its financial advisor in connection with its consideration, evaluation and/or exploration of strategic alternatives, including a potential business combination transaction involving OncoGenex. In addition, MTS Health Partners agreed to provide, for $250,000, an opinion as to the fairness, from a financial point of view, of the exchange ratio in connection with the first merger or the consideration to be paid or received in any such transaction. As compensation for MTS Health Partners' financial advisory services, OncoGenex paid a retainer of $100,000 and, upon completion of the merger, will pay a transaction fee of $1.5 million. The retainer and the opinion fee will be credited against the transaction fee. In addition, OncoGenex also agreed to reimburse MTS Health Partners for its reasonable out of pocket expenses, including attorney's fees and expenses, and to indemnify MTS Health Partners and its related parties against various liabilities in connection with MTS Health Partners' engagement. Pursuant to MTS Health Partners' internal policies, MTS Securities, rather than MTS Health Partners, delivered the fairness opinion due to the nature of the first merger consideration.

MTS Health Partners and its affiliates, as part of their investment banking services, are regularly engaged in the valuation of businesses (including those in the health care industry) and securities in connection with mergers and acquisitions, and for other purposes. As noted above, MTS Health Partners acted as financial advisor to OncoGenex's board of directors in connection with the merger and participated in certain of the negotiations leading to the execution of the Merger Agreement. In the two years prior to the date hereof, MTS Health Partners or its affiliates has provided financial advisory and financing services for OncoGenex and received customary fees of $100,000 in connection with such services. MTS Health Partners or such affiliates may also seek to provide such services to OncoGenex and Achieve and/or certain of their respective affiliates in the future and expect to receive fees for the rendering of these services.

Interests of the OncoGenex Directors and Executive Officers in the Merger

In considering the recommendation of the OncoGenex board of directors with respect to issuing shares of OncoGenex common stock as contemplated by the Merger Agreement and the other matters to be acted upon by the OncoGenex stockholders at the OncoGenex special meeting, the OncoGenex stockholders should be aware that certain members of the board of directors and executive officers of OncoGenex have interests in the merger that may be different from, or in addition to, the interests of the OncoGenex stockholders. These interests relate to or arise from the matters described below. The board of directors of each of OncoGenex and Achieve was aware of these potential conflicts of interest and considered them, among other matters, in reaching their respective decisions to approve the Merger Agreement and the merger, and to recommend, as applicable, that the OncoGenex stockholders approve the OncoGenex proposals to be presented to the OncoGenex stockholders for consideration at the OncoGenex special meeting as contemplated by this proxy statement/prospectus/information statement, and that the Achieve stockholders sign and return the written consent as contemplated by this proxy statement/prospectus/information statement.

Severance Payments

Scott Cormack, OncoGenex's Chief Executive Officer, will no longer serve as Chief Executive Officer upon the consummation of the merger. Under the terms of Mr. Cormack's existing employment agreement, upon an "involuntary termination" (as defined in the employment agreement) that occurs during the period beginning three months before and ending 12 months after a change in control or if such involuntary termination is required by the merger agreement relating to such change in control or such involuntary termination is made at the express request of the other party or parties to the transaction constituting such change in control, OncoGenex will be obligated to pay Mr. Cormack 24 months of his then-current base salary, plus a sum equal to 12 months of his average monthly bonus earnings, where such average is calculated over the 24-month period immediately preceding Mr. Cormack's termination date and based on Mr. Cormack's bonuses paid in such 24-month period. In addition, Mr. Cormack will receive continued entitlement under OncoGenex's benefit plans for 24 months, or

an amount equal to the sum Mr. Cormack would be required to pay to receive comparable benefits if such continued entitlement is not permitted. Additionally, all vesting restrictions, if any, will immediately lapse on all of Mr. Cormack's compensatory equity awards effective as of his termination date.

Assuming the merger is consummated on March 22, 2017, upon the consummation of the merger, in accordance with the terms of Mr. Cormack's employment agreement, Mr. Cormack is expected to receive:

Cash Payments(1)	Benefits(2)	Equity Compensation(3)	Total
$1,157,225	$88,063	$27,563	$1,272,851

(1) Reflects 24 months of Mr. Cormack's current base salary of $541,383 and 12 months of Mr. Cormack's average monthly bonus earnings, calculated over the last 24 months, which was approximately $6,204 per month.
(2) Reflects the estimated value of OncoGenex's group health insurance for 24 months.
(3) Reflects the value of the automatic acceleration of the vesting of 43,750 unvested restricted stock units as of March 22, 2017, assuming a market price of OncoGenex shares of $0.63, which is the average closing price for the five trading days following the public announcement of the merger. All of the unvested stock options held by Mr. Cormack have an exercise price greater than the market price of OncoGenex common stock, and therefore, are excluded from this table.

Continued Employment

Additionally, certain of OncoGenex's existing executive officers and directors are expected to remain executive officers and directors of the combined company. John Bencich and Dr. Cindy Jacobs are expected to continue to serve as the Chief Financial Officer and Chief Medical Officer of the combined company, and Stewart Parker, Martin Mattingly and Scott Cormack are expected to continue as directors of the combined company.

Acceleration of Unvested Equity Awards

In connection with the consummation of the merger, any unvested equity awards held by the OncoGenex board members will vest in full; however, OncoGenex expects that all equity awards held by directors will be fully vested prior to the consummation of the merger. The exercise price of all unvested stock option awards held by the OncoGenex board members is currently above the trading price of OncoGenex's common stock.

Ownership Interests

As of December 31, 2016, directors and executive officers of OncoGenex owned 1.0% of the outstanding shares of OncoGenex common stock. OncoGenex directors and executive have entered into support agreements in connection with the merger. For a more detailed discussion of the support agreements see the section entitled "Agreements Related to the Merger—Support Agreements and Written Consent."

Interests of Certain Achieve Directors, Executive Officers and Affiliates in the Merger

In considering the recommendation of the Achieve board of directors with respect to adopting the Merger Agreement, Achieve stockholders should be aware that certain members of the board of directors and executive officers of Achieve have interests in the merger that may be different from, or in addition to, interests they may have as Achieve stockholders. Each of the OncoGenex and Achieve board of directors was aware of these potential conflicts of interest and considered them, among other matters, in reaching their respective decisions to approve the Merger Agreement and the merger, and to recommend, as applicable, that the OncoGenex stockholders approve the OncoGenex proposals to be presented to the OncoGenex stockholders for consideration at the OncoGenex special meeting as contemplated by this proxy statement/prospectus/information statement, and that the Achieve stockholders sign and return the written consent as contemplated by this proxy statement/prospectus/information statement.

Ownership Interests. Certain of Achieve's directors and executive officers currently hold shares of Achieve's common stock. The table below sets forth the ownership of Achieve's common stock as of March 22, 2017 by Achieve's directors and executive officers and their anticipated ownership of Achieve common stock immediately prior to the closing of the first merger.

Stockholder Name	Number of Shares of Achieve Common Stock as of March 22, 2017	Number of Shares of Achieve Common Stock Immediately Prior to the Closing of the First Merger
Richard Stewart(1)	5,300	5,300
Ronald Martell(2)	2,100	2,100
Dr. Anthony Clarke(3)	1,500	1,500
Caroline Loewy(4)	630	630

(1) Mr. Stewart is Achieve's Chairman and a member of its board of directors.
(2) Mr. Martell is Achieve's former Chief Executive Officer and a member of its board of directors.
(3) Dr. Clarke is Achieve's Chief Scientific Officer and a member of its board of directors.
(4) Ms. Loewy is Achieve's former Chief Financial Officer.

Some of Achieve's other stockholders affiliated with Achieve's directors also currently hold shares of Achieve's common stock. The table below sets forth the anticipated ownership of Achieve's common stock by other affiliates of Achieve's directors immediately prior to the closing of the first merger based on their ownership of Achieve's capital stock as of March 22, 2017.

Stockholder Name	Number of Shares of Achieve Common Stock Immediately Prior to the Closing of the First Merger
Timothy Clarke(1)	1,500
Frances Waddingham(2)	1,500
Susan Clarke(3)	1,000
Deirdre Lomas(4)	200

(1) Mr. Clarke is Dr. Clarke's son.
(2) Mrs. Waddingham is Dr. Clarke's daughter.
(3) Ms. Clarke is Dr. Clarke's spouse.
(4) Ms. Lomas is Mr. Stewart's partner.

Severance Payments. Ronald Martell, the former Chief Executive Officer of Achieve and a director of Achieve, will not continue as the Chief Executive Officer of the combined company or as a director of the combined company and Mr. Martell will not continue to serve in any director, officer or other capacity with the combined company. Caroline Loewy, the former Chief Financial Officer of Achieve, will not continue as the Chief Financial Officer of the combined company and Ms. Loewy will not continue to serve in any director, officer or other capacity with the combined company. While neither Mr. Martell nor Ms. Loewy will serve in any director, officer or other capacity with the combined company, it is expected that both will be stockholders of the combined company following the closing of the merger. Mr. Martell and Ms. Loewy are expected to receive certain payments in connection with their separation, which have not yet been determined.

Management Following the Merger. As described elsewhere in this proxy statement/prospectus/information statement, including in "Management Following the Merger," certain of Achieve's directors and executive officers are expected to become the directors and executive officers of the combined company upon the closing of the merger. After the consummation of the merger, the combined company intends to negotiate and enter into

employment agreements with the executive officers of the combined company, after receiving input from the combined company's compensation committee and board of directors.

Indemnification and Insurance. As described elsewhere in this proxy statement/prospectus/information statement, including in "The Merger—Limitations of Liability and Indemnification," certain of Achieve's directors and executive officers will be entitled to certain ongoing rights of indemnification and coverage under directors' and officers' liability insurance policies.

Limitations of Liability and Indemnification

In addition to the indemnification required in the certificate of incorporation and bylaws of OncoGenex, OncoGenex entered into indemnification agreements with each of its directors and officers and certain other individuals performing services to OncoGenex. These agreements provide for the indemnification of such persons for all reasonable expenses and liabilities incurred in connection with any action or proceeding brought against them by reason of the fact that they are or were agents of OncoGenex. OncoGenex believes that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers and certain other individuals performing services to OncoGenex.

Additionally, under the Merger Agreement, from the closing of the merger through the sixth anniversary of the closing, OncoGenex and the combined company in the merger, shall indemnify and hold harmless each person who is party to an agreement with OncoGenex providing indemnification to such person or is or has served as a director or officer of OncoGenex or its subsidiaries and Achieve and its subsidiaries against all claims, losses, liabilities, damages, judgments, fines and reasonable fees, costs and expenses, including attorneys' fees and disbursements, incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to the fact that such person is or was a director or officer of OncoGenex or its subsidiaries, or Achieve or its subsidiaries or was otherwise providing services to OncoGenex or its subsidiaries, or Achieve or its subsidiaries, to the fullest extent permitted under the DGCL for directors or officers of Delaware corporations. In addition, each such person is entitled to advancement of expenses incurred in the defense of any such claim, action, suit, proceeding or investigation.

Under the Merger Agreement, the certificate of incorporation and bylaws of each of OncoGenex and the combined company shall contain provisions no less favorable with respect to indemnification, advancement of expenses and exculpation of such persons than are presently set forth in the certificate of incorporation and bylaws of OncoGenex and Achieve, as applicable, which provisions shall not be amended, modified or repealed for a period of six years' time from the closing of the first merger in a manner that would adversely affect the rights thereunder such individuals.

The Merger Agreement also provides that OncoGenex and Achieve shall each purchase an insurance policy, which maintains in effect for six years from the closing the current directors' and officers' liability insurance policies maintained by OncoGenex and Achieve, as applicable, or substitute policies of at least the same coverage containing terms and conditions that are not materially less favorable.

Form of the Merger

The Merger Agreement provides that at the effective time, Merger Sub 1 will be merged with and into Achieve. Upon the consummation of the first merger, Achieve will continue as the surviving corporation and will be a wholly owned subsidiary of OncoGenex. Promptly following the first merger, Achieve shall merge with and into Merger Sub 2, with Merger Sub 2 surviving as a wholly owned subsidiary of OncoGenex.

After completion of the merger, assuming OncoGenex Proposal No. 3 is approved by OncoGenex stockholders at the OncoGenex special meeting, OncoGenex will be renamed "Achieve Life Sciences, Inc." and expects to trade on The NASDAQ Capital Market under the symbol "ACHV."

Merger Consideration

At the effective time of the first merger, each share of Achieve common stock outstanding immediately prior to the effective time of the first merger will automatically be converted into the right to receive approximately 4,242.8904 pre-split shares of OncoGenex common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's outstanding capitalization, OncoGenex's fully-diluted capitalization, as well as the payment of cash in lieu of fractional shares.

Immediately after the first merger, based on the exchange ratio, it is expected that Achieve stockholders will own approximately 75% of the outstanding capital stock of the combined company, and OncoGenex equity holders will hold approximately 25% of the outstanding capital stock of the combined company. The exchange ratio is determined pursuant to a formula described in more detail in the Merger Agreement and in this proxy statement/prospectus/information statement.

There will be no adjustment to the total number of shares of OncoGenex common stock that Achieve stockholders will be entitled to receive for changes in the market price of OncoGenex common stock. Accordingly, the market value of the shares of OncoGenex common stock issued pursuant to the merger will depend on the market value of the shares of OncoGenex common stock at the time the merger closes, and could vary significantly from the market value on the date of this proxy statement/prospectus/information statement.

No fractional shares of OncoGenex common stock will be issuable pursuant to the merger to Achieve stockholders. Instead, each Achieve stockholder who would otherwise be entitled to receive a fraction of a share of OncoGenex common stock, after aggregating all fractional shares of OncoGenex common stock issuable to such stockholder, will be entitled to receive in cash the dollar amount, rounded up to the nearest whole cent, without interest, determined by multiplying such fraction by the volume weighted average trading price of a share of OncoGenex common stock as quoted on The NASDAQ Capital Market, for the five trading days ending the trading day immediately prior to the date the first merger becomes effective.

The Merger Agreement provides that, at the effective time of the first merger, OncoGenex will deposit with an exchange agent acceptable to OncoGenex and Achieve stock certificates representing the shares of OncoGenex common stock issuable to the Achieve stockholders and a sufficient amount of cash to make payments in lieu of fractional shares.

The Merger Agreement provides that, promptly after the effective time of the first merger, the exchange agent will mail to each record holder of Achieve capital stock immediately prior to the effective time of the first merger a letter of transmittal and instructions for surrendering and exchanging the record holder's Achieve stock certificates for shares of OncoGenex common stock. Upon surrender of an Achieve stock certificate for exchange to the exchange agent, together with a duly signed letter of transmittal and such other documents as the exchange agent or OncoGenex may reasonably require, the Achieve stock certificate surrendered will be cancelled and the holder of the Achieve stock certificate will be entitled to receive the following:

- the number of whole shares of OncoGenex common stock that such holder has the right to receive pursuant to the provisions of the Merger Agreement;
- cash in lieu of any fractional share of OncoGenex common stock; and
- dividends or other distributions, if any, declared or made with respect to OncoGenex common stock with a record date after the effective time of the first merger.

At the effective time of the first merger, all holders of certificates representing shares of Achieve common stock that were outstanding immediately prior to the effective time of the first merger will cease to have any rights as stockholders of Achieve. In addition, no transfer of Achieve common stock after the effective time of the first merger will be registered on the stock transfer books of Achieve.

If any Achieve stock certificate has been lost, stolen or destroyed, OncoGenex may, in its discretion, and as a condition to the delivery of any shares of OncoGenex common stock, require the owner of such lost, stolen or destroyed certificate to deliver an affidavit claiming such certificate has been lost, stolen or destroyed and post a bond indemnifying OncoGenex against any claim suffered by OncoGenex related to the lost, stolen or destroyed certificate or any OncoGenex common stock issued in exchange for such certificate as OncoGenex may reasonably request.

From and after the effective time of the first merger, until it is surrendered, each certificate that previously evidenced Achieve common stock will be deemed to represent only the right to receive shares of OncoGenex common stock, and cash in lieu of any fractional share of OncoGenex common stock.

OncoGenex will not pay dividends or other distributions on any shares of OncoGenex common stock to be issued in exchange for any unsurrendered Achieve stock certificate until the Achieve stock certificate is surrendered as provided in the Merger Agreement.

Effective Time of the Merger

The Merger Agreement requires the parties to consummate the first merger after all of the conditions to the consummation of the merger contained in the Merger Agreement are satisfied or waived, including the adoption of the Merger Agreement by the stockholders of Achieve and the approval by the OncoGenex stockholders of the issuance of OncoGenex common stock, the amendment to the certificate of incorporation of OncoGenex effecting the proposed reverse stock split and the amendment to the certificate of incorporation of OncoGenex effecting the name change from "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc." The first merger will become effective upon the filing of a certificate of merger with the Secretary of State of the State of Delaware or at such later time as is agreed by OncoGenex and Achieve and specified in the certificate of merger. Promptly following the first merger, Achieve shall merge with and into Merger Sub 2, with Merger Sub 2 surviving as a wholly owned subsidiary of OncoGenex. The second merger will become effective upon the filing of a certificate of merger with the Secretary of State of the State of Delaware. There is no condition to the completion of the second merger other than the effectiveness of the first merger. Neither OncoGenex nor Achieve can predict the exact timing of the consummation of the merger.

Regulatory Approvals

In the United States, OncoGenex must comply with applicable federal and state securities laws and the rules and regulations of The NASDAQ Capital Market in connection with the issuance of shares of OncoGenex common stock and the filing of this proxy statement/prospectus/information statement with the SEC.

Material U.S. Federal Income Tax Consequences of the Merger

The discussion in this section entitled "Material U.S. Federal Income Tax Consequences of the Merger" constitutes the opinion of each of Fenwick and West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, filed as Exhibits 8.1 and 8.2, respectively, to the registration statement of which this proxy statement/prospectus/information statement forms a part. In the opinions of Fenwick and West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, the first merger and the second merger, together, the "merger", constitute a reorganization within the meaning of Section 368(a) of the Code.

In the opinions of Fenwick and West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, the following is a discussion of the material U.S. federal income tax consequences of the merger applicable to U.S. Holders (as defined below) who exchange their Achieve common stock for OncoGenex common stock in the merger, but does not purport in any manner to be a complete analysis of all potential tax effects. This discussion is based on the Code, U.S. Treasury regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the Internal Revenue Service, or the IRS,

in effect as of the date of the merger. These authorities may change or be subject to differing interpretations. Any such change may be applied retroactively in a manner that could adversely affect a holder of Achieve common stock. In addition, the following discussion does not address the tax consequences of the merger under state, local and foreign tax laws. Furthermore, the following discussion does not address any tax consequences of any transactions effectuated before, after or at the same time as the merger, whether or not they are in connection with the merger.

The tax opinions of Fenwick and West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, regarding the merger are not binding on the IRS or the courts, and neither Achieve nor OncoGenex intends to request a ruling from the IRS with respect to the U.S. federal income tax consequences of the merger or any related transaction, if any. Consequently, no assurance can be given that the IRS will not assert, or that a court would not sustain, a position contrary to any of those set forth below. In addition, if any of the facts, representations or assumptions upon which the opinion is based is inconsistent with the actual facts, the U.S. federal income tax consequences of the merger could be adversely affected.

This discussion assumes and is limited to U.S. Holders who hold their Achieve common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to the particular circumstances of an Achieve common stockholder, including the impact of the 3.8% tax on net investment income. In addition, it does not address any state or local tax consequences or consequences relevant to holders of Achieve common stock that are subject to particular U.S. or foreign tax rules, including, without limitation:

- persons subject to the alternative minimum tax or 3.8% tax on net investment income;
- persons whose functional currency is not the U.S. dollar;
- persons holding Achieve common stock as part of a hedge, straddle, or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- persons who are not U.S. Holders;
- banks, insurance companies, and other financial institutions;
- real estate investment trusts or regulated investment companies;
- brokers, dealers, or traders in securities;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell Achieve common stock under the constructive sale provisions of the Code;
- persons who hold or receive Achieve common stock pursuant to the exercise of any employee stock options or otherwise as compensation;
- persons holding Achieve common stock who exercise dissenters' rights; and
- tax-qualified retirement plans.

For purposes of this discussion, a "U.S. Holder" is a beneficial owner of Achieve common stock that, for U.S. federal income tax purposes, is or is treated as:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity taxable as a corporation for U.S. federal income purposes) created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or

- a trust if either a court within the United States is able to exercise primary supervision over the administration of such trust and one or more United States persons (within the meaning of Section 7701(a)(30) of the Code) have the authority to control all substantial decisions of such trust, or the trust has a valid election in effect under applicable Treasury Regulations to be treated as a United States person for U.S. federal income tax purposes.

If an entity treated as a partnership for U.S. federal income tax purposes holds Achieve common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding Achieve common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

STOCKHOLDERS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE MERGER ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

In the opinions of Fenwick and West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, based on the facts, representations and assumptions set forth herein, which are consistent with the state of facts existing as of the effective date of the merger, the merger will constitute a reorganization within the meaning of Section 368(a) of the Code.

In rendering the opinions below, Fenwick & West LLP and Paul Hastings LLP have examined the following documents, or Merger Documents:

(a) The Merger Agreement;

(b) The Registration Statement of which this proxy statement/prospectus/information statement forms a part and this proxy statement/prospectus/information statement;

(c) Certain representations and other statements made by OncoGenex and Achieve in letters delivered in connection with the opinions prepared by their respective counsel; and

(d) Such other documents and records as Fenwick & West LLP and Paul Hastings LLP have deemed necessary in order to enable them to render the opinions below.

In rendering the opinions below, Fenwick and West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, have assumed, without any independent investigation or verification of any kind, that all of the information as to factual matters contained in the Merger Documents is true, correct, and complete. Any inaccuracy with respect to factual matters contained in the Merger Documents or incompleteness in our understanding of the facts could alter the conclusion reached in their opinions.

In addition, for purposes of rendering the opinions below, Fenwick and West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, have assumed with the permission of OncoGenex and Achieve that (i) all signatures on all Merger Documents reviewed by Fenwick & West LLP and Paul Hastings LLP are genuine, (ii) all Merger Documents submitted to Fenwick & West LLP and Paul Hastings LLP as originals are true and correct, (iii) all Merger Documents submitted to Fenwick & West LLP and Paul Hastings LLP as copies are true and correct copies of the originals thereof, (iv) each natural person signing any Document reviewed by Fenwick & West LLP and Paul Hastings LLP had the legal capacity to do so, and (v) the merger and the transactions contemplated in the Merger Agreement will be effected in accordance with the terms thereof.

Finally, based on the Merger Documents and with the permission of OncoGenex and Achieve, Fenwick & West LLP and Paul Hastings LLP have assumed that (i) Holders of Achieve common stock will exchange their shares solely for OncoGenex voting common stock, and (ii) the only cash paid to Achieve shareholders as part of the merger is in lieu of the issuance of fractional shares of OncoGenex common stock.

The discussion below reflects the conclusions of Fenwick & West LLP and Paul Hastings LLP, in their respective opinions as to the material U.S. federal income tax consequences of the merger to Achieve shareholders.

Based upon the foregoing, it is the opinion of Fenwick & West LLP and Paul Hastings LLP that the merger will constitute a "reorganization" within the meaning of Section 368(a) of the Code. Rev. Rul. 2001-46, 2001 I.R.B. 321. Accordingly, it is expected that the tax consequences to U.S. Holders of Achieve common stock will be as follows:

- A U.S. Holder will not recognize gain or loss upon the exchange of Achieve common stock for OncoGenex common stock pursuant to the merger, except to the extent of cash received in lieu of a fractional share of OncoGenex common stock as described below. Code Section 355(a)(1).
- A U.S. Holder who receives cash in lieu of a fractional share of OncoGenex common stock in the merger will generally recognize capital gain or loss in an amount equal to the difference between the amount of cash received instead of a fractional share and such stockholder's tax basis allocable to such fractional share. Code Section 302(a); Rev. Rul. 66-365, 1966-2 C.B. 116.
- A U.S. Holder's aggregate tax basis for the shares of OncoGenex common stock received in the merger (including any fractional share interest for which cash is received) will equal such stockholder's aggregate tax basis in the shares of Achieve common stock surrendered upon completion of the merger, decreased by the amount of cash that it receives and increased by the amount of gain, if any, that it recognizes. Code Section 358(a)(1)
- The holding period of the shares of OncoGenex common stock received by a U.S. Holder in the merger will include such stockholder's holding period of the shares of Achieve common stock surrendered in exchange therefor. Code Section 1223(1).

Any capital gains or losses recognized in the merger as a result of receipt of cash in lieu of a fractional share of OncoGenex common stock, as described above, generally will constitute long-term capital gain or loss if the U.S. Holder's holding period in the Achieve common stock surrendered in the merger is more than one year as of the effective date of the merger. The deductibility of capital losses is subject to limitations.

U.S. Holders who owned at least one percent (by vote or value) of the total outstanding stock of Achieve and U.S. Holders with a basis in their Achieve common stock of $1,000,000 or more are required to attach a statement to their tax returns for the year in which the merger is consummated that contains the information listed in Treasury Regulation Section 1.368-3(b). Such statement must include the stockholder's tax basis in the stockholder's Achieve common stock and the fair market value of such stock.

It is the opinion of Fenwick & West LLP, OncoGenex's legal counsel, and Paul Hastings LLP, Achieve's legal counsel, that the statements set forth herein correctly describe the general U.S. federal income tax consequences resulting from the merger to U.S. Holders who exchange their Achieve common stock for OncoGenex common stock in the merger. Such opinions are limited to the matters stated herein, and no opinion is implied or may be inferred beyond the opinions expressly stated herein.

Information Reporting and Backup Withholding

A U.S. Holder of Achieve common stock may be subject to information reporting and backup withholding on cash paid in lieu of fractional shares in connection with the merger. Backup withholding generally will apply only if the beneficial holder fails to furnish a correct taxpayer identification number or otherwise fails to comply with applicable backup withholding rules and certification requirements. Each U.S. Holder of Achieve common stock should adequately complete and sign and provide to the paying agent an IRS Form W-9 in order to provide the information and certification necessary to avoid backup withholding, unless an applicable exemption exists and is otherwise proved in a manner acceptable to the paying agent. (Foreign persons would complete and sign and provide to the paying agent a version of IRS Form W-8.)

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be refunded or allowed as a credit against a U.S. Holder of Achieve common stock's U.S federal income tax liability, if any, provided the required information is timely furnished to the IRS. U.S. Holders of Achieve common stock should consult their tax advisors regarding their qualification for an exemption from backup withholding and the procedures for obtaining such an exemption.

THE PRECEDING DISCUSSION DOES NOT PURPORT TO BE A COMPLETE ANALYSIS OR DISCUSSION OF ALL OF THE MERGER'S POTENTIAL TAX EFFECTS. U.S. HOLDERS OF ACHIEVE STOCK SHOULD CONSULT THEIR TAX ADVISORS AS TO THE SPECIFIC TAX CONSEQUENCES TO THEM OF THE MERGER, INCLUDING TAX RETURN REPORTING REQUIREMENTS, AND THE APPLICABILITY AND EFFECT OF U.S. FEDERAL, STATE, LOCAL AND OTHER APPLICABLE TAX LAWS.

NASDAQ Stock Market Listing

OncoGenex common stock currently is listed on The NASDAQ Capital Market under the symbol "OGXI". OncoGenex has agreed to use reasonable best efforts to maintain its existing listing on The NASDAQ Capital Market, and to obtain approval for listing on The NASDAQ Capital Market of the shares of OncoGenex common stock that Achieve stockholders will be entitled to receive pursuant to the first merger. In addition, under the Merger Agreement, each party's obligation to complete the merger is subject to the satisfaction or waiver by each of the parties, at or prior to the first merger, of various conditions, including that the existing shares of OncoGenex common stock must have been continually listed on The NASDAQ Capital Market, and OncoGenex must have caused the shares of OncoGenex common stock to be issued in the first merger to be approved for listing on The NASDAQ Capital Market as of the closing of the first merger.

OncoGenex has filed an initial listing application for the combined company with The NASDAQ Capital Market pursuant to NASDAQ "reverse merger" rules. If such application is accepted, OncoGenex anticipates that its common stock will be listed on The NASDAQ Capital Market following the closing of the merger under the trading symbol "ACHV."

Anticipated Accounting Treatment

The merger will be treated by OncoGenex as a reverse merger under the acquisition method of accounting in accordance with accounting principles generally accepted in the United States. For accounting purposes, Achieve is considered to be acquiring OncoGenex in this transaction. Management of OncoGenex and Achieve have made a preliminary estimate of the purchase price calculated as described in Note 1 to the unaudited pro forma condensed combined financial statements and of the fair value of the identifiable tangible and intangible assets acquired and liabilities assumed as of December 31, 2016. The net tangible and intangible assets acquired and liabilities assumed in connection with the transaction will be recorded at their estimated acquisition date fair values. The acquisition method of accounting is dependent upon certain valuations and other studies that have yet to commence or progress to a stage where there is sufficient information for a definitive measurement. A final determination of these estimated fair values, which cannot be made prior to the completion of the transaction, will be based on the actual net tangible and intangible assets of OncoGenex that exist as of the date of completion of the transaction. Any excess of the fair value of the identifiable net assets acquired over the fair value of the consideration transferred will be recognized as a bargain purchase gain. Adjustments to these preliminary estimates are expected to occur and these adjustments could have a material impact on the accompanying unaudited pro forma condensed combined financial information.

Appraisal Rights and Dissenters' Rights

Delaware Law

If the merger is completed, Achieve stockholders who do not deliver a written consent approving the merger are entitled to appraisal rights under Section 262 of the DGCL, or Section 262, provided that they comply with the

conditions established by Section 262. Holders of OncoGenex common stock are not entitled to appraisal rights under Delaware law in connection with the merger.

The discussion below is not a complete summary regarding an Achieve stockholder's appraisal rights under Delaware law and is qualified in its entirety by reference to the text of the relevant provisions of Delaware law, which are attached to this proxy statement/prospectus/information statement as *Annex E.* Stockholders intending to exercise appraisal rights should carefully review *Annex E.* Failure to follow precisely any of the statutory procedures set forth in*Annex E* may result in a termination or waiver of these rights. This summary does not constitute legal or other advice, nor does it constitute a recommendation that Achieve stockholders exercise their appraisal rights under Delaware law.

Under Section 262, where a merger is adopted by stockholders by written consent in lieu of a meeting of stockholders pursuant to Section 228 of the DGCL, either the constituent corporation before the effective date of the merger or the surviving corporation, within 10 days after the effective date of the merger, must notify each stockholder of the constituent corporation entitled to appraisal rights of the approval of the merger, the effective date of the merger and that appraisal rights are available.

If the merger is completed, within 10 days after the effective date of the merger Achieve will notify its stockholders that the merger has been approved, the effective date of the merger and that appraisal rights are available to any stockholder who has not approved the merger. Holders of shares of Achieve capital stock who desire to exercise their appraisal rights must deliver a written demand for appraisal to Achieve within 20 days after the date of mailing of that notice, and that stockholder must not have delivered a written consent approving the merger. A demand for appraisal must reasonably inform Achieve of the identity of the stockholder and that such stockholder intends thereby to demand appraisal of the shares of Achieve capital stock held by such stockholder. Failure to deliver a written consent approving the merger will not in and of itself constitute a written demand for appraisal satisfying the requirements of Section 262. All demands for appraisal should be addressed to Achieve Life Science, Inc., 30 Sunnyside Avenue, Mill Valley, CA 94941, Attention: Chairman, and should be executed by, or on behalf of, the record holder of shares of Achieve capital stock. ALL DEMANDS MUST BE RECEIVED BY ACHIEVE WITHIN 20 DAYS AFTER THE DATE ACHIEVE MAILS A NOTICE TO ITS STOCKHOLDERS NOTIFYING THEM THAT THE MERGER HAS BEEN APPROVED, THE EFFECTIVE DATE OF THE MERGER AND THAT APPRAISAL RIGHTS ARE AVAILABLE TO ANY STOCKHOLDER WHO HAS NOT APPROVED THE MERGER.

If you fail to deliver a written demand for appraisal within the time period specified above, you will be entitled to receive the merger consideration for your shares of Achieve capital stock as provided for in the Merger Agreement, but you will have no appraisal rights with respect to your shares of Achieve capital stock.

To be effective, a demand for appraisal by a holder of shares of Achieve capital stock must be made by, or in the name of, the registered stockholder, fully and correctly, as the stockholder's name appears on the stockholder's stock certificate(s). Beneficial owners who do not also hold the shares of record may not directly make appraisal demands to Achieve. The beneficial owner must, in these cases, have the registered owner, such as a broker, bank or other custodian, submit the required demand in respect of those shares. If shares are owned of record in a fiduciary capacity, such as by a trustee, guardian or custodian, execution of a demand for appraisal should be made by or for the fiduciary; and if the shares are owned of record by more than one person, as in a joint tenancy or tenancy in common, the demand should be executed by or for all joint owners. An authorized agent, including an authorized agent for two or more joint owners, may execute the demand for appraisal for a stockholder of record; however, the agent must identify the record owner or owners and expressly disclose the fact that, in executing the demand, he or she is acting as agent for the record owner. A record owner, such as a broker, who holds shares as a custodian for others, may exercise the record owner's right of appraisal with respect to the shares held for one or more beneficial owners, while not exercising this right for other beneficial owners. In that case, the written demand should state the number of shares as to which appraisal is sought. Where no number of shares is expressly mentioned, the demand will be presumed to cover all shares held in the name of the record

owner. In addition, the stockholder must continuously hold the shares of record from the date of making the demand through the effective time of the merger.

If you hold your shares of Achieve capital stock in a brokerage account or in other custodian form and you wish to exercise appraisal rights, you should consult with your bank, broker or other custodian to determine the appropriate procedures for the making of a demand for appraisal by the custodian.

At any time within 60 days after the effective time of the merger, any stockholder who has demanded an appraisal, but has neither commenced an appraisal proceeding or joined an appraisal proceeding as a named party, has the right to withdraw such stockholder's demand and accept the terms of the merger by delivering a written withdrawal to Achieve. If, following a demand for appraisal, you have withdrawn your demand for appraisal in accordance with Section 262, you will have the right to receive the merger consideration for your shares of Achieve capital stock.

Within 120 days after the effective date of the merger, any stockholder who has delivered a demand for appraisal in accordance with Section 262 will, upon written request to the surviving corporation, be entitled to receive a written statement setting forth the aggregate number of shares not voted in favor of the Merger Agreement and with respect to which demands for appraisal rights have been received and the aggregate number of holders of these shares. This written statement will be mailed to the requesting stockholder within 10 days after the stockholder's written request is received by the surviving corporation or within ten days after expiration of the period for delivery of demands for appraisal, whichever is later. Within 120 days after the effective date of the merger, either the surviving corporation or any stockholder who has delivered a demand for appraisal in accordance with Section 262 may file a petition in the Delaware Court of Chancery demanding a determination of the fair value of the shares held by all such stockholders. Upon the filing of the petition by a stockholder, service of a copy of the petition must be made upon the surviving corporation. The surviving corporation has no obligation to file a petition in the Delaware Court of Chancery in the event there are dissenting stockholders, and Achieve, which is expected to be the surviving corporation, has no present intent to file a petition in the Delaware Court of Chancery. Accordingly, the failure of a stockholder to file a petition within the period specified could nullify the stockholder's previously written demand for appraisal.

If a petition for appraisal is duly filed by a stockholder and a copy of the petition is delivered to the surviving corporation, the surviving corporation will then be obligated, within 20 days after receiving service of a copy of the petition, to provide the Delaware Court of Chancery with a duly verified list containing the names and addresses of all stockholders who have demanded an appraisal of their shares and with whom agreements as to the value of their shares have not been reached by the surviving corporation. After notice to dissenting stockholders who demanded appraisal of their shares, the Delaware Court of Chancery is empowered to conduct a hearing upon the petition, and to determine those stockholders who have complied with Section 262 and who have become entitled to the appraisal rights provided thereby. The Delaware Court of Chancery may require the stockholders who have demanded appraisal for their shares to submit their stock certificates to the Register in Chancery for notation thereon of the pendency of the appraisal proceedings; and if any stockholder fails to comply with that direction, the Delaware Court of Chancery may dismiss the proceedings as to that stockholder.

After determination of the stockholders entitled to appraisal of their shares, the Delaware Court of Chancery will appraise the "fair value" of the shares owned by those stockholders. This value will be exclusive of any element of value arising from the accomplishment or expectation of the merger, but may include a fair rate of interest, if any, upon the amount determined to be the fair value. When the value is determined, the Delaware Court of Chancery will direct the payment of the value, with interest thereon accrued during the pendency of the proceeding, if the Delaware Court of Chancery so determines, to the stockholders entitled to receive the same, upon surrender by the holders of the certificates representing those shares.

In determining fair value, and, if applicable, a fair rate of interest, the Delaware Court of Chancery is required to take into account all relevant factors. In *Weinberger v. UOP, Inc.*, the Delaware Supreme Court discussed the

factors that could be considered in determining fair value in an appraisal proceeding, stating that "proof of value by any techniques or methods which are generally considered acceptable in the financial community and otherwise admissible in court" should be considered, and that "fair price obviously requires consideration of all relevant factors involving the value of a company."

Section 262 provides that fair value is to be "exclusive of any element of value arising from the accomplishment or expectation of the merger." In *Cede & Co. v. Technicolor, Inc.*, the Delaware Supreme Court stated that this exclusion is a "narrow exclusion [that] does not encompass known elements of value," but which rather applies only to the speculative elements of value arising from such accomplishment or expectation. In *Weinberger*, the Delaware Supreme Court construed Section 262 to mean that "elements of future value, including the nature of the enterprise, which are known or susceptible of proof as of the date of the merger and not the product of speculation, may be considered."

You should be aware that the fair value of your shares as determined under Section 262 could be more than, the same as, or less than the value that you are entitled to receive under the terms of the Merger Agreement.

Costs of the appraisal proceeding may be imposed upon the surviving corporation and the stockholders participating in the appraisal proceeding by the Delaware Court of Chancery as the Court deems equitable in the circumstances. Upon the application of a stockholder, the Delaware Court of Chancery may order all or a portion of the expenses incurred by any stockholder in connection with the appraisal proceeding, including, without limitation, reasonable attorneys' fees and the fees and expenses of experts, to be charged pro rata against the value of all shares entitled to appraisal. In the absence of such a determination of assessment, each party bears its own expenses. Any stockholder who had demanded appraisal rights will not, after the effective time of the merger, be entitled to vote shares subject to that demand for any purpose or to receive payments of dividends or any other distribution with respect to those shares, other than with respect to payment as of a record date prior to the effective time; however, if no petition for appraisal is filed within 120 days after the effective time of the merger, or if the stockholder delivers a written withdrawal of his or her demand for appraisal and an acceptance of the terms of the merger within 60 days after the effective time of the merger, then the right of that stockholder to appraisal will cease and that stockholder will be entitled to receive the merger consideration for shares of his or her OncoGenex capital stock pursuant to the Merger Agreement. Any withdrawal of a demand for appraisal made more than 60 days after the effective time of the merger may only be made with the written approval of the surviving corporation. No appraisal proceeding in the Delaware Court of Chancery will be dismissed as to any stockholder without the approval of the court.

Failure to follow the steps required by Section 262 for perfecting appraisal rights may result in the loss of appraisal rights. In view of the complexity of Section 262, stockholders who may wish to dissent from the merger and pursue appraisal rights should consult their legal advisors.

THE MERGER AGREEMENT

The following is a summary of the material terms of the Merger Agreement. A copy of the Merger Agreement is attached as Annex A to this proxy statement/prospectus/information statement and is incorporated by reference into this proxy statement/prospectus/information statement. The Merger Agreement has been attached to this proxy statement/prospectus/information statement to provide you with information regarding its terms. It is not intended to provide any other factual information about OncoGenex, Achieve, Merger Sub 1 or Merger Sub 2. The following description does not purport to be complete and is qualified in its entirety by reference to the Merger Agreement. You should refer to the full text of the Merger Agreement for details of the merger and the terms and conditions of the Merger Agreement.

The Merger Agreement contains representations and warranties that OncoGenex, Merger Sub 1, and Merger Sub 2, on the one hand, and Achieve, on the other hand, have made to one another as of specific dates. These representations and warranties have been made for the benefit of the other parties to the Merger Agreement and may be intended not as statements of fact but rather as a way of allocating the risk to one of the parties if those statements prove to be incorrect. In addition, the assertions embodied in the representations and warranties are qualified by information in confidential disclosure schedules exchanged by the parties in connection with signing the Merger Agreement. While OncoGenex and Achieve do not believe that these disclosure schedules contain information required to be publicly disclosed under the applicable securities laws, other than information that has already been so disclosed, the disclosure schedules do contain information that modifies, qualifies and creates exceptions to the representations and warranties set forth in the attached Merger Agreement. Accordingly, you should not rely on the representations and warranties as current characterizations of factual information about OncoGenex or Achieve, because they were made as of specific dates, may be intended merely as a risk allocation mechanism between OncoGenex, Merger Sub 1 and Merger Sub 2, and Achieve and are modified by the disclosure schedules.

General

Under the Merger Agreement, Ash Acquisition Sub, Inc., or Merger Sub 1, a wholly owned subsidiary of OncoGenex, will merge with and into Achieve, or first merger, with Achieve surviving as a wholly owned subsidiary of OncoGenex, and promptly following that first merger, Achieve shall merge with and into Ash Acquisition Sub 2, Inc., or Merger Sub 2, a wholly owned subsidiary of OncoGenex, with Merger Sub 2 surviving as a wholly owned subsidiary of OncoGenex, or the second merger.

Merger Consideration

At the effective time of the first merger, all outstanding shares of Achieve common stock will convert into the right to receive approximately 4,242.8904 pre-split shares of OncoGenex common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's fully-diluted capitalization, OncoGenex's outstanding capitalization, as well as the payment of cash in lieu of fractional shares.

Exchange Ratio

The exchange ratio was determined using a formula intended to allocate to the existing Achieve stockholders (on a fully diluted basis, referred to as Achieve fully-diluted outstanding shares) a percentage of the combined company based on the relative valuations of Achieve and OncoGenex.

The exchange ratio formula is the quotient obtained by dividing the Achieve merger shares (as defined below) by the Achieve fully-diluted outstanding shares, where:

- Achieve merger shares is the product determined by multiplying the post-closing OncoGenex shares (as defined below) by the Achieve allocation percentage (as defined below).

- Post-closing OncoGenex shares is the quotient determined by dividing the OncoGenex outstanding shares by the OncoGenex allocation percentage (as defined below).
- Achieve allocation percentage is the quotient determined by dividing (i) the sum of the aggregate value (as defined below) minus $26.75 million by (ii) the aggregate value.
- Aggregate value is $107 million.
- OncoGenex allocation percentage is the quotient determined by dividing $26.75 million by the aggregate value.

The Merger Agreement does not include a price-based termination right, so there will be no adjustment to the total number of shares of OncoGenex common stock that Achieve stockholders will be entitled to receive for changes in the market price of OncoGenex common stock. Accordingly, the market value of the shares of OncoGenex common stock issued pursuant to the first merger will depend on the market value of the shares of OncoGenex common stock at the time the first merger closes, and could vary significantly from the market value on the date of this proxy statement/prospectus/information statement.

No fractional shares of OncoGenex common stock will be issuable pursuant to the merger to Achieve stockholders. Instead, each Achieve stockholder who would otherwise be entitled to receive a fraction of a share of OncoGenex common stock, after aggregating all fractional shares of OncoGenex common stock issuable to such stockholder, will be entitled to receive in cash the dollar amount, rounded up to the nearest whole cent, without interest, determined by multiplying such fraction by the volume weighted average trading price of a share of OncoGenex common stock as quoted on The NASDAQ Capital Market, for the five trading days ending the trading day immediately prior to the date the first merger becomes effective.

The Merger Agreement provides that, at the effective time of the first merger, OncoGenex will deposit with an exchange agent acceptable to OncoGenex and Achieve, stock certificates representing the shares of OncoGenex common stock issuable to the Achieve stockholders and a sufficient amount of cash to make payments in lieu of fractional shares.

The Merger Agreement provides that, promptly after the effective time of the first merger, the exchange agent will mail to each record holder of Achieve capital stock immediately prior to the effective time of the first merger a letter of transmittal and instructions for surrendering and exchanging the record holder's Achieve stock certificates for shares of OncoGenex common stock. Upon surrender of an Achieve stock certificate for exchange to the exchange agent, together with a duly signed letter of transmittal and such other documents as the exchange agent or OncoGenex may reasonably require, the Achieve stock certificate surrendered will be cancelled and the holder of the Achieve stock certificate will be entitled to receive the following:

- a certificate representing the number of whole shares of OncoGenex common stock that such holder has the right to receive pursuant to the provisions of the Merger Agreement; and
- cash in lieu of any fractional share of OncoGenex common stock.

At the effective time of the first merger, all holders of certificates representing shares of Achieve common stock that were outstanding immediately prior to the effective time of the first merger will cease to have any rights as stockholders of Achieve. In addition, no transfer of Achieve common stock after the effective time of the first merger will be registered on the stock transfer books of Achieve.

If any Achieve stock certificate has been lost, stolen or destroyed, OncoGenex may, in its discretion, and as a condition to the delivery of any shares of OncoGenex common stock, require the owner of such lost, stolen or destroyed certificate to deliver an affidavit claiming such certificate has been lost, stolen or destroyed and post a bond indemnifying OncoGenex against any claim suffered by OncoGenex related to the lost, stolen or destroyed certificate or any OncoGenex common stock issued in exchange for such certificate as OncoGenex may reasonably request.

From and after the effective time of the first merger, until it is surrendered, each certificate that previously evidenced Achieve common stock will be deemed to represent only the right to receive shares of OncoGenex common stock and cash in lieu of any fractional share of OncoGenex common stock. OncoGenex will not pay dividends or other distributions on any shares of OncoGenex common stock to be issued in exchange for any unsurrendered Achieve stock certificate until the Achieve stock certificate is surrendered as provided in the Merger Agreement.

Treatment of OncoGenex Stock Options and Warrants

As of the effective time of the reverse stock split, OncoGenex will adjust and proportionately decrease the number of shares of OncoGenex's common stock reserved for issuance upon exercise of, and adjust and proportionately increase the exercise price of, all stock options and warrants to acquire OncoGenex's common stock at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors. All stock options and warrants to acquire shares of OncoGenex's common stock that are outstanding immediately prior to the effective time of the first merger will remain outstanding following the effective time of the merger. In addition, as of the effective time of the reverse stock split, OncoGenex will adjust and proportionately decrease the total number of shares of OncoGenex's common stock that may be the subject of future grants under OncoGenex's stock option plans at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors.

Directors and Executive Officers of OncoGenex Following the Merger

Pursuant to the Merger Agreement, the directors of OncoGenex who will not serve as directors following the closing of the first merger will resign at or prior to the closing of the first merger. Effective as of the closing of the first merger, the board of directors of OncoGenex will be fixed at seven members, three of whom will be designated by OncoGenex (two of whom are to be independent under the applicable SEC rules and the criteria established by NASDAQ) and four of whom will be designated by Achieve (of these four directors designed by Achieve, two are to be independent under the applicable SEC rules and the criteria established by NASDAQ). The designees to the board of directors are expected to satisfy the requisite independence requirements for the board of directors of OncoGenex, as well as the sophistication and independence requirements for the required committees pursuant to NASDAQ listing requirements. It is anticipated that the OncoGenex designees will be Scott Cormack, Stewart Parker, and Martin Mattingly and the Achieve designees will include Richard Stewart and Dr. Anthony Clarke, plus two additional independent nominees. Upon consummation of the merger, the OncoGenex board of directors will appoint each of the following as officers of OncoGenex:

Name	Title
Richard Stewart	Chief Executive Officer
Dr. Anthony Clarke	Chief Scientific Officer
Dr. Cindy Jacobs	Chief Medical Officer
John Bencich	Chief Financial Officer

Amendments to the Certificate of Incorporation of OncoGenex

Stockholders of record of OncoGenex common stock on the record date for the OncoGenex special meeting will also be asked to approve the amendment to the certificate of incorporation of OncoGenex to effect the proposed reverse stock split and the amendment to the certificate of incorporation of OncoGenex to change the name of the corporation from "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc." upon consummation of the second merger, each of which requires the affirmative vote of holders of a majority of the outstanding common stock on the record date for the OncoGenex special meeting.

Conditions to the Completion of the Merger

Each party's obligation to complete the merger is subject to the satisfaction or waiver by each of the parties, at or prior to the closing of the merger, of various conditions, which include, in addition to other customary closing conditions, the following:

- the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, must have been declared effective by the SEC in accordance with the Securities Act and must not be subject to any stop order or proceeding, or any proceeding threatened by the SEC, seeking a stop order;
- there must not have been issued any temporary restraining order, preliminary or permanent injunction or other order preventing the consummation of the merger by any court of competent jurisdiction or other governmental entity of competent jurisdiction, and no law, statute, rule, regulation, ruling or decree shall be in effect which has the effect of making the consummation of the merger illegal;
- the holders of a majority of the shares of outstanding Achieve common stock must have adopted and approved the Merger Agreement, the merger and the transactions contemplated by the Merger Agreement, and the holders of a majority of the outstanding shares of OncoGenex common stock must have approved the merger and the issuance of OncoGenex common stock in the merger;
- the existing shares of OncoGenex common stock must have been continually listed on The NASDAQ Capital Market through the closing of the merger and the shares of OncoGenex common stock to be issued in the first merger must be approved for listing on The NASDAQ Capital Market (subject to official notice of issuance) as of the effective time of the second merger;
- certain agreements specified in a schedule to the Merger Agreement must be amended to the reasonable satisfaction of OncoGenex and Achieve;
- there must not be any legal proceeding pending, or overtly threatened in writing by an official of any governmental body in which such governmental body indicates that it intends to conduct any legal proceeding or take any action:
    - challenging or seeking to restrain or prohibit the consummation of the merger;
    - relating to the merger and seeking to obtain from OncoGenex, Merger Sub 1, Merger Sub 2, or Achieve any damages or other relief that may be material to OncoGenex or Achieve;
    - that would materially and adversely affect the right or ability of OncoGenex or Achieve to own the assets or operate the business of OncoGenex or Achieve; or
    - seeking to compel Achieve, OncoGenex, or any subsidiary of the parties to dispose of or hold separate any material assets as a result of the merger;
- the reverse stock split must be completed to the reasonable satisfaction of Achieve;
- certain fundamental representations and warranties of the other party in the Merger Agreement must be true and correct in all respects on the date of the Merger Agreement and on the closing date of the merger with the same force and effect as if made on the date on which the merger is to be completed or, if such representations and warranties address matters as of a particular date, then such fundamental representations and warranties shall be true and correct as of that particular date;
- certain representations and warranties regarding intellectual property of the other party in the Merger Agreement must be true and correct in all material respects on the date of the Merger Agreement and on the closing date of the merger with the same force and effect as if made on the date on which the merger is to be completed (without giving effect to any references therein to any material adverse effect or other materiality qualifiers) or, if such representations and warranties address matters as of a particular date, then such intellectual property representations and warranties shall be true and correct in all material respects as of that particular date;

- certain representations and warranties regarding the capitalization of the other party in the Merger Agreement must be true and correct in all respects on the date of the Merger Agreement and on the closing date of the merger with the same force and effect as if made on the date on which the merger is to be completed or, if such representations and warranties address matters as of a particular date, then such capitalization representations and warranties shall be true and correct as of that particular date, except for inaccuracies which are de minimis, individually or in the aggregate;
- all other representations and warranties of the other party in the Merger Agreement must be true and correct on the date of the Merger Agreement and on the closing date of the merger with the same force and effect as if made on the date on which the merger is to be completed or, if such representations and warranties address matters as of a particular date, then such representations and warranties as of that particular date, except where the failure of these representations and warranties to be true and correct, individually or in the aggregate, would not reasonably be expected to have a material adverse effect on the other party;
- the other party to the Merger Agreement must have performed or complied with in all material respects all of its covenants and obligations in the Merger Agreement required to be performed or complied with by it on or before the closing of the second merger;
- the other party must have delivered certain certificates and other documents required under the Merger Agreement for the closing of the merger; and
- each party to the Merger Agreement must have received copies of a lock-up agreement executed by certain officers and directors of the other party restricting the sale of OncoGenex shares following the merger.

In addition, the obligation of OncoGenex, Merger Sub 1 and Merger Sub 2 to complete the merger is further subject to the satisfaction or waiver of the following conditions:

- there must not be any legal proceeding pending that, in the reasonable judgment of OncoGenex, would result in an outcome that is material and adverse to OncoGenex, Achieve, or the surviving corporation which:
    - challenges or seeks to restrain or prohibit the consummation of the merger or any of the other contemplated transactions;
    - relates to the merger or the other contemplated transactions and seeks to obtain from OncoGenex, Achieve, or the surviving corporation any damages or other relief that may be material to OncoGenex, Achieve, or the surviving corporation; or
    - would materially and adversely affect the right or ability of OncoGenex to own the assets or operate the business of Achieve;
- OncoGenex must have received a copy of the CVR agreement duly executed by Achieve and the rights agent;
- OncoGenex must have received a copy of the lock-up agreement from certain stockholders of Achieve set forth on a schedule to the Merger Agreement;
- the liabilities of Achieve, other than transaction expenses, must not be more than $1.2 million and such liabilities must be fully discharged without consent or notice of the applicable creditor and without penalty; and
- since the date of the Merger Agreement, there must have been no effect, change, event, circumstance, or development that is continuing and that has or would reasonably be expected to have a material adverse effect on the business, financial condition, assets, liabilities, or results of operations of Achieve and its subsidiaries, taken as a whole, each referred to as a material adverse effect as it relates to

Achieve. The Merger Agreement provides that certain events shall not be considered a material adverse effect on Achieve, including without limitation:

- any rejection by a governmental body of a registration or filing by Achieve relating to intellectual property owned, licensed or controlled by Achieve;
- any effect, change event, circumstance, or development resulting from the announcement or pendency of the merger or the contemplated transactions;
- any effect, change, event, circumstance, or development resulting from general economic or political conditions generally affecting the industries in which Achieve operates;
- any change in accounting requirements or principles or any change in applicable laws; or
- any acts of terrorism or war.

In addition, the obligation of Achieve to complete the merger is further subject to the satisfaction or waiver of the following conditions:

- OncoGenex must have delivered to Achieve written resignations of the officers and directors of OncoGenex who will not be continuing as officers or directors and general releases from these former officers and directors reasonably satisfactory to Achieve;
- Achieve must have received a copy of the lock-up agreement from certain stockholders of OncoGenex set forth on a schedule to the Merger Agreement;
- there must not be any pending legal proceeding (other than a legal proceeding related to the merger brought by any current or former stockholder of OncoGenex for breach of fiduciary duty or state or federal securities or disclosures laws relating) relating to the merger that, in the reasonable judgment of Achieve, would result in an outcome that is material and adverse to OncoGenex or Achieve, which:
  - challenges or seeks to restrain or prohibit the consummation of the merger;
  - seeks to obtain from OncoGenex or Achieve any damages or other relief that would reasonably be likely to be material to OncoGenex or Achieve; or
  - would materially and adversely affect the right or ability of OncoGenex to own the assets or operate the business of Achieve.
- since the date of the Merger Agreement, there must have been no effect, change, event, circumstance, or development that is continuing and that has or would reasonably be expected to have a material adverse effect on the business, financial condition, assets, liabilities, or results of operations of OncoGenex and its subsidiaries, taken as a whole, each referred to as a material adverse effect as it relates to OncoGenex. The Merger Agreement provides that certain events shall not be considered a material adverse effect on OncoGenex, including without limitation:
- the existence of actual litigation itself (but not the facts or circumstances underlying such litigation), arising from allegations of a breach of a fiduciary duty relating to the Merger Agreement;
- the termination, sublease or assignment of OncoGenex's facility lease, or failure to terminate, sublease or assign the facility lease;
- any change in the stock price or trading volume of OncoGenex stock (but not the underlying causes of such changes or failures);
- any effect, change, event, circumstance, or development resulting from general economic or political conditions generally affecting the industries in which OncoGenex operates;
- any change in accounting requirements or principles or any change in applicable laws;

- any effect, change, event, circumstance, or development resulting from the announcement or pendency of the merger; or
- any acts of terrorism or war.

Representations and Warranties

The Merger Agreement contains customary representations and warranties of OncoGenex, its subsidiaries, and Achieve for a transaction of this type relating to, among other things:

- corporate organization, organizational and governing documents, and power, and similar corporate matters;
- subsidiaries;
- capitalization;
- financial statements and with respect to OncoGenex, documents filed with the SEC and the accuracy of information contained in those documents;
- material changes or events;
- title to assets;
- real property and leaseholds;
- intellectual property;
- the validity of material contracts to which the parties or their subsidiaries are a party and any violation, default, breach, or consents required to such contracts;
- liabilities;
- regulatory compliance, permits and restrictions;
- tax matters;
- employee and labor matters and benefit plans;
- environmental matters;
- insurance;
- legal proceedings and orders;
- authority to enter into the Merger Agreement and the related agreements;
- with respect to OncoGenex, transactions with affiliates;
- votes required for completion of the merger and approval of the proposals that will come before the OncoGenex special meeting and that will be the subject of Achieve stockholder approval;
- any brokerage or finder's fee or other fee or commission in connection with the merger;
- with respect to OncoGenex, the valid issuance in the merger of the OncoGenex common stock; and
- with respect to each of Achieve and OncoGenex, accuracy of the information supplied by Achieve or OncoGenex, as applicable, for inclusion in this registration statement.

The representations and warranties are, in many respects, qualified by materiality and knowledge, and will not survive the merger, but their accuracy forms the basis of some of the conditions to the obligations of OncoGenex and Achieve to complete the merger.

No Solicitation

Each of OncoGenex and Achieve agreed that, except as described below, OncoGenex and Achieve and any of their respective subsidiaries will not, nor will either party or any of its subsidiaries authorize or permit any of the officers, directors, employees, agents, investment bankers, attorneys, accountants, advisors or representatives to, directly or indirectly:

- solicit, initiate, encourage, induce or facilitate any "acquisition proposal," as defined below;
- furnish any information with respect to it to any person in connection with or in response to an acquisition proposal or inquiry, indication of interest or request for information that could reasonably be expected to lead to an acquisition proposal;
- engage in discussions or negotiations with any person with respect to any acquisition proposal or inquiry, indication of interest or request for information that could reasonably be expected to lead to an acquisition proposal;
- approve, endorse or recommend an acquisition proposal;
- execute or enter into any letter of intent or any contract contemplating or otherwise relating to an acquisition transaction; or
- grant any waiver or release under any confidentiality, standstill or similar agreement, other than to either OncoGenex or Achieve.

An "acquisition proposal" means any offer or proposal, whether written or oral contemplating or otherwise relating to any "acquisition transaction," as defined below.

An "acquisition transaction" means the following:

- any merger, consolidation, amalgamation, share exchange, business combination, issuance or acquisition of securities, reorganization, recapitalization, tender offer, exchange offer or similar transaction: in which OncoGenex, Achieve, Merger Sub 1 or Merger Sub 2 is a constituent corporation, in which any individual, entity, governmental entity, or "group," as defined under applicable securities laws, directly or indirectly acquires beneficial or record ownership of securities representing more than 15% of the outstanding securities of any class of voting securities of OncoGenex, Achieve, Merger Sub 1 or Merger Sub 2 or any of their subsidiaries or in which OncoGenex, Achieve, Merger Sub 1 or Merger Sub 2 or any of their subsidiaries issues securities representing more than 15% of the outstanding voting securities of any class of voting securities of such party or any of its subsidiaries;
- any sale, lease, exchange, transfer, license, acquisition or disposition of any business or assets that constitute or account for 15% or more of the consolidated book value or the fair market value of the assets of OncoGenex, Achieve. Merger Sub 1 or Merger Sub 2 and their subsidiaries, taken as a whole; and
- any liquidation or dissolution of OncoGenex, Achieve, Merger Sub 1 or Merger Sub 2.

With respect to OncoGenex, an acquisition transaction will not be deemed to include an arrangement under which the rights to develop, manufacture and/or commercialize certain pharmaceutical products based on OncoGenex's apatorsen asset are granted, licensed, assigned or otherwise conveyed to a third party. However, before obtaining the applicable OncoGenex or Achieve stockholder approvals required to consummate the merger, each party may furnish information regarding such party to, and may enter into discussions or negotiations with, any third party in response to a bona fide written acquisition proposal made or received after the date of the Merger Agreement, which such party's board of directors determines in good faith, after consultation with such party's financial advisor and its outside legal counsel, constitutes or is reasonably likely to result in a "superior offer," as defined below, if:

- the acquisition proposal did not result from a breach of the no solicitation provisions of the Merger Agreement described above;

- such party gives the other party at least one business day's prior notice of the identity of the third party and of that party's intention to furnish information to, or enter into discussions with, such third party before furnishing any information or entering into discussions with such third party;
- such party receives from the third party an executed confidentiality agreement containing provisions at least as favorable to such party as those contained in the confidentiality agreement between OncoGenex and Achieve; and
- substantially contemporaneously with the furnishing of any information to a third party, such party furnishes the same information to the other party to the extent not previously furnished.

A "superior offer" means an unsolicited, bona fide written offer by a third party to enter into a merger, consolidation, amalgamation, share exchange, business combination, issuance or acquisition of securities, reorganization, recapitalization, tender offer, exchange offer or other similar transaction as a result of which either OncoGenex's or Achieve's stockholders prior to such transaction in the aggregate cease to own at least 50% of the voting securities of the entity surviving or resulting from such transaction, or the ultimate parent entity thereof, or in which a person or "group," as defined under applicable securities laws, directly or indirectly acquires beneficial or record ownership of securities representing 50% or more of the party's capital stock or a sale, lease, exchange transfer, license, acquisition or disposition of any business or other disposition of at least 50% of the assets of the party or its subsidiaries, taken as a whole, in a single transaction or a series of related transactions that was not obtained or made as a direct or indirect result of a breach, or violation, of the Merger Agreement, and is on terms and conditions that the board of directors of the party receiving the offer determines in good faith, after obtaining and taking into account such matters as the board of directors of such party deems relevant following consultation with its outside legal counsel and financial advisor:

- is reasonably likely to be more favorable, from a financial point of view, to that party's stockholders than the terms of the merger; and
- is reasonably capable of being consummated.

An offer will not be a superior offer if any financing required to consummate the transaction contemplated by such offer is not committed and is not reasonably capable of being obtained by such third party or if the consummation of such transaction is contingent on any such financing being obtained.

The Merger Agreement also provides that each party will promptly advise the other of the status and terms of, and keep the other party fully informed with respect to, any acquisition proposal or any inquiry, indication of interest or request for information that could reasonably be expected to lead to an acquisition proposal or any change or proposed change to that acquisition proposal or inquiry, indication of interest or request for information that could reasonably be expected to lead to an acquisition proposal.

Meetings of Stockholders

OncoGenex is obligated under the Merger Agreement to use commercially reasonable efforts to take all action necessary to call, give notice of and hold a meeting of its stockholders for the purposes of voting on the issuance of shares of OncoGenex common stock in the first merger.

Achieve is obligated under the Merger Agreement to obtain written consents of its stockholders sufficient to adopt the Merger Agreement thereby approving the merger and related transactions within 24 hours of the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, being declared effective by the SEC.

Covenants; Conduct of Business Pending the Merger

During the period between signing the Merger Agreement and the closing, Achieve agreed that it will conduct its business in the ordinary course in accordance with past practices and in compliance with all applicable laws,

regulations, and certain contracts, and to take other agreed-upon actions. Achieve also agreed that, subject to certain limited exceptions, without the consent of OncoGenex, it will not, during the period prior to closing of the merger:

- declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of capital stock; or repurchase, redeem or otherwise reacquire any shares of capital stock or other securities (except for shares of common stock from terminated employees);
- amend the certificate of incorporation, bylaws or other charter or organizational documents of Achieve or its subsidiaries, or effect or been a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction;
- sell, issue or grant, or authorize the issuance of, or make any commitments to do any of the foregoing, other than as contemplated by the Merger Agreement: any capital stock or other security; any option, warrant or right to acquire any capital stock or any other security; or any instrument convertible into or exchangeable for any capital stock or other security;
- form any subsidiary or acquire any equity interest or other interest in any other entity;
- lend money to any person; incur or guarantee any indebtedness for borrowed money; issue or sell any debt securities or options, warrants, calls or other rights to acquire any debt securities; or guarantee any debt securities of others;
- adopt, establish or enter into any employee plan; cause or permit any employee plan to be amended other than as required by law; other than in the ordinary course of business, pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, fringe benefits or other compensation or remuneration payable to, any of its directors, officers, employees or consultants; or increase the severance or change of control benefits offered to any current or new employees, directors or consultants;
- enter into any material transaction outside the ordinary course of business;
- acquire any material asset or sell, lease or otherwise irrevocably dispose of any of its assets or properties, or grant any encumbrance with respect to such assets or properties;
- other than as required by law, make, change or revoke any material tax election; file any material amendment to any tax return; adopt or change any accounting method in respect of taxes; change any annual tax accounting period; enter into any tax allocation agreement, tax sharing agreement or tax indemnity agreement, other than commercial contracts entered into in the ordinary course of business with vendors, customers or landlords; enter into any closing agreement with respect to any tax; settle or compromise any claim, notice, audit report or assessment in respect of material taxes; apply for or enter into any ruling from any tax authority with respect to taxes; surrender any right to claim a material tax refund; or consent to any extension or waiver of the statute of limitations period applicable to any material tax claim or assessment;
- enter into, amend or terminate any material contract, subject to certain exceptions;
- make any material change to the pricing or royalties or other payments set or charged by Achieve or any of its subsidiaries to its customers or licensees, agree to change pricing or royalties or other payments set or charged by persons who have licensed intellectual property to Achieve or any of its subsidiaries, or materially change pricing or royalties or other payments set or charged by persons who have licensed intellectual property to Achieve or its subsidiaries.
- enter into any contract relating to, arising from, or in connection with licensing, sub-licensing, or other similar arrangements concerning Achieve's rights to certain intellectual property; or
- authorize any expenditures in excess of $10,000 individually or $25,000 in the aggregate outside the ordinary course of business.

During the period between signing the Merger Agreement and the closing, OncoGenex agreed that it will conduct its business in the ordinary course with a view towards winding down its operations and in compliance with all applicable laws, regulations and certain contracts, and to take other agreed-upon actions. OncoGenex also agreed that, subject to certain limited exceptions, without the consent of Achieve, it will not, during the period prior to the closing of the merger:

- declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of capital stock; or repurchase, redeem or otherwise reacquire any shares of capital stock or other securities (except for shares of common stock from terminated employees, directors or consultants of OncoGenex);
- except for certain contractual commitments in place at the time of the signing of the Merger Agreement, sell, issue or grant, or authorize the issuance of: any capital stock or other security (except for OncoGenex common stock issued upon the valid exercise of outstanding OncoGenex options); any option, warrant or right to acquire any capital stock or any other security; or any instrument convertible into or exchangeable for any capital stock or other security;
- amend the certificate of incorporation, bylaws or other charter or organizational documents of OncoGenex or its subsidiaries, or effect or become a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split (other than the reverse stock split described in this proxy statement/prospectus/information statement) or similar transaction except as related to the proposed transactions under the Merger Agreement;
- form any subsidiary or acquire any equity interest or other interest in any other entity;
- lend money to any person; incur or guarantee any indebtedness for borrowed money; issue or sell any debt securities or options, warrants, calls or other rights to acquire any debt securities; or guarantee any debt securities of others;
- adopt, establish or enter into any OncoGenex employee plan; cause or permit any OncoGenex employee plan to be amended other than as required by law or in order to make amendments for the purposes of Section 409A of the Code, subject to prior review and approval (with such approval not to be unreasonably withheld) by Achieve; other than in the ordinary course of business, pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, fringe benefits or other compensation or remuneration payable to, any of its directors, employees, or consultants or increase the severance or change of control benefits offered to any current or new directors, employees, or consultants; provided, that, OncoGenex may pay severance and retention payments owed under existing OncoGenex employee plans to current employees in connection with their termination of employment;
- enter into any material transaction outside the ordinary course of business;
- acquire any material asset or sell, lease or otherwise irrevocably dispose of any of its assets or properties, or grant any encumbrance with respect to such assets or properties, except in connection with OncoGenex's wind down of operations;
- other than as required by law, make, change or revoke any material tax election; file any material amendment to any tax return; adopt or change any accounting method in respect of taxes; change any annual tax accounting period; enter into any tax allocation agreement, tax sharing agreement or tax indemnity agreement, other than commercial contracts entered into in the ordinary course of business with vendors, customers or landlords; enter into any closing agreement with respect to any tax; settle or compromise any claim, notice, audit report or assessment in respect of material taxes; apply for or enter into any ruling from any tax authority with respect to taxes; surrender any right to claim a material tax refund; or consent to any extension or waiver of the statute of limitations period applicable to any material tax claim or assessment;

- enter into, amend or terminate any material contract;
- make any material change to the pricing or royalties or other payments set or charged by OncoGenex or any of its subsidiaries to its customers or licensees, agree to change pricing or royalties or other payments set or charged by persons who have licensed intellectual property to OncoGenex or any of its subsidiaries, or materially change pricing or royalties or other payments set or charged by persons who have licensed intellectual property to OncoGenex or its subsidiaries;
- enter into any contract relating to, arising from, or in connection with licensing, sub-licensing, or other similar arrangements concerning OncoGenex's rights to certain intellectual property;
- authorize any expenditures in excess of $10,000 individually or $25,000 in the aggregate other than in connection with OncoGenex's wind down of operations; or
- execute or enter into any letter of intent or any contract contemplating or otherwise relating to the grant, license, assignment or conveyance of the rights to develop, manufacture and/or commercialize certain pharmaceutical products based on OncoGenex's apatorsen asset.

Other Agreements

Each of OncoGenex and Achieve has agreed to use its commercially reasonable efforts to:

- file or otherwise submit all applications, notices, reports and other documents reasonably required to be filed with a governmental entity with respect to the merger;
- take all actions necessary to complete the merger;
- make all filings and other submissions and give all notices required to be made and given in connection with the merger;
- provide the other party with reasonable access during normal business hours to such party's personnel and assets and to all existing books, records, tax returns, work papers and other documents and information relating to such party and its subsidiaries;
- provide the other party with such copies of the existing books, records, tax returns, work papers, product data, and other documents and information relating to such party and its subsidiaries, and with such additional financial, operating and other data and information regarding such party and its subsidiaries as the other party may reasonably request;
- permit the other party's officers and other employees to meet, upon reasonable notice and during normal business hours, with the chief financial officer and other officers and managers of such party responsible for such party's financial statements and the internal controls of such party in order to enable the other party to satisfy its obligations under the Sarbanes-Oxley Act;
- obtain all consents, approvals or waivers reasonably required in connection with the transactions contemplated by the Merger Agreement;
- satisfy the conditions precedent to the consummation of the Merger Agreement;
- cause this proxy statement/prospectus/information statement to comply with the rules and regulations promulgated by the SEC, to respond promptly to any comments of the SEC or its staff and to have t into this proxy statement/prospectus/information statement declared effective under the Securities Act as promptly as practicable after it is filed with the SEC;
- cause this proxy statement/prospectus/information statement to be mailed to OncoGenex's stockholders as
- promptly as practicable after this proxy statement/prospectus/information statement is declared effective; and

- lift any injunction prohibiting, or any other legal bar to, the merger or other transactions contemplated by the Merger Agreement.

OncoGenex and Achieve agreed that, among other things:

- subject to certain exceptions, OncoGenex will use commercially reasonable efforts to obtain all regulatory approvals needed to ensure that the OncoGenex common stock to be issued in the merger will be registered or qualified or exempt from registration or qualification under the securities law of every jurisdiction of the United States in which any registered holder of Achieve capital stock has an address of record on the record date;
- Achieve will use commercially reasonable efforts to deliver a letter from Achieve's independent accounting firm to OncoGenex in a form customary in scope and substance for letters delivered by independent public accountants in connection with registration statements similar to this proxy statement/prospectus/information statement;
- Achieve and OncoGenex will use reasonable best efforts and take any action reasonably necessary to mitigate and/or minimize the impact of the tax consequences of Section 280G of the Code;
- OncoGenex will use reasonable best efforts (i) to maintain the listing of its common stock on The NASDAQ Capital Market, (ii) to obtain approval of the listing of the combined company on The NASDAQ Capital Market, and (iii) to cause the shares of OncoGenex common stock to be issued in the merger to be approved for listing on The NASDAQ Capital Market;
- OncoGenex will notify and provide copies to Achieve, within 48 hours of receipt, of any notice from The NASDAQ Capital Market with respect to a potential, proposed, or actual delisting or suspension of OncoGenex common stock on The NASDAQ Capital Market and OncoGenex will respond as promptly as practicable to any inquiries, hearings or requests from The NASDAQ Capital Market;
- OncoGenex and Achieve will use reasonable best efforts to cause the merger to qualify as a "reorganization" within the meaning of Section 368(a) of the Code;
- OncoGenex will use reasonable best efforts to maintain the effectiveness of its existing shelf registration statement on Form S-3, File No. 333-207670, through the closing;
- for a period of six years after the closing of the first merger, OncoGenex will indemnify each of the directors and officers of OncoGenex, Achieve, and their subsidiaries and other persons party to an agreement for indemnification with OncoGenex to the fullest extent permitted under the DGCL and will maintain directors' and officers' liability insurance for such persons; and
- Achieve will purchase and OncoGenex will maintain, insurance policies for six years effective as of the closing, maintaining the directors' and officers' liability insurance policies maintained by Achieve and OncoGenex, respectively.

Termination of the Merger Agreement

The Merger Agreement may be terminated at any time before the completion of the first merger, whether before or after the required stockholder approvals to complete the merger has been obtained, as set forth below:

- by mutual written consent duly authorized by the board of directors of each of OncoGenex and Achieve;
- by either OncoGenex or Achieve if the merger has not been consummated by July 31, 2017; provided, however, that this right to terminate the Merger Agreement will not be available to any party whose action or failure to act has been a principal cause of the failure of the merger to occur on or before such date and such action or failure to act constitutes a breach of the Merger Agreement, and this right to terminate will not be available for an additional 60 days upon request of either party if the waiting

period under HSR Act has not expired, if applicable, or a request for additional information has been made by any government authority, or in the event that the SEC has not declared effective the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, by such date;

- by OncoGenex or Achieve if a court of competent jurisdiction or governmental entity has issued a final and nonappealable order, decree or ruling or taken any other action that permanently restrains, enjoins or otherwise prohibits the merger;
- by OncoGenex if Achieve did not obtain the written consent of a requisite number of its stockholders necessary to adopt the Merger Agreement and approve the merger and related matters within 24 hours of the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, becoming effective, but this right to terminate the Merger Agreement will not be available to OncoGenex once Achieve obtains such approval;
- by OncoGenex or Achieve if the stockholders of OncoGenex do not approve the merger or the issuance of OncoGenex common stock in the merger at the OncoGenex stockholders' meeting (including any adjournments and postponements thereof), but OncoGenex may not terminate the Merger Agreement pursuant to this provision if the failure to obtain the approval of OncoGenex stockholders was caused by the action or failure to act of OncoGenex and such action or failure to act constitutes a material breach by OncoGenex of the Merger Agreement;
- by Achieve, at any time prior to the approval by OncoGenex's stockholders of the merger and the issuance of the shares of OncoGenex common stock pursuant to the merger, if:
  - the OncoGenex board of directors fails to include in this this proxy statement/prospectus/information statement its recommendation that the stockholders of OncoGenex vote to approve the issuance of OncoGenex common stock in connection with the merger and the reverse stock split;
  - the OncoGenex board of directors approves, endorses or recommends any acquisition proposal, as defined in the section entitled "The Merger Agreement—No Solicitation";
  - OncoGenex enters into any letter of intent or similar document or any contract relating to any acquisition proposal, other than a confidentiality agreement permitted pursuant to the Merger Agreement; or
  - OncoGenex or any director or officer of OncoGenex willfully and intentionally breaches the no solicitation provisions set forth in the Merger Agreement (each of the above clauses is referred to as an OncoGenex triggering event);
- by OncoGenex, at any time prior to the adoption of the Merger Agreement by the stockholders of Achieve, if:
  - the Achieve board of directors fails to include in this proxy statement/prospectus/information statement its recommendation that the Achieve stockholders vote to adopt the Merger Agreement;
  - the Achieve board of directors approves, endorses or recommends any acquisition proposal, as defined in the section entitled "The Merger Agreement—No Solicitation";
  - Achieve enters into any letter of intent or similar document or any contract relating to any acquisition proposal, other than a confidentiality agreement permitted pursuant to the Merger Agreement; or
  - Achieve or any director, officer or agent of Achieve willfully and intentionally breaches the no solicitation provisions set forth in the Merger Agreement (each of the above clauses is referred to as an Achieve triggering event); or
- by OncoGenex or Achieve if the other party has breached any of its representations, warranties, covenants or agreements contained in the Merger Agreement or if any representation or warranty of the

other party has become inaccurate, in either case such that the conditions to the closing of the merger would not be satisfied as of time of such breach or inaccuracy, but if such breach or inaccuracy is curable, then the Merger Agreement will not terminate pursuant to this provision as a result of a particular breach or inaccuracy until the earlier of the expiration of a 30-day period after delivery of written notice of such breach or inaccuracy and the breaching party ceasing to exercise commercially reasonable efforts to cure such breach, if such breach has not been cured, however, OncoGenex and Achieve have agreed that any breach of the no solicitation provisions set forth in the Merger Agreement are not curable.

Termination Fees

Fee payable by OncoGenex

OncoGenex must pay Achieve a termination fee of $0.5 million if:

- the Merger Agreement is terminated by either OncoGenex or Achieve because the stockholders of OncoGenex do not approve the merger or the issuance of OncoGenex common stock in the merger at the OncoGenex stockholders' meeting (including any adjournments and postponements thereof) and an acquisition proposal, as defined above in the section entitled "The Merger Agreement—No Solicitation," with respect to OncoGenex was publicly announced, disclosed or otherwise communicated to the board of directors of OncoGenex prior to the OncoGenex stockholders' meeting and OncoGenex enters into a definitive agreement for, or consummates, an acquisition transaction, as defined above in the section entitled "The Merger Agreement—No Solicitation," that results or would result in any third party beneficially owning securities of OncoGenex representing more than 50% of the voting power of the outstanding securities of OncoGenex or owning or exclusively licensing tangible or intangible assets representing more than 50% of the fair market value of the assets of OncoGenex and its subsidiaries, taken as a whole, within 12 months of the termination; or
- the Merger Agreement is terminated by Achieve at any time prior to the approval of the merger and the issuance of OncoGenex common stock in the merger by the stockholders of OncoGenex because an OncoGenex triggering event has occurred, as defined above in the section entitled "The Merger Agreement—Termination of the Merger Agreement" and an acquisition proposal, as defined above in the section entitled "The Merger Agreement—No Solicitation," with respect to OncoGenex was publicly announced, disclosed or otherwise communicated to the board of directors of OncoGenex prior to the OncoGenex stockholders' meeting.

In addition, OncoGenex must pay Achieve a termination fee of $1.0 million if OncoGenex or any director, officer or agent of OncoGenex breaches the no solicitation provisions set forth in the Merger Agreement.

In connection with the negotiation of the Merger Agreement, OncoGenex and Achieve entered into a letter agreement under which OncoGenex agreed to reimburse Achieve for reasonable out-of-pocket legal expenses up to $0.2 million incurred by Achieve in the negotiation of the Merger Agreement. In addition, under the Merger Agreement, OncoGenex must reimburse Achieve for expenses incurred by Achieve in connection with the Merger Agreement and the transactions contemplated thereby, up to a maximum of $0.5 million, including the reimbursement of up to $0.2 million OncoGenex agreed to pay Achieve in connection with the negotiation of the Merger Agreement, if:

- the Merger Agreement is terminated by Achieve because OncoGenex, Merger Sub 1 or Merger Sub 2 has breached any of its representations, warranties, covenants or agreements contained in the Merger Agreement or if any representation or warranty of OncoGenex, Merger Sub 1 or Merger Sub 2 has become inaccurate, such that Achieve's conditions to the closing of the merger would not be satisfied as of time of such breach or inaccuracy, subject to certain rights to cure such breaches; or
- the Merger Agreement is terminated by Achieve because an OncoGenex triggering event has occurred, as defined above in the section entitled "The Merger Agreement—Termination of the Merger Agreement."

Fee payable by Achieve

Achieve must pay OncoGenex a termination fee of $0.5 million if:

- the Merger Agreement is terminated by OncoGenex because Achieve failed to obtain the written consent of a requisite number of its stockholders necessary to adopt the Merger Agreement and approve the merger and related matters within 24 hours of the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, being declared effective by the SEC; or
- the Merger Agreement is terminated by OncoGenex at any time prior to the approval of the merger by the stockholders of Achieve because an Achieve triggering event has occurred, as defined above in the section entitled "The Merger Agreement—Termination of the Merger Agreement."

In addition, Achieve must pay OncoGenex a termination fee of $1.0 million if Achieve or any director, officer or agent of Achieve breaches the no solicitation provisions set forth in the Merger Agreement.

Achieve must reimburse OncoGenex for expenses incurred by OncoGenex in connection with the Merger Agreement and the transactions contemplated thereby, up to a maximum of $0.5 million, if:

- the Merger Agreement is terminated by OncoGenex because Achieve failed to obtain the written consent of a requisite number of its stockholders necessary to adopt the Merger Agreement and approve the merger and related matters within 24 hours of the registration statement on Form S-4, of which this proxy statement/prospectus/information statement is a part, being declared effective by the U.S. Securities and Exchange Commission;
- the Merger Agreement is terminated by OncoGenex at any time prior to the approval of the merger by the stockholders of Achieve because an Achieve triggering event has occurred, as defined above in the section entitled "The Merger Agreement—Termination of the Merger Agreement"; or
- the Merger Agreement is terminated by OncoGenex because Achieve has breached any of its representations, warranties, covenants or agreements contained in the Merger Agreement or if any representation or warranty of Achieve has become inaccurate, in either case such that OncoGenex's conditions to the closing of the merger would not be satisfied as of time of such breach or inaccuracy, subject to certain rights to cure such breaches.

Amendment

The Merger Agreement may be amended by the parties at any time, except that after the Merger Agreement has been adopted and approved by the stockholders of OncoGenex or Achieve, no amendment which by law requires further approval by the stockholders of OncoGenex or Achieve, as the case may be, shall be made without such further approval.

AGREEMENTS RELATED TO THE MERGER

CVR Agreement

Under the terms of the merger agreement, OncoGenex will distribute and issue contingent value rights, or CVRs, to holders of OncoGenex common stock prior to completion of the first merger. OncoGenex expects that one CVR will be issued for each share of OncoGenex common stock outstanding as of the record date for the distribution of the CVRs.

OncoGenex plans to enter into a CVR agreement with Computershare Trust Company, N.A., as rights agent, for the purpose of establishing the terms and conditions of the CVRs and the procedures by which payments, if any, will be made to the CVR holders. The form of the CVR agreement is attached as *Annex F* to this proxy statement/prospectus/information statement and is incorporated by reference into this proxy statement/prospectus/information statement. OncoGenex and Achieve urge you to read the form of the CVR agreement carefully and in its entirety.

The CVRs will not be certificated and will not be attached to the shares of OncoGenex common stock. The CVRs will be nontransferable, subject to certain limited exceptions as set forth in the CVR agreement. The CVRs will not represent an equity or ownership interest in the combined company or otherwise, and CVR holders will have no voting or dividend rights. The rights of CVR holders will be limited to those rights expressly set forth in the CVR agreement.

Pursuant to the CVR agreement, CVR holders, under certain circumstances, may have rights to receive a portion of certain cash, equity or other consideration received by the combined company as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to any pharmaceutical product or combination of co-administered pharmaceutical products that contain an antisense inhibitor designed to inhibit hsp27 as an active pharmaceutical ingredient and are covered by OncoGenex's patents or license agreements (referred to herein as the Apatorsen Product). The aggregate consideration that may distributed to the holders of the CVRs will be equal to 80% of the consideration received by the combined company as a result of the achievement of the milestones less certain agreed to offsets, as determined pursuant to the CVR agreement.

Subject to the terms and conditions of the CVR agreement, for a period of six months after February 17, 2017, OncoGenex and the combined company will use certain efforts described below to enter into a term sheet for an partnering arrangement, collaboration agreement, license or sublicense agreement, asset sale, stock sale or similar arrangement for the right to develop, manufacture and/or commercialize the Apatorsen Product. If a term sheet is entered into prior to the expiration of the six month period, OncoGenex and the combined company will use certain efforts described below to enter into an agreement based on the term sheet. If a term sheet is not entered into prior to the expiration of the six month period, no payments will be made to the holders of CVRs.

Under the CVR agreement, OncoGenex and Achieve defined the combined company's efforts to enter into a term sheet and agreement regarding the Apatorsen Product to mean that the combined company promptly assigns responsibility for the negotiation of a term sheet or agreement to certain individuals designated by the combined company's management and the combined company's board of directors regularly monitor the progress of these individuals and promptly evaluate any proposed term sheet or agreement. However, the CVR Agreement does not require the combined company to approve any term sheet or agreement if the combined company's board of directors determines that any such approval would not be in the best interests of the combined company's stockholders or would otherwise violate any fiduciary duties of the combined company's board of directors.

OncoGenex is currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen, but has not yet identified such a party or set any milestones. OncoGenex cannot give any assurance that it will be able to identify and enter into an agreement with a third party to develop and potentially

commercialize apatorsen by August 17, 2017, or if it does, that any milestones will be set or any consideration will ever be received by the combined company or distributed to the CVR holders. Therefore, OncoGenex stockholders will not be able to determine the value of the CVRs, if any, prior to the special meeting of OncoGenex stockholders since the value of the CVRs is contingent upon the occurrence of future events that are not yet known. Furthermore, if OncoGenex and Achieve agree, the terms of the CVR agreement as currently contemplated may be changed prior to OncoGenex entering into the CVR agreement.

Tax Treatment of CVRs

The discussion in this section entitled "Tax Treatment of CVRs" constitutes the opinion of Fenwick and West LLP, OncoGenex's legal counsel, filed as Exhibit 8.3 to the registration statement of which this proxy statement/prospectus/information statement forms a part. In the opinion of Fenwick and West LLP, OncoGenex's legal counsel, the distribution and issuance of CVRs to common stockholders of OncoGenex prior to completion of the first merger and under the terms expressed in the form of the CVR agreement attached as *Annex F* to this proxy statement/prospectus/information statement is more likely than not to be treated as a distribution of property with respect to OncoGenex common stock under the Code.

In rendering Fenwick & West LLP's opinion below, it examined the following documents, or CVR Documents:

(a) The form of the CVR agreement attached as *Annex F* to this proxy statement/prospectus/information statement;

(b) The Registration Statement of which this proxy statement/prospectus/information statement forms a part and this proxy statement/prospectus/information statement; and

(c) Such other documents and records as Fenwick & West LLP has deemed necessary in order to enable it to render its opinion.

In rendering the opinion below Fenwick and West LLP, OncoGenex's legal counsel, has assumed, without any independent investigation or verification of any kind, that all of the information as to factual matters contained in the CVR Documents is true, correct, and complete. Any inaccuracy with respect to factual matters contained in the CVR Documents or incompleteness in our understanding of the facts could alter the conclusion reached in Fenwick & West LLP's opinion.

In addition, for purposes of rendering the opinion below, Fenwick and West LLP, OncoGenex's legal counsel, has assumed with the permission of OncoGenex that (i) all signatures on all CVR Documents reviewed by Fenwick and West LLP are genuine, (ii) all CVR Documents submitted to Fenwick and West LLP as originals are true and correct, (iii) all CVR Documents submitted to Fenwick and West LLP as copies are true and correct copies of the originals thereof, (iv) each natural person signing any CVR Document reviewed by u Fenwick and West LLP had the legal capacity to do so, (v) the CVR agreement effected will be substantially similar to the form of the CVR Agreement attached as *Annex F* to this proxy statement/prospectus/information statement, and (vi) the CVR agreement effected will be entered into prior to completion of the first merger.

Other than that expressed herein, Fenwick and West LLP, OncoGenex's legal counsel, does not express any opinion on the tax consequences of the distribution and issuance of CVRs under state, local and foreign tax laws, or the tax consequences of any transactions effectuated before, after or at the same time as this distribution and issuance, whether or not they are in connection with this distribution and issuance. **Importantly, Fenwick and West LLP, OncoGenex's legal counsel, is not opining on the federal income tax treatment under the Code of the distribution and issuance of CVRs to common stockholders of OncoGenex if the CVRs are not distributed and issued prior to completion of the first merger or if the terms of the CVR agreement as effected are not substantially similar to the form of the CVR Agreement attached as *Annex F* to this proxy statement/prospectus/information statement.**

There is no authority directly on point addressing whether contingent value rights with characteristics similar to the CVRs should be treated as a distribution of property with respect to its stock, a distribution of equity with

respect to its stock, or an "open transaction," or as a "debt instrument" for federal income tax purposes, and such questions are inherently factual in nature. However, because the CVRs will be issued to all holders of OncoGenex common stock prior to the first merger (and not as part of the consideration for the Merger paid to holders of Achieve common stock), the opinion of Fenwick and West LLP, OncoGenex's legal counsel, is that the distribution and issuance of CVRs to common stockholders of OncoGenex prior to completion of the first merger and under the terms expressed in the form of the CVR agreement attached as *Annex F* to this proxy statement/prospectus/information statement is more likely than not to be treated as a distribution of property with respect to OncoGenex common stock under the Code. Section 301(a) of the Code. As a result, OncoGenex intends to report the issuance of the CVRs as a distribution of property with respect to its stock. CVR holders are urged to consult their tax advisors regarding the tax consequences to them of the CVR issuance.

Assuming the issuance of the CVRs is treated for federal income tax purposes as a distribution of property with respect to OncoGenex stock, each CVR holder will be treated as receiving a distribution in an amount equal to the fair market value of the CVRs issued to such CVR holder on the date of the issuance, with the fair market value of each CVR to be determined by an independent appraiser after the issuance, but before December 31, 2017. Section 301 of the Code. This distribution generally should be treated first as a taxable dividend to the extent of the CVR holder's pro rata share of OncoGenex's current or accumulated earnings and profits (as determined for U.S. federal income tax purposes), then as a non-taxable return of capital to the extent of the CVR holder's basis in the OncoGenex common stock, and finally as capital gain from the sale or exchange of OncoGenex common stock with respect to any remaining value. OncoGenex has negative accumulated earnings and profits and expects no or a small amount of current earnings and profits for the relevant taxable year. Thus, OncoGenex expects most or all of this distribution to be treated as other than a dividend for U.S. federal income tax purposes. CVR holders will receive a Form 1099-DIV in early 2018 notifying them of the portion of the CVR value that is treated as a dividend for U.S. federal income tax purposes. A CVR holder's initial tax basis in his or her CVRs should equal the fair market value of such CVRs on the date of their issuance. The holding period of such CVRs should begin on the day after the date of issuance.

Although, there is no authority directly on point addressing whether contingent value rights with characteristics similar to the CVRs are treated as equity, it is possible, although unlikely, that the issuance of the CVRs could be treated as a distribution of equity for United States federal income tax purposes, in which case the CVR holders should not recognize gain or loss as a result of the issuance. Section 305(a) of the Code. Depending on the fair market value of the CVRs on the date of their issuance, each CVR holder's tax basis in his or her OncoGenex common stock may be allocated between such holder's OncoGenex common stock and such holder's CVRs. The holding period of such CVRs should include the CVR holders' holding period of such holder's OncoGenex common stock. As discussed above, OncoGenex does not intend to report the issuance of the CVRs as a distribution of equity and any CVR holder reporting the CVR issuance as a distribution of equity likely has an increased chance of such holder's tax treatment of his or her CVRs being audited by the IRS.

Although, there is no authority directly on point addressing whether contingent value rights with characteristics similar to the CVRs are subject to the "open transaction" doctrine, it is possible, although unlikely, that the issuance of the CVRs could be treated as subject to the "open transaction" doctrine if the value of the CVRs cannot be "reasonably ascertained." See *Warren Jones Co. v. Commissioner*, 524 F.2d 788 (9th Cir. 1975), *rev'g* 60 T.C. 663 (1973). If the receipt of CVRs were treated as an "open transaction" for United States federal income tax purposes, each CVR holder should not immediately take the CVRs into account in determining whether such holder must recognize gain, if any, on the receipt of the CVRs and such holder would take no tax basis in the CVRs. Rather, the CVR holder's United States federal income tax consequences would be determined in line with the discussion above based on whether the CVRs are treated as a distribution of property or of equity at the time the payments with respect to the CVRs are received or deemed received in accordance with the CVR holder's regular method of accounting. As discussed above, OncoGenex does not intend to report the issuance of the CVRs as an open transaction and any CVR holder reporting the CVR issuance as an open transaction likely has an increased chance of such holder's tax treatment of his or her CVRs being audited by the IRS.

Although, there is no authority directly on point addressing whether contingent value rights with characteristics similar to the CVRs are treated as "debt instruments," it is possible, although unlikely, that the CVRs could be treated as one or more "debt instruments." If that is the case, then payments received with respect to the CVRs generally should be treated as payments in retirement of a "debt instrument," except to the extent interest is imputed under the Code. If those rules were to apply, interest generally should be imputed under complex rules. In such a case, a CVR holder would be required to include the interest in income on an annual basis, whether or not currently paid.

Assuming the issuance of the CVRs is treated for federal income tax purposes as a distribution of property with respect to OncoGenex stock, the CVRs should generally be treated as capital assets for U.S. federal income tax purposes once issued.

PLEASE CONSULT YOUR TAX ADVISOR WITH RESPECT TO THE PROPER CHARACTERIZATION OF THE RECEIPT OF THE CVRs.

Support Agreements and Written Consent

In order to induce OncoGenex to enter into the Merger Agreement, the Achieve directors, officers and certain affiliated stockholders are parties to support agreements, in the forms attached as *Annex G*, with OncoGenex pursuant to which, among other things, each of these stockholders agreed, solely in his or her capacity as a stockholder, to vote all of his or her shares of Achieve capital stock in favor of the adoption of the Merger Agreement and to acknowledge that the adoption of the Merger Agreement is irrevocable. These Achieve stockholders also granted OncoGenex an irrevocable proxy to their respective Achieve capital stock in accordance with the support agreements. These Achieve stockholders may vote their shares of Achieve capital stock on all other matters not referred to in such proxy. The Achieve stockholders that are parties to the support agreements with OncoGenex are: Richard Stewart, Dr. Anthony Clarke, Susan Clarke, Timothy Clarke, Robert Schacter, Ronald Martell, and Caroline Loewy.

The stockholders of Achieve that are parties to support agreements with OncoGenex owned an aggregate of 16,530 shares of Achieve common stock, representing approximately 78% of the outstanding shares of Achieve capital stock as of January 5, 2017. Following the effectiveness of the registration statement on Form S-4 of which this proxy statement/prospectus/information statement is a part and pursuant to the Merger Agreement, stockholders of Achieve holding a sufficient number of shares to adopt the Merger Agreement and approve the merger will execute written consents providing for such adoption. Therefore, holders of the number of shares of Achieve stock required to adopt the Merger Agreement are contractually obligated to adopt the Merger Agreement via written consent.

Under these support agreements, subject to certain exceptions, such stockholders also have agreed not to encumber any shares of Achieve common stock, transfer or otherwise dispose of any shares of Achieve common stock, grant any proxy, power of attorney or other authorization with respect to shares of Achieve common stock, deposit shares of Achieve common stock into a voting trust or enter into a voting agreement with respect to shares of Achieve common stock, take any action that would make any representation or warranty of such stockholders untrue or incorrect in any material respect, or have the effect of preventing such stockholder from performing the stockholder's obligations under the support agreement. These agreements terminate at the earlier of the termination of the Merger Agreement or the completion of the merger. To the extent that any sale or transfer of shares of Achieve common stock is permitted pursuant to the exceptions included in the support agreement, each person to whom any shares of Achieve common stock are so sold or transferred must agree in writing to be bound by the terms and provisions of the support agreement.

In addition, in order to induce Achieve to enter into the Merger Agreement, the OncoGenex directors, officers and certain affiliated stockholders are parties to support agreements with Achieve pursuant to which, among other things, each of these stockholders agreed, solely in his or her capacity as a stockholder, to vote all of his or

her shares of OncoGenex capital stock in favor of the approval of the Merger Agreement, the issuance of OncoGenex common stock in the first merger, the reverse stock split, any proposal to adjourn or postpone any meeting to a later date, if there are not sufficient votes for the approval of any of these matters on the date on which such meeting is held, and any other proposal included in this proxy statement/prospectus/information statement in connection with, or related to, the consummation of the merger that the OncoGenex board of directors has recommended that the OncoGenex stockholders vote in favor of, and against any acquisition proposal as defined in the Merger Agreement. These OncoGenex stockholders also granted Achieve an irrevocable proxy to their respective shares in accordance with these support agreements. These OncoGenex stockholders may vote their shares of OncoGenex common stock on all other matters not referred to in such proxy.

The OncoGenex stockholders that are parties to the support agreements with Achieve are: Scott Cormack, John Bencich, Dr. Cindy Jacobs, David Smith, Jack Goldstein, Martin Mattingly, Michelle Griffin, Neil Clendeninn and Stewart Parker.

Under these support agreements, subject to certain exceptions, such stockholders also have agreed not to encumber any shares of OncoGenex common stock or OncoGenex options, transfer or otherwise dispose of any shares of OncoGenex common stock or OncoGenex options, grant any proxy, power of attorney or other authorization with respect to shares of OncoGenex common stock or OncoGenex stock options, deposit shares of OncoGenex common stock into a voting trust or enter into a voting agreement with respect to shares of OncoGenex common stock or OncoGenex stock options, take any action that would make any representation or warranty of such stockholders untrue or incorrect in any material respect, or have the effect of preventing such stockholder from performing the stockholder's obligations under the support agreement. These agreements terminate at the earlier of the termination of the Merger Agreement or the completion of the merger. To the extent that any sale or transfer of shares of OncoGenex common stock or OncoGenex stock options is permitted pursuant to the exceptions included in the support agreement, each person to whom any shares of OncoGenex common stock or OncoGenex stock options are so sold or transferred must agree in writing to be bound by the terms and provisions of the support agreement.

The stockholders of OncoGenex that are party to a support agreement with Achieve owned an aggregate of 362,492 shares of OncoGenex common stock, representing approximately 1.2% of the outstanding OncoGenex common stock as of January 5, 2017.

Lock-Up Agreements

Concurrently and in connection with the execution of the Merger Agreement, certain officers, directors and stockholders of OncoGenex, who collectively hold approximately 1.2 % of the outstanding shares of OncoGenex capital stock as of the close of business on January 5, 2017 and certain officers, directors and stockholders of Achieve, who collectively hold approximately 78% of the outstanding shares of Achieve capital stock as of the close of business on January 5, 2017, have each entered into lock-up agreements with OncoGenex, in substantially the form attached as *Annex H* hereto. Under the lock-up agreements, subject to certain exceptions, each stockholder will be subject to a 180-day lock-up on the transfer of shares of capital stock of OncoGenex beginning on the closing of the first merger.

MATTERS BEING SUBMITTED TO A VOTE OF ONCOGENEX STOCKHOLDERS

OncoGenex Proposal No. 1: Approval of the Merger and the Issuance of Common Stock in the Merger

At the OncoGenex special meeting, OncoGenex stockholders will be asked to approve the merger and the issuance of OncoGenex common stock pursuant to the Merger Agreement. Immediately following the merger, it is expected that Achieve stockholders will own approximately 75% of the outstanding capital stock of the combined company, and the OncoGenex equity holders will own approximately 25% of the outstanding capital stock of the combined company.

The terms of, reasons for and other aspects of the Merger Agreement, the merger and the issuance of OncoGenex common stock pursuant to the Merger Agreement are described in detail in the other sections in this proxy statement/prospectus/information statement.

Required Vote; Recommendation of Board of Directors

Presuming a quorum is present, the affirmative vote of the holders of a majority of the shares of OncoGenex common stock properly cast at the OncoGenex special meeting is required for approval of OncoGenex Proposal No. 1. **Each of Proposal Nos. 1, 2 and 3 are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of Proposal Nos. 1, 2 and 3.**

THE ONCOGENEX BOARD OF DIRECTORS RECOMMENDS THAT THE ONCOGENEX STOCKHOLDERS VOTE "FOR" ONCOGENEX PROPOSAL NO. 1 TO APPROVE THE MERGER AND THE ISSUANCE OF ONCOGENEX COMMON STOCK PURSUANT TO THE MERGER AGREEMENT.

OncoGenex Proposal No. 2: Approval of the Amendment to the Certificate of Incorporation of OncoGenex Effecting the Reverse Stock Split at a Ratio Not to Exceed 1-for-20, with the Exact Ratio to be Determined by the OncoGenex Board of Directors

General

At the OncoGenex special meeting, OncoGenex stockholders will be asked to approve the amendment to the certificate of incorporation of OncoGenex effecting a reverse stock split of the issued shares of OncoGenex common stock, at a ratio not to exceed 1-for-20, with such specific ratio to be determined by OncoGenex's board of directors, in consultation with Achieve's board of directors, following the special meeting. OncoGenex's board of directors intends to set the specific ratio at the lowest ratio required to meet the minimum bid price requirements of the NASDAQ Capital Market. Upon the effectiveness of the amendment to the certificate of incorporation of OncoGenex effecting the reverse stock split, or the split effective time, the issued shares of OncoGenex common stock outstanding immediately prior to the split effective time will be reclassified into a smaller number of shares such that an OncoGenex stockholder will own one new share of OncoGenex common stock for each ten shares, or such lesser amount as the OncoGenex board of directors ultimately approves, of issued common stock held by that stockholder immediately prior to the split effective time. The OncoGenex board of directors' decision will be based on a number of factors, including market conditions, existing and expected trading prices for OncoGenex common stock and the listing requirements of The NASDAQ Capital Market.

If OncoGenex Proposal No. 2 is approved, the reverse stock split would become effective immediately prior to the consummation of the merger.

The OncoGenex board of directors may determine to effect the reverse stock split, if it is approved by the stockholders, even if the other proposals to be acted upon at the meeting are not approved, including the merger and the issuance of shares of OncoGenex common stock pursuant to the Merger Agreement.

The form of the amendment to the certificate of incorporation of OncoGenex to effect the reverse stock split, as more fully described below, will effect the reverse stock split but will not change the number of authorized shares of common stock or preferred stock, or the par value of OncoGenex common stock or preferred stock.

Purpose

The OncoGenex board of directors approved the proposal approving the amendment to the certificate of incorporation of OncoGenex effecting the reverse stock split for the following reasons:

- the board of directors believes effecting the reverse stock split may be an effective means of maintaining the listing of the combined company's post-merger common stock on The NASDAQ Capital Market and avoiding a delisting of OncoGenex common stock from The NASDAQ Capital Market;
- the board of directors believes a higher stock price may help generate investor interest in OncoGenex and help OncoGenex attract and retain employees; and
- if the reverse stock split successfully increases the per share price of OncoGenex common stock, the OncoGenex board of directors believes this increase may increase trading volume in OncoGenex common stock and facilitate future financings by OncoGenex.

NASDAQ Requirements for Listing on The NASDAQ Capital Market

OncoGenex common stock is listed on The NASDAQ Capital Market under the symbol "OGXI." OncoGenex intends to file an initial listing application under the reverse merger rules with The NASDAQ Stock Market LLC to seek listing on The NASDAQ Capital Market upon the closing of the merger.

According to the applicable rules and regulations of The NASDAQ Stock Market LLC, an issuer must, in a case such as this, apply for initial inclusion following a transaction whereby the issuer combines with a non-NASDAQ entity, resulting in a change of control of the issuer and potentially allowing the non-NASDAQ entity to obtain a NASDAQ listing. Accordingly, the listing standards of The NASDAQ Capital Market will require OncoGenex to have, among other things, a $4.00 per share minimum bid price upon the closing of the merger. Therefore, the reverse stock split will be necessary in order to consummate the merger.

One of the effects of the reverse stock split will be to effectively increase the proportion of authorized shares which are unissued relative to those which are issued. This could result in OncoGenex's management being able to issue more shares without further stockholder approval. For example, before the reverse stock split, OncoGenex's authorized but unissued shares immediately prior to the closing of the merger would be approximately 45 million compared to shares issued of approximately 30 million. If OncoGenex effects the reverse stock split using a 1-for-20 ratio, its authorized but unissued shares immediately prior to the closing of the merger would be approximately 45 million compared to shares issued of approximately 1.5 million. The reverse stock split will not affect the number of authorized shares of OncoGenex common stock and preferred stock, which will continue to be authorized pursuant to the certificate of incorporation of OncoGenex, thus the reverse stock split will have the effect of increasing the number of authorized but unissued shares of OncoGenex's common stock. There are no shares of OncoGenex preferred stock currently outstanding. OncoGenex currently has no plans, commitments, arrangements, understandings or agreements to issue shares, other than in connection with the merger, and to satisfy obligations under the OncoGenex warrants and employee stock options from time to time as these warrants and stock options are exercised. The additional authorized shares of common stock will provide the combined company with the flexibility to consider and respond to future business opportunities and needs as they arise, including but not limited to, equity offerings; financings; potential strategic transactions, including mergers, acquisitions and business combinations; stock dividends; stock splits; grants under equity compensation plans; and other general corporate transactions.

Potential Increased Investor Interest

On May 2, 2017, OncoGenex common stock closed at $0.41 per share. An investment in OncoGenex common stock may not appeal to brokerage firms that are reluctant to recommend lower priced securities to their clients. Investors may also be dissuaded from purchasing lower priced stocks because the brokerage commissions, as a percentage of the total transaction, tend to be higher for such stocks. Moreover, the analysts at many brokerage firms do not monitor the trading activity or otherwise provide coverage of lower priced stocks. Also, the OncoGenex board of directors believes that most investment funds are reluctant to invest in lower priced stocks. OncoGenex's board of directors believes that the anticipated higher market price expected to result from a reverse stock split will reduce, to some extent, the negative effects of the practices of brokerage houses and investors described above on the liquidity and marketability of OncoGenex common stock.

There are risks associated with the reverse stock split, including that the reverse stock split may not result in an increase in the per share price of OncoGenex common stock. OncoGenex cannot predict whether the reverse stock split will increase the market price for OncoGenex common stock. The history of similar stock split combinations for companies in like circumstances is varied. There is no assurance that:

- the market price per share of OncoGenex common stock after the reverse stock split will rise in proportion to the reduction in the number of shares of OncoGenex common stock outstanding before the reverse stock split;
- the reverse stock split will result in a per share price that will attract brokers and investors who do not trade in lower priced stocks;
- the reverse stock split will result in a per share price that will increase the ability of OncoGenex to attract and retain employees;
- the market price per share will either exceed or remain in excess of the $1.00 minimum bid price as required by The NASDAQ Stock Market LLC for continued listing, that OncoGenex will otherwise meet the requirements of The NASDAQ Stock Market LLC for inclusion for trading on The NASDAQ Capital Market, including the $4.00 minimum bid price upon the closing of the merger, or, if met, that the market price per share would remain above the minimum bid price for a sustained period of time; or
- OncoGenex would otherwise meet the requirements of The NASDAQ Stock Market LLC for listing on The NASDAQ Capital Market even if the per share market price of OncoGenex common stock after the reverse stock split meets the required minimum bid price.

The market price of OncoGenex common stock will also be based on performance of OncoGenex and other factors, some of which are unrelated to the number of shares outstanding. If the reverse stock split is effected and the market price of OncoGenex common stock declines, the percentage decline as an absolute number and as a percentage of the overall market capitalization of OncoGenex may be greater than would occur in the absence of a reverse stock split. Furthermore, the liquidity of OncoGenex common stock could be adversely affected by the reduced number of shares that would be outstanding after the reverse stock split.

Principal Effects of the Reverse Stock Split

The amendment to the certificate of incorporation of OncoGenex effecting the reverse stock split is set forth in*Annex B* to this proxy statement/prospectus/information statement.

The reverse stock split will be effected simultaneously for all outstanding shares of OncoGenex common stock. The reverse stock split will affect all of the OncoGenex stockholders uniformly and will not affect any stockholder's percentage ownership interests in OncoGenex, except to the extent that the reverse stock split results in any of the OncoGenex stockholders owning a fractional share. The reverse stock split will not change the terms of OncoGenex common stock. After the reverse stock split, the shares of OncoGenex common stock

will have the same voting rights and rights to dividends and distributions and will be identical in all other respects to the OncoGenex common stock now authorized, which is not entitled to preemptive or subscription rights, and is not subject to conversion, redemption or sinking fund provisions. OncoGenex common stock issued pursuant to the reverse stock split will remain fully paid and nonassessable. The reverse split does not affect the total proportionate ownership of OncoGenex following the merger. The reverse stock split will not affect OncoGenex continuing to be subject to the periodic reporting requirements of the Securities and Exchange Act of 1934, as amended, or the Exchange Act.

Procedure for Effecting Reverse Stock Split and Exchange of Stock Certificates

If the OncoGenex stockholders approve the amendment to the certificate of incorporation of OncoGenex effecting the reverse stock split, and if the OncoGenex board of directors still believes that a reverse stock split is in the best interests of OncoGenex and its stockholders, OncoGenex will file the amendment to certificate of incorporation with the Delaware Secretary of State at such time as the OncoGenex board of directors has determined to be the appropriate split effective time. The OncoGenex board of directors may delay effecting the reverse stock split without resoliciting stockholder approval. Beginning at the split effective time, each book-entry account representing pre-split shares will be deemed for all corporate purposes to evidence ownership of post-split shares.

Beneficial Owners of Common Stock. Upon the implementation of the reverse stock split, OncoGenex intends to treat shares held by stockholders in "street name" (i.e., through a bank, broker, custodian or other nominee), in the same manner as registered stockholders whose shares are registered in their names. Banks, brokers, custodians or other nominees will be instructed to effect the reverse stock split for their beneficial holders holding OncoGenex common stock in street name. However, these banks, brokers, custodians or other nominees may have different procedures than registered stockholders for processing the reverse stock split and making payment for fractional shares. If a stockholder holds shares of OncoGenex common stock with a bank, broker, custodian or other nominee and has any questions in this regard, stockholders are encouraged to contact their bank, broker, custodian or other nominee.

Registered Holders of Common Stock. Certain of OncoGenex registered holders of common stock hold some or all of their shares electronically in book-entry form with OncoGenex's transfer agent, Computershare, Inc. These stockholders do not hold physical stock certificates evidencing their ownership of OncoGenex common stock. However, they are provided with a statement reflecting the number of shares of OncoGenex common stock registered in their accounts. If a stockholder holds registered shares in book-entry form with OncoGenex's transfer agent, no action needs to be taken to receive post-reverse stock split shares or payment in lieu of fractional shares, if applicable. If a stockholder is entitled to post-reverse stock split shares, a transaction statement will automatically be sent to the stockholder's address of record indicating the number of shares of OncoGenex common stock held following the reverse stock split.

Fractional Shares

No fractional shares will be issued in connection with the reverse stock split. Stockholders of record who otherwise would be entitled to receive fractional shares because they hold a number of pre-split shares not evenly divisible by the number of pre-split shares for which each post-split share is to be reclassified, will be entitled to a cash payment in lieu thereof at a price equal to the fraction to which the stockholder would otherwise be entitled multiplied by the closing price of the common stock on The NASDAQ Capital Market on the first trading day immediately following the split effective time. The ownership of a fractional interest will not give the holder thereof any voting, dividend, or other rights except to receive payment therefor as described herein.

Stockholders should be aware that, under the escheat laws of the various jurisdictions where stockholders reside, where OncoGenex is domiciled, and where the funds will be deposited, sums due for fractional interests that are not timely claimed after the split effective time may be required to be paid to the designated agent for each such

jurisdiction, unless correspondence has been received by OncoGenex or the transfer agent concerning ownership of such funds within the time permitted in such jurisdiction. Thereafter, stockholders otherwise entitled to receive such funds will have to seek to obtain them directly from the state to which they were paid.

Accounting Consequences

The par value per share of OncoGenex common stock will remain unchanged at $0.001 per share after the reverse stock split. As a result, at the reverse stock split effective time, the stated capital on OncoGenex's balance sheet attributable to OncoGenex common stock will be reduced proportionately based on the reverse stock split ratio, from its present amount, and the additional paid-in capital account will be increased for the amount by which the stated capital is reduced. After the reverse stock split (and disregarding the impact of shares of OncoGenex common stock issued in the merger), net income or loss per share, and other per share amounts will be increased because there will be fewer shares of OncoGenex common stock outstanding. In future financial statements, net income or loss per share and other per share amounts for periods ending before the reverse stock split will be recast to give retroactive effect to the reverse stock split.

Potential Anti-Takeover Effect

Although the increased proportion of unissued authorized shares to issued shares could, under certain circumstances, have an anti-takeover effect, for example, by permitting issuances that would dilute the stock ownership of a person seeking to effect a change in the composition of the OncoGenex board of directors or contemplating a tender offer or other transaction for the combination of OncoGenex with another company, the reverse stock split proposal is not being proposed in response to any effort of which OncoGenex is aware to accumulate shares of OncoGenex common stock or obtain control of OncoGenex, other than in connection with the merger, nor is it part of a plan by management to recommend a series of similar amendments to the OncoGenex board of directors and stockholders. Other than the proposals being submitted to the OncoGenex stockholders for their consideration at the OncoGenex special meeting, the OncoGenex board of directors does not currently contemplate recommending the adoption of any other actions that could be construed to affect the ability of third parties to take over or change control of OncoGenex. For more information, please see the section entitled "Risk Factors—Risks Related to OncoGenex's Common Stock" and "Description of OncoGenex Capital Stock—Anti-Takeover Effects of Provisions of OncoGenex Charter Documents and Delaware Law."

Material U.S. Federal Income Tax Consequences of the Reverse Stock Split

The following discussion is a summary of material U.S. federal income tax consequences of a reverse stock split to us and to stockholders that hold shares of our common stock as capital assets for U.S. federal income tax purposes. This discussion is based upon current U.S. tax law, which is subject to change, possibly with retroactive effect, and differing interpretations. Any such change may cause the U.S. federal income tax consequences of a reverse stock split to vary substantially from the consequences summarized below.

This summary does not address all aspects of U.S. federal income taxation that may be relevant to stockholders in light of their particular circumstances or to stockholders who may be subject to special tax treatment under the Code, including, without limitation, dealers in securities, commodities or foreign currency, persons who are treated as non-U.S. persons for U.S. federal income tax purposes, certain former citizens or long-term residents of the United States, insurance companies, tax-exempt organizations, banks, financial institutions, small business investment companies, regulated investment companies, real estate investment trusts, retirement plans, persons whose functional currency is not the U.S. dollar, traders that mark-to-market their securities, persons subject to the alternative minimum tax, persons who hold their shares of our common stock as part of a hedge, straddle, conversion or other risk reduction transaction, or who acquired their shares of our common stock pursuant to the exercise of compensatory stock options, the vesting of previously restricted shares of stock or otherwise as compensation.

The state and local tax consequences of a reverse split may vary as to each stockholder, depending on the jurisdiction in which such stockholder resides. This discussion should not be considered as tax or investment advice, and the tax consequences of a reverse stock split may not be the same for all stockholders. Stockholders should consult their own tax advisors to understand their individual federal, state, local and foreign tax consequences.

Tax Consequences to OncoGenex. A reverse stock split will likely constitute a reorganization under Section 368(a)(1)(E) of the Code. Accordingly, OncoGenex should not recognize taxable income, gain or loss in connection with a reverse stock split. In addition, OncoGenex does not expect a reverse stock split to affect its ability to utilize its net operating loss carryforwards.

Tax Consequences to OncoGenex Stockholders. OncoGenex stockholders should not recognize any gain or loss for U.S. federal income tax purposes as a result of a reverse stock split, except to the extent of any cash received in lieu of a fractional share of OncoGenex common stock. Each stockholder's aggregate tax basis in shares of common stock received in a reverse stock split should equal the stockholder's aggregate tax basis in the shares of common stock exchanged in the reverse stock split, reduced by the amount of any tax basis allocable to a fractional share for which cash is received. In addition, each stockholder's holding period for the shares of common stock it receives in a reverse stock split should include the stockholder's holding period for the shares of common stock exchanged in the reverse stock split.

In general, a stockholder who receives cash in lieu of a fractional share of common stock pursuant to a reverse stock split should generally recognize capital gain or loss equal to the difference between the amount of cash received and the stockholder's tax basis allocable to the fractional share. Any capital gain or loss will be treated as long term capital gain or loss if the stockholder's holding period in the fractional share is greater than one year as of the effective date of the reverse stock split.

Required Vote; Recommendation of Board of Directors

The affirmative vote of holders of a majority of the shares of OncoGenex common stock outstanding on the record date for the OncoGenex special meeting is required to approve the amendment to the certificate of incorporation of OncoGenex effecting a reverse stock split at a ratio not to exceed 1-for-20 of OncoGenex common stock. **Each of Proposal Nos. 1, 2 and 3 are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of Proposal Nos. 1, 2 and 3.**

THE ONCOGENEX BOARD OF DIRECTORS RECOMMENDS THAT ONCOGENEX STOCKHOLDERS VOTE "FOR" ONCOGENEX PROPOSAL NO. 2 TO APPROVE THE AMENDMENT TO THE CERTIFICATE OF INCORPORATION OF ONCOGENEX EFFECTING THE REVERSE STOCK SPLIT AT A RATIO NOT TO EXCEED 1-FOR-20, WITH THE EXACT RATIO TO BE DETERMINED BY THE ONCOGENEX BOARD OF DIRECTORS IN CONSULTATION WITH THE ACHIEVE BOARD OF DIRECTORS.

OncoGenex Proposal No. 3: Approval of Name Change

At the OncoGenex special meeting, holders of OncoGenex stock will be asked to approve the amendment to the certificate of incorporation of OncoGenex to change the name of the corporation from "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc." by filing the amendment to the certificate of incorporation at the effective time of the merger. The primary reason for the corporate name change is that management believes this will allow for brand recognition of Achieve product candidates and product candidate pipeline following the consummation of the merger.

Required Vote; Recommendation of Board of Directors

The affirmative vote of holders of a majority of the shares of OncoGenex common stock outstanding on the record date for the OncoGenex special meeting is required to approve the amendment to the certificate of

incorporation to change the name "OncoGenex Pharmaceuticals, Inc." to "Achieve Life Sciences, Inc." **Each of Proposal Nos. 1, 2 and 3 are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of Proposal Nos. 1, 2 and 3.**

THE ONCOGENEX BOARD OF DIRECTORS RECOMMENDS THAT ONCOGENEX STOCKHOLDERS VOTE "FOR" ONCOGENEX PROPOSAL NO. 3 TO APPROVE THE NAME CHANGE.

OncoGenex Proposal No. 4: Approval of Possible Adjournment of the OncoGenex Special Meeting

If OncoGenex fails to receive a sufficient number of votes to approve OncoGenex Proposal Nos. 1, 2 and 3, OncoGenex may propose to adjourn the OncoGenex special meeting, for a period of not more than 30 days, for the purpose of soliciting additional proxies to approve OncoGenex Proposal Nos. 1, 2 and 3. OncoGenex currently does not intend to propose adjournment at the OncoGenex special meeting if there are sufficient votes to approve OncoGenex Proposal Nos. 1, 2 and 3.

Required Vote; Recommendation of Board of Directors

The affirmative vote of the holders of a majority of the shares of OncoGenex common stock properly cast at the OncoGenex special meeting is required to approve the adjournment, if necessary, of the OncoGenex special meeting for the purpose of soliciting additional proxies to approve OncoGenex Proposal Nos. 1, 2 and 3. **Each of Proposal Nos. 1, 2 and 3 are conditioned upon each other. Therefore, the merger cannot be consummated without the approval of Proposal Nos. 1, 2 and 3.**

THE ONCOGENEX BOARD OF DIRECTORS RECOMMENDS THAT THE ONCOGENEX STOCKHOLDERS VOTE "FOR" ONCOGENEX PROPOSAL NO. 4 TO ADJOURN THE SPECIAL MEETING, IF NECESSARY, TO SOLICIT ADDITIONAL PROXIES IF THERE ARE NOT SUFFICIENT VOTES IN FAVOR OF ONCOGENEX PROPOSAL NOS. 1, 2 AND 3.

ONCOGENEX BUSINESS

Overview of OncoGenex's Business and Recent Developments

OncoGenex is a biopharmaceutical company that has been focused on the development of novel next generation cancer therapeutics. Its mission is to accelerate transformative therapies to improve the lives of people living with cancer and other serious diseases. OncoGenex's product candidate apatorsen has a distinct mechanism of action and represents a unique opportunity for cancer drug development that it believes has the potential to improve treatment outcomes in a variety of cancers. Apatorsen is designed to block the production of heat shock protein 27, or Hsp27, a protein that promotes treatment resistance in cancer. In some clinical trials evaluating apatorsen, high serum Hsp27 levels appear to be a strong prognostic indicator for shorter survival outcomes. OncoGenex currently does not intend to conduct additional pre-clinical or clinical studies with apatorsen and is seeking a collaboration partnership to fund and further develop this product candidate.

As a result of custirsen not meeting the primary endpoint of improving overall survival in three completed phase 3 trials, OncoGenex has discontinued further development of custirsen and has begun to wind down all clinical trials and other activities related to this product candidate. In November 2016, OncoGenex provided a notice of discontinuance to Ionis Pharmaceuticals, Inc. (formerly Isis Pharmaceuticals, Inc.), or Ionis, and a letter of termination to the University of British Columbia, or UBC, notifying those parties that it has discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. In January 2017, OncoGenex also discontinued further development of its pre-clinical product candidate, OGX-225. OncoGenex provided a notice of discontinuance to Ionis, informing them that it has discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. OncoGenex intends to also terminate the UBC license agreement related to OGX-225, provided that Ionis does not exercise its reversion rights within 90 days of the notice of discontinuance. If Ionis exercises its reversion rights related to OGX-225, OncoGenex believes Ionis will assume the rights and obligations under the UBC license agreement.

In February 2016, OncoGenex committed to a plan to reduce operating expenses, which included a workforce reduction of 11 employees, representing approximately 27% of its employees prior to the reduction. OncoGenex incurred approximately $0.4 million in expenses as a result of the workforce reduction, substantially all of which were severance costs.

In October and November 2016, OncoGenex committed to a restructuring of an additional portion of its workforce in order to preserve its resources as it determined future strategic plans. As part of these restructurings, OncoGenex eliminated 19 positions, representing approximately 68% of its workforce. OncoGenex expects the restructurings to be substantially complete in the first quarter of 2017. In the fourth quarter of 2016, OncoGenex incurred approximately $1.8 million in restructuring costs, substantially all of which related to severance costs, and an asset impairment charge of $0.2 million for manufacturing equipment.

On January 5, 2017, OncoGenex and Achieve Life Science, Inc., or Achieve, a privately held specialty pharmaceutical company, entered into an Agreement and Plan of Merger and Reorganization, or the Merger Agreement, under which OncoGenex will acquire Achieve in an all-stock transaction. Upon completion of the Merger Agreement, Achieve's stockholders are expected to own approximately 75% of the combined company's outstanding shares and OncoGenex's current equityholders are expected to own the remaining approximately 25% of the combined company's outstanding shares. Following completion of the merger, OncoGenex Pharmaceuticals, Inc. will be renamed Achieve Life Sciences, Inc.

Pending Merger Agreement with Achieve

On January 5, 2017, OncoGenex and Achieve entered into the Merger Agreement, pursuant to which Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex will merge with and into Achieve, or the First Merger, with Achieve becoming a wholly owned subsidiary of OncoGenex and the

surviving company of the First Merger, or the Initial Surviving Corporation. Promptly following the First Merger, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc., or Merger Sub 2, a Delaware corporation and a wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity as a direct wholly owned subsidiary of OncoGenex. The two mergers taken together, are intended to qualify as a "reorganization" within the meaning of Section 368(a)(2)(D) of the Internal Revenue Code of 1986, as amended. The surviving company is expected to be renamed Achieve Life Sciences, Inc. and is referred to herein as the "combined company." The Merger is expected to close in mid-2017.

Subject to the terms and conditions of the Merger Agreement, at the closing of the First Merger, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of the common stock of OncoGenex, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's fully-diluted capitalization, as well as the payment of cash in lieu of fractional shares. Immediately following the effective time of the merger, OncoGenex equityholders are expected to own approximately 25% of the outstanding capital stock of the combined company on a fully diluted basis, and the Achieve stockholders are expected to own approximately 75% of the outstanding capital stock of the combined company on a fully diluted basis.

Consummation of the merger is subject to certain closing conditions, including, among other things, approval by the stockholders of OncoGenex and Achieve. The Merger Agreement contains certain termination rights for both OncoGenex and Achieve, and further provides that, upon termination of the Merger Agreement under specified circumstances, either party may be required to pay the other party a termination fee of $0.5 million. In addition, the Merger Agreement provides that if either party breaches certain covenants regarding alternative transactions to those contemplated by the Merger Agreement, the breaching party may be required to pay the other party a termination fee of $1.0 million. In connection with certain terminations of the Merger Agreement, either party may be required to pay the other party's third party expenses up to $0.5 million.

At the effective time of the First Merger, the Board of Directors of OncoGenex is expected to consist of seven members, three of whom will be designated by OncoGenex and four of whom will be designated by Achieve. OncoGenex is expected to designate Scott Cormack, Stewart Parker and Martin Mattingly. Achieve is expected to designate Richard Stewart, Anthony Clarke and two other independent directors that have yet to be determined. Additionally, at the effective time of the First Merger, Richard Stewart, the current Chairman of Achieve, is expected to be the Chairman and Chief Executive Officer of the combined company; Anthony Clarke, the current Chief Scientific Officer of Achieve, is expected to be the Chief Scientific Officer of the combined company; and John Bencich, OncoGenex's Chief Financial Officer and Cindy Jacobs, OncoGenex's Chief Medical Officer, are expected to continue to serve the combined company in their respective roles.

In accordance with the terms of the Merger Agreement, (i) certain of the officers and directors of OncoGenex, who collectively hold approximately 1.2 percent of the outstanding shares of its capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with Achieve, or the OncoGenex Support Agreements, and (ii) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with OncoGenex, or the Achieve Support Agreements, and together with the OncoGenex Support Agreements, the Support Agreements. The Support Agreements include covenants as to the voting of such shares in favor of approving the transactions contemplated by the Merger Agreement and against actions that could adversely affect the consummation of the Merger.

The Support Agreements will terminate upon the earlier of the consummation of the First Merger or the termination of the Merger Agreement by its terms.

Concurrently and in connection with the execution of the Merger Agreement, (i) certain of the officers and directors of OncoGenex, who collectively hold approximately 1.2 percent of the outstanding shares of its capital stock as of the close of business on January 4, 2017 and (ii) certain officers, directors and stockholders of

Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into lock-up agreements with OncoGenex, pursuant to which, subject to certain exceptions, each stockholder will be subject to a 180-day, or the Lock-Up Period, lock-up on the sale of shares of its capital stock, which Lock-Up Period shall begin upon the consummation of the First Merger.

OncoGenex expects to issue contingent value rights, or each, a CVR and collectively, the CVRs, to its existing stockholders prior to the completion of the First Merger. One CVR will be issued for each share of its common stock outstanding as of the record date for such issuance. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the First Merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to OncoGenex's product candidate apatorsen, or the Milestones, upon the terms and subject to the conditions set forth in a contingent value rights agreement to be entered into between OncoGenex, Achieve and an as of yet unidentified third party, as rights agent, or the CVR Agreement. The aggregate consideration to be distributed to the holders of the CVRs, if any, will be equal to 80% of the consideration received by the combined company as a result of the achievement of the Milestones less certain agreed to offsets, as determined pursuant to the CVR Agreement. Under the CVR Agreement, for a period of six months beginning in February 2017, OncoGenex will use certain defined efforts to enter into an agreement with a third party regarding the development and/or commercialization of apatorsen. At the expiration of this six-month period, if a third party has not entered into a term sheet for the development or commercialization of apatorsen, the combined company will no longer be contractually required to pursue an agreement regarding apatorsen and no consideration will be payable to the holders of CVRs.

OncoGenex is currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen, but has not yet identified such a party or set any Milestones. OncoGenex cannot give any assurance that it will be able to identify and enter into an agreement with a third party to develop and potentially commercialize apatorsen by August 17, 2017, or if it does, that any Milestones will be set or any consideration will ever be received by the combined company or distributed to the CVR holders. Therefore, OncoGenex stockholders will not be able to determine the value of the CVRs, if any, prior to the special meeting of OncoGenex stockholders since the value of the CVRs is contingent upon the occurrence of future events that are not yet known.

Product Candidate Apatorsen Overview

Apatorsen is OncoGenex's product candidate that is designed to inhibit production of Hsp27, a cell-survival protein expressed in many types of cancers including bladder, prostate, breast, pancreatic and non-small cell lung cancer. Hsp27 expression is stress-induced, including by many anti-cancer therapies. Overexpression of Hsp27 is thought to be an important factor leading to the development of treatment resistance and is associated with metastasis and negative clinical outcomes in patients with various tumor types. In some clinical trials evaluating apatorsen, high serum Hsp27 levels at baseline, or at the start of treatment, appear to be a strong prognostic indicator for shorter survival outcomes.

In 2013, OncoGenex initiated the ORCA (Ongoing Studies Evaluating Treatment Resistance in CAncer) program which encompasses six phase 2 clinical studies designed to evaluate whether treatment with apatorsen can lead to improved prognosis and treatment outcomes for cancer patients. Five of these trials have been completed and the remaining ongoing trial completed enrollment in 2016 with results expected in 2018. OncoGenex currently does not intend to conduct additional pre-clinical or clinical studies with apatorsen and is seeking a collaboration partnership to fund and further develop this product candidate.

Custirsen

As a result of custirsen not meeting the primary endpoint of improving overall survival in three completed phase 3 trials, OncoGenex has discontinued further development of custirsen and has begun to wind down all clinical trials and other activities related to this product candidate. In November 2016, OncoGenex provided a notice of discontinuance to Ionis and a letter of termination to UBC, notifying those parties that it has discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen.

OGX-225

In January 2017, OncoGenex discontinued further development of its pre-clinical product candidate, OGX-225. OncoGenex provided a notice of discontinuance to Ionis, notifying them that it has discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. OncoGenex intends to also terminate the UBC license agreement related to OGX-225 provided that Ionis does not exercise its reversion rights within 90 days of the notice of discontinuance. If Ionis exercises its reversion rights related to OGX-225, OncoGenex believes Ionis will assume the rights and obligations under the UBC license agreement.

Financial Overview

OncoGenex has devoted substantially all of its resources to its clinical development programs.

In 2016, OncoGenex recognized $5.1 million in collaboration revenue attributable to a collaboration agreement with Teva Pharmaceutical Industries Ltd., or Teva.

OncoGenex incurred a loss for the year ended December 31, 2016 of $20.1 million and had an accumulated deficit at December 31, 2016 of $196.9 million and $27.5 million of total assets. It expects to continue to incur additional losses either in connection with completing the merger and continuing the research and development activities of the combined company's product candidates or winding down its current product development activities.

To date, OncoGenex has funded its operations primarily through the sale of its equity securities and payments received from Teva. It will not receive any further payments from Teva.

Based on its current expectations, OncoGenex believes that its cash, cash equivalents, and short-term investments will be sufficient to fund its currently planned operations for at least the next 12 months.

OncoGenex's Product Candidate—Apatorsen

Overview of Apatorsen

Apatorsen is OncoGenex's product candidate that is designed to inhibit production of Hsp27, a cell-survival protein expressed in many types of cancers including bladder, prostate, breast, pancreatic and non-small cell lung cancer. Hsp27 expression is stress-induced, including by many anti-cancer therapies. Overexpression of Hsp27 is thought to be an important factor leading to the development of treatment resistance and is associated with metastasis and negative clinical outcomes in patients with various tumor types. In some clinical trials evaluating apatorsen, high serum Hsp27 levels at baseline, or at the start of treatment, appear to be a strong prognostic indicator for shorter survival outcomes.

Apatorsen utilizes second-generation antisense drug chemistry and belongs to the drug class known as antisense therapeutics. OncoGenex has collaborated with Ionis and selectively licensed technology from Ionis to combine Ionis' second-generation antisense chemistry with its proprietary gene target sequences to create an inhibitor that is designed to down-regulate Hsp27. In contrast to first-generation antisense chemistry, second-generation antisense chemistry has improved target binding affinity, increased resistance to degradation and improved tissue

distribution. These improvements result in slower clearance of the therapies from the body, which allow for less frequent dosing and thereby make treatment easier on patients at a lower associated cost.

A number of preclinical studies have shown that reducing Hsp27 production induces tumor cell death in prostate, non-small cell lung, bladder and pancreatic cancer cells. The studies also suggest that reducing Hsp27 production sensitizes prostate tumor cells to hormone ablation therapy. These preclinical studies have also shown that inhibiting the production of Hsp27 in human prostate, bladder, lung, breast, ovarian and pancreatic tumor cells sensitizes the cells to chemotherapy.

Hsp27 has been reported by others to function as an immunomodulatory protein by a number of mechanisms that include altering important membrane-expressed proteins on monocytes and immature dendritic cells; this alteration results in tumor-associated immune cells that are not functional in identifying and killing cancer cells. The induction of anti-inflammatory cytokines by Hsp27 may also play a role in down-regulating lymphocyte activation leading to additional unresponsive immune cells.

In 2013, OncoGenex initiated the ORCA (Ongoing Studies Evaluating Treatment Resistance in CAncer) program which encompasses six phase 2 clinical studies designed to evaluate whether treatment with apatorsen can lead to improved prognosis and treatment outcomes for cancer patients. Five of these trials have been completed and the remaining ongoing trial completed enrollment in 2016 with results expected in 2018. OncoGenex currently does not intend to conduct additional pre-clinical or clinical studies with apatorsen and is seeking a collaboration partnership to fund and further develop this product candidate.

Summary of Apatorsen Development Program

Ongoing Apatorsen Trial:

Cancer Indication and Trial	Treatment Combination	Status
Advanced squamous NSCLC (Spruce-2)	Gemcitabine and carboplatin with and without apatorsen (~ 90 patients)	• Patient enrollment completed end of December 2016

Completed Apatorsen Trials:

Cancer Indication	Treatment Combination	Status
Advanced non-squamous NSCLC (Spruce)	Carboplatin and pemetrexed with and without apatorsen (~155 patients)	• Phase 2 top-line results on PFS reported in January 2016 and survival results reported below under the headings "OncoGenex's Product Candidate—Apatorsen—Summary of Completed Apatorsen Clinical Trials"
Metastatic bladder cancer (Borealis-2)	Docetaxel with and without apatorsen (~ 200 patients); second-line chemotherapy	• Final phase 2 data presented at 2017 GU ASCO
Metastatic bladder cancer (Borealis-1)	Gemcitabine and cisplatin with and without apatorsen (~ 180 patients); first-line chemotherapy	• Final phase 2 data presented at 2015 ASCO Annual Meeting • Top-line data reported in December 2014
Metastatic pancreatic cancer (Rainier)	Abraxane and gemcitabine with and without apatorsen (~ 130 patients)	• Final phase 2 data presented at 2016 GI ASCO • Top-line data reported in September 2015
Castrate resistant prostate cancer (Pacific)	Zytiga (abiraterone acetate) with and without apatorsen (~72 patients)	• Final phase 2 data presented at 2017 GU ASCO.
Solid tumors	Apatorsen with and without chemotherapy	• Final phase 1 data presented at 2010 ASCO Annual Meeting,
Superficial and muscle invasive bladder Cancer (BL-01)	Apatorsen as monotherapy (24 patients)	• Preliminary phase 1 data presented at 2012 ASCO Genitourinary Cancers Symposium
Castrate resistant prostate cancer (PR-01)	Prednisone with and without apatorsen (74 patients)	• Preliminary phase 2 data presented at 2012 ESMO Annual Meeting

Summary of Ongoing Trial

The Spruce-2™ Trial (formerly referred to as the Cedar Trial) is an investigator-sponsored, randomized phase 2 trial evaluating apatorsen plus gemcitabine and carboplatin therapy or gemcitabine and carboplatin therapy alone in patients with previously untreated advanced squamous NSCLC. Patients also continue weekly apatorsen infusions as maintenance treatment after chemotherapy until disease progression. The aim of the trial is to determine if adding apatorsen to gemcitabine and carboplatin therapy can extend progression free survival, or PFS, outcome. Additional analyses will include tumor response rates, overall survival, safety, and health-related quality of life, as well as to determine the effect of Hsp27 levels on clinical outcomes, explore potential biomarkers that may help predict response to treatment and survival outcomes in patients who were at increased risk for poor outcomes. The trial was initiated in July 2014 and completed enrollment in December 2016. During the conduct of the trial, two amendments were submitted: one that reduced the apatorsen dose to 400mg and the second that reduced patient enrollment to ~90 patients. The trial completed patient enrollment in December 2016 and results are expected in 2018. The trial is an investigator-sponsored trial being conducted and funded primarily by the UK National Cancer Research Network and the UK Experimental Cancer Medicine Network.

Summary of Completed Apatorsen Clinical Trials

The following is a summary of the preliminary or final results from completed apatorsen clinical trials.

Summary of Borealis-2 Results—The Randomized Phase 2 Clinical Trial in Patients with Metastatic Bladder Cancer who have disease progression following first-line platinum-based chemotherapy

Borealis-2 randomized 200 patients with metastatic bladder cancer whose disease had progressed following first-line platinum-based chemotherapy. Patients were randomized to receive docetaxel in combination with 600mg apatorsen or docetaxel alone. Patients could receive up to 10 cycles of docetaxel. Apatorsen maintenance could continue beyond docetaxel treatment until disease progression, toxicity, or study withdrawal. The primary endpoint analysis was a superiority test for overall survival, performed at a one-sided 0.10 significance level using a stratified log-rank test. Secondary endpoints included PFS, disease response and safety assessments. The Borealis-2 trial was an investigator-sponsored trial conducted by the Hoosier Cancer Research Network at 28 sites across the United States.

In October 2016, OncoGenex announced that the trial met its primary endpoint of improving survival at the one-sided 0.10 significance level. Patients who received apatorsen treatment experienced a 20% reduction in risk of death, compared to patients receiving docetaxel alone (overall survival hazard ratio (HR)=0.80; 80% CI: 0.65-0.98; p=0.078). In February 2017, results were presented at the American Society of Clinical Oncology, or ASCO, 2017 Genitourinary Cancers Symposium. Apatorsen was well tolerated in combination with docetaxel. The reduction in risk of progression or death was also 20% for patients receiving apatorsen in combination with docetaxel, compared to docetaxel alone (PFS HR= 0.80; 80% CI: 0.64-1.01; p=0.107). Partial or complete responses occurred in 16.2% patients receiving apatorsen plus docetaxel compared to 10.9% patients receiving docetaxel alone with median response durations of 6.2 months versus 4.4 months, respectively. Overall for the study, higher baseline serum Hsp27 levels were significantly prognostic for indicating an almost 2-fold higher risk of death (HR= 1.96; p=0.0001). In an exploratory analysis on a subset of patients (20% of total) who completed at least two treatment cycles and had either a decrease in serum Hsp27 levels from baseline or had only a 20.5% increase in serum Hsp27 levels from baseline, the reduction in risk of death with apatorsen treatment was 71% (HR= 0.29: 80% CI: 0.18-0.48; interaction p=0.0727).

A summary of treatment-emergent serious adverse events, or SAEs, that were reported for two or more subjects is provided in the table below.

Treatment-Emergent Serious Adverse Events Reported for Two or more Subjects in Either Apatorsen Arm (Safety Analysis Set)

Preferred Term	Placebo (N = 61)	600 mg Apatorsen (N = 58)	1000 mg Apatorsen (N = 60)
Any	26 (43%)	31 (53%)	37 (62%)
Urinary tract infection	2 (3%)	1 (2%)	8 (13%)
Thrombocytopenia	2 (3%)	3 (5%)	4 (7%)
Pulmonary embolism	2 (3%)	3 (5%)	3 (5%)
Abdominal pain	1 (2%)	4 (7%)	1 (2%)
Deep vein thrombosis	1 (2%)	3 (5%)	1 (2%)
Haematuria	0 (0%)	1 (2%)	3 (5%)
Neutropenia	1 (2%)	2 (3%)	2 (3%)
Sepsis	1 (2%)	2 (3%)	2 (3%)
Anaemia	0 (0%)	1 (2%)	2 (3%)
Bone pain	1 (2%)	1 (2%)	2 (3%)
Hyponatraemia	0 (0%)	0 (0%)	3 (5%)
Nausea	1 (2%)	0 (0%)	3 (5%)
Pyrexia	0 (0%)	1 (2%)	2 (3%)
Urosepsis	1 (2%)	3 (5%)	0 (0%)
Vomiting	2 (3%)	1 (2%)	2 (3%)
Bile duct obstruction	0 (0%)	2 (3%)	0 (0%)
Blood creatinine increased	0 (0%)	0 (0%)	2 (3%)
Pancytopenia	0 (0%)	0 (0%)	2 (3%)

Overall, the incidence of serious adverse events was higher in the apatorsen arms than the placebo arm (placebo: 43%, 600 mg: 53%, 1000 mg: 62%). The only SAEs that were experienced by ³5% of subjects overall were urinary tract infection (placebo: 3%, 600 mg: 2%, 1000 mg: 13%) and thrombocytopenia (placebo: 3%, 600 mg: 5%, 1000 mg: 7%).

Summary of Borealis-1 Results—The Randomized Phase 2 Clinical Trial in Patients with Metastatic Bladder Cancer

Borealis-1 randomized 183 patients with documented metastatic or locally inoperable transitional cell carcinoma, or TCC, of the urinary tract who had not previously received chemotherapy for metastatic disease and were not candidates for potentially curative surgery or radiotherapy. Patients were randomized to receive standard chemotherapy (gemcitabine/cisplatin) in combination with apatorsen at two dose levels (600 mg and 1000 mg) or gemcitabine/cisplatin plus placebo. Patients received up to six cycles of weekly intravenous therapy. Patients received weekly apatorsen or placebo maintenance therapy until disease progression or other reason for withdrawal from protocol treatment if they had completed a minimum of four cycles of chemotherapy. The primary endpoint of the trial was overall survival. Secondary endpoints included PFS, disease response and safety assessments for the two doses of apatorsen. The trial was conducted by OncoGenex as a company-sponsored trial at 50 sites in the United States, Canada, and Europe.

In December 2014, OncoGenex announced overall trial results that the addition of 600mg apatorsen to standard of care chemotherapy showed a 14% reduction in risk of death (HR = 0.86; 95% CI: 0.54-1.36; p=0.252) when compared to chemotherapy alone. Subsequent exploratory analyses showed a trend for improved survival in

patients with baseline poor prognostic features treated with 600 mg apatorsen compared to placebo (HR=0.72; 95% CI: 0.35–1.45). In general for the study, higher baseline serum Hsp27 levels were significantly prognostic for indicating a 2-fold higher risk of death (HR= 1.72; p=0.007). Further exploratory analysis of serum Hsp27 levels showed a trend towards survival benefit for the poor-prognosis patients in apatorsen 600 mg and 1000 mg arms who achieved lower overall (area-under-the-curve) serum Hsp27 levels during study treatment, compared to similar patients in the placebo arm (HR=0.45 and 0.62, respectively). Less benefit was believed to be observed in the 1000mg apatorsen arm due to increased adverse events leading to a higher rate of discontinuation of both apatorsen and chemotherapy. Apatorsen 600mg was well tolerated in combination with gemcitabine/cisplatin chemotherapy. These data were presented at the 2015 ASCO Annual Meeting.

Summary of Spruce Results—The Randomized Phase 2 Clinical Trial in Patients with Non-Small Cell Lung Cancer (NSCLC)

Spruce randomized 155 patients with previously untreated advanced non-squamous non-small cell lung cancer, or NSCLC. Patients were randomized to receive apatorsen in combination with carboplatin and pemetrexed therapy compared to carboplatin and pemetrexed therapy alone. Patients were to continue pemetrexed with weekly apatorsen or placebo infusions as maintenance treatment until disease progression if they completed a minimum of 3 cycles of chemotherapy treatment. The aim of the trial was to determine if adding apatorsen to carboplatin and pemetrexed therapy could extend PFS outcome. The study was an investigator-sponsored trial conducted by sites under the Sarah Cannon Research Institute.

In January 2016, the primary endpoint data for PFS was reported to have not reached the statistical significance required to demonstrate a benefit (PFS HR= 0.90; 80% CI 0.71-1.14; p=0.557). In the study, higher baseline serum Hsp27 levels were found to be significantly prognostic for indicating an almost 2-fold higher risk of death (HR= 1.98; p=0.0034). A potential benefit was observed in a subgroup of patients with high baseline serum Hsp27 status (~10% of total) when treated with apatorsen (PFS HR= 0.54; 80% CI: 0.193- 1.106). Study follow up with survival results was completed at the end of 2016. The addition of apatorsen to carboplatin and pemetrexed therapy did not demonstrate an overall survival benefit in the study (HR= 1.067; 80% CI: 0.838-1.359). PFS results were presented at ASCO 2016. The study investigators concluded that apatorsen and pemetrexed/carboplatin therapy was well tolerated and showed promising PFS results in the treatment of patients with non-squamous NSCLC who have Hsp27 high status and thus warranted further study in this population. OncoGenex does not intend to pursue additional trials in non-squamous NSCLC at this time.

Summary of Rainier Results—The Randomized Phase 2 Clinical Trial in Patients with Untreated Metastatic Pancreatic Cancer

Rainier randomized 132 patients with previously untreated metastatic pancreatic cancer. Patients were randomized to receive apatorsen in combination with ABRAXANE® (paclitaxel protein-bound particles for injectable suspension) (albumin-bound) and gemcitabine compared to ABRAXANE and gemcitabine alone. Patients were to receive up to six cycles of weekly intravenous therapy. The aim of the trial was to determine if adding apatorsen to ABRAXANE and gemcitabine could extend overall survival. The study was an investigator-sponsored trial conducted by sites under the Sarah Cannon Research Institute.

In September 2015, OncoGenex announced that the primary survival endpoint did not show improved survival for patients receiving apatorsen plus ABRAXANE and gemcitabine when compared to ABRAXANE and gemcitabine alone (HR= 1.098; 95% CI 0.759-1.590). Similarly there was no improvement in PFS (PFS HR=1.020; 95% CI 0.806-1.290). The study did show that higher baseline serum Hsp27 levels were significantly prognostic for indicating a 1.8-fold higher risk of death (HR= 1.84; p=0.0041). A potential benefit was observed in a subgroup of patients with high baseline serum Hsp27 status (14% of total) when treated with apatorsen (PFS HR= 0.381; 95% CI 0.120-1.208 and survival HR= 0.587; 95% CI 0.195-1.770). The study was presented at the Gastrointestinal, or GI, Cancers Symposium meeting in January 2016. The study investigators concluded that apatorsen and ABRAXANE/gemcitabine was well tolerated and that the promising results in pancreatic cancer

patients with high baseline Hsp27 status warrant further study of apatorsen in this population. OncoGenex does not intend to pursue additional trials in pancreatic cancer at this time.

Summary of Pacific Results—The Randomized Phase 2 Clinical Trial in Patients with metastatic CRPC

Pacific randomized 72 patients who were experiencing a rising PSA while receiving Zytiga® (abiraterone acetate). The aim of the trial was to determine if adding apatorsen to Zytiga treatment could reverse or delay treatment resistance by evaluating the PFS rate at a milestone Day 60 assessment. The primary endpoint was the proportion of patients who were progression free (clinical and radiologic) at study day 60. Other secondary endpoints were PSA and objective responses, time to disease progression, circulating tumor cells, or CTCs, and Hsp27 levels. The Pacific trial was an investigator-sponsored trial conducted by the Hoosier Cancer Research Network at sites in Canada and the United States.

In February 2017, results were presented at the ASCO 2017 Genitourinary Cancers Symposium. Apatorsen was well tolerated in combination with Zytiga with the median treatment duration of 106 days for apatorsen plus Zytiga compared to 75 days for continuing Zytiga alone. The proportion of patients who were progression free at Day 60 was 33% when apatorsen was added to Zytiga, compared to 17% with Zytiga alone (p=0.17). The median time of PFS was 8.6 weeks for apatorsen treatment, compared to 7.9 weeks for Zytiga. A 50% or greater decline in PSA levels was seen in 6% of patients when apatorsen was added to Zytiga compared to 3% with continuing Zytiga alone. Stable disease or partial response was seen in 20% of patients when apatorsen was added to Zytiga vs 17% with Zytiga alone. For patients with ³5 CTCs at baseline, 25% vs 13% of patients had a CTC reduction to less than 5 CTCs when apatorsen was added to Zytiga vs Zytiga alone, respectively.

Summary of Results of Apatorsen Randomized Phase 2 Clinical Trial in Patients with CRPC

This randomized, controlled phase 2 trial completed enrollment of 74 patients who had minimally symptomatic or asymptomatic advanced prostate cancer and who have not yet received chemotherapy. The trial was designed to determine the potential benefit of apatorsen by assessing the number of patients without disease progression at 12 weeks post-study treatment with or without apatorsen. Preliminary study results presented at ESMO in September 2012 showed a higher number of patients without disease progression at 12 weeks and greater declines in PSA and CTCs in patients receiving apatorsen plus prednisone treatment compared to those receiving prednisone alone. Apatorsen was well tolerated in combination with prednisone.

Summary of Results of Apatorsen Phase 1 Clinical Trial in Patients with Superficial Bladder Cancer

This investigator-sponsored phase 1 trial was designed to determine the effects of apatorsen on Hsp27 expression and tumor response rates when administered into the bladder using intravesical instillation. In addition, the trial measured the direct effect of delivering apatorsen by intravesical instillation on expression of Hsp27 in bladder tumor cells. This clinical trial was primarily funded by the National Cancer Institute of Canada.

Preliminary results from this trial were presented at the ASCO 2012 Genitourinary Cancers Symposium in February 2012 and demonstrated a trend towards decreased levels of Hsp27 and increased tumor cell death rates after intravesical treatment with apatorsen. In the apatorsen treated patients who experienced a complete pathologic response, the absence of residual disease made it difficult to fully assess the effect of apatorsen on Hsp27 expression. Therefore, the analysis was based mainly on the remaining patients who had evaluable tumor tissue. Results showed that eight of 24 patients (33%) had no pathologic evidence of disease.

Summary of Results of Apatorsen Phase 1 Clinical Trial in Patients with Solid Tumors

Apatorsen has been evaluated in a phase 1 trial in patients with breast, prostate, ovarian, or NSCLC who have failed potentially curative treatments or for whom a curative treatment does not exist. Final results of this phase 1 trial were presented in an oral presentation at the ASCO 2010 annual meeting. The phase 1 trial evaluated 42 patients treated with apatorsen as a single agent and 22 patients treated with apatorsen in combination with docetaxel who had failed up to six prior chemotherapy treatments. Apatorsen as a single agent administered

weekly was evaluated at doses from 200 mg up to 1000 mg in five cohorts of approximately six patients per cohort. Two further cohorts evaluated apatorsen at the 800 and 1000 mg doses combined with docetaxel. Patients could receive up to 10 21-day cycles.

Most adverse events, or AEs, during the trial were mild with Grade 1 (50%) or Grade 2 (37%) in severity. Approximately 12% of all AEs were more severe (Grade 3 or higher). The most frequently reported adverse events in the apatorsen monotherapy arms were infusion-related reactions (62%) and chills (55%). The most frequently reported adverse events in the apatorsen plus docetaxel arms were chills (77%), infusion-related reactions (73%), fatigue (68%), diarrhea (64%), back pain (50%), pruritus (itching) (45%) and nausea (45%). Approximately 52% of these AEs were considered related to apatorsen and reported for 60 of the 64 treated subjects (94%). The most commonly reported apatorsen-related AEs included fatigue (19/64 subjects [30%]), dyspnea (18/64 [28%]), anemia (16/64 [25%]), back pain (14/64 [22%]) and diarrhea (14/74 [22%]). The incidence of laboratory toxicity was determined based on laboratory data. The majority of laboratory toxicities were Grade 1 or Grade 2.

Twenty-nine of the 64 subjects (45%) treated in the apatorsen Phase 1 trial experienced SAEs. A summary of SAEs reported in two or more subjects is provided in the table below.

Incidence of Serious Adverse Events Reported for Two or More Subjects Overall

Preferred Term	Cohort 1 200 mg (n=6)	Cohort 2 400 mg (n=7)	Cohort 3 600 mg (n=7)	Cohort 4 800 mg (n=8)	Cohort 5 1000 mg (n=14)	Cohort 6 800 mg + Docetaxel (n=6)	Cohort 7 1000 mg + Docetaxel (n=16)
At least 1 SAE, n (%)	2 (33%)	3 (43%)	4 (57%)	3 (38%)	7 (50%)	3 (50%)	7 (44%)
Dyspnea	1 (17%)	1 (14%)	2 (29%)	0	0	1 (17%)	0
Disease progression	0	2 (29%)	0	0	1 (7%)	0	1 (6%)
Febrile neutropenia	0	0	0	0	0	0	4 (25%)
Blood creatinine increased	0	0	0	2 (25%)	0	0	0
Hydronephrosis	0	0	0	0	1 (7%)	0	1 (6%)

The most common SAE was dyspnea, reported in five of 64 subjects (8%); all SAEs of dyspnea were considered not related to apatorsen. Disease progression and febrile neutropenia, each reported in four of 64 subjects (6%), were the second most common SAEs. Febrile neutropenia was reported exclusively among subjects in the 1000 mg apatorsen + docetaxel cohort, and was considered not related to apatorsen in all but one subject. SAEs of disease progression were considered not related to apatorsen in all four subjects. Other SAEs reported in subjects (3%) were blood creatinine increased (possibly related and definitely related to apatorsen, in two subjects receiving 800 mg apatorsen as monotherapy) and hydronephrosis (both considered not related to apatorsen, in one subject each receiving 1000 mg apatorsen as monotherapy or in combination with docetaxel). Other than the increased febrile neutropenia observed in the 1000 mg apatorsen + docetaxel cohort, no other increased frequency in specific SAEs seemed to correlate with increasing apatorsen dosing or with adding docetaxel to the higher apatorsen doses.

Thirty patients had baseline and at least one post-baseline assessment of measurable disease. A total of eight of 30 patients (27%) had a decrease in measurable disease from baseline of at least 15%. For patients treated with monotherapy, three patients had tumor reductions and for patients treated with combined therapy with docetaxel, five patients had tumor reductions.

Thirty-three of 36 patients with prostate cancer had at least one post-baseline PSA. Three of 21 in the monotherapy cohorts had reductions in PSA greater than or equal to 30% as did six of 12 in the combination therapy cohorts. Six of seven patients with ovarian cancer had both baseline and post-baseline CA-125 (an ovarian tumor marker) measurements. All were treated with monotherapy. Three patients had a reduction of CA-125.

Decreases in both total CTCs and Hsp27+CTCs were observed. Hsp27+CTCs were decreased in 71% of evaluable patients.

In approximately 35% of patients, serum Hsp27 protein levels were decreased by 30% or greater over a time period of at least six weeks.

Overview of Market and Treatment

In North America, cancer has recently surpassed heart disease as the leading cause of death in the United States. The American Cancer Society estimates that approximately 1.7 million new cancer cases are expected to be diagnosed in 2017. Cancer is the second most common cause of death in the United States, accounting for nearly 1 of every 4 deaths. Approximately 600,000 Americans are expected to die of cancer in 2017.

Typically, cancer treatments are given sequentially and can include hormone therapy, surgery, radiation therapy, immunotherapy and chemotherapy. Although a particular therapy may initially be effective, tumor cells often react to therapeutic treatment by increasing the production of proteins that afford them a survival advantage, enabling them to become resistant to therapy, multiply, and spread to additional organs. As a result, many patients progress through multiple different therapies and ultimately die from the disease.

License and Collaboration Agreements

Ionis Pharmaceuticals, Inc.

Apatorsen

In January 2005, OncoGenex entered into a collaboration and license agreement with Ionis to jointly identify antisense compounds designed to inhibit the production of proteins encoded by specified gene targets. OncoGenex is solely responsible for all product development activities for antisense compounds under this collaboration. This relationship provides OncoGenex with access to Ionis' proprietary position in second generation antisense chemistry for use in specified products. OncoGenex was permitted to designate up to two collaboration gene targets for collaborative research, development and commercialization. In April 2005, Hsp27 was confirmed as a collaboration gene target, and OncoGenex and Ionis jointly designed and screened antisense compounds for this gene target. Its right to designate a second collaboration gene target expired on January 5, 2007.

Under the terms of the agreement, in the event that OncoGenex abandons apatorsen, Ionis may elect to unilaterally continue development of apatorsen, in which case OncoGenex must provide Ionis with a worldwide license or sublicense (as the case may be) of its relevant technology solely to develop and commercialize apatorsen in exchange for a royalty on Ionis' sales of apatorsen.

Under the terms of the agreement, OncoGenex may be obligated to make aggregate milestone payments of up to $4.3 million to Ionis contingent upon the occurrence of certain clinical development and regulatory events related to apatorsen. For more information regarding potential milestone payments, see "—Summary of Milestone Obligations by Product Candidate" below. OncoGenex is also obligated to pay to Ionis low to mid-single digit royalties on net sales for apatorsen, with the amount of royalties depending on whether third-party royalty payments are owed. OncoGenex paid Ionis $0.8 million in 2010 upon the initiation of a phase 2 clinical trial of apatorsen in patients with CRPC. OncoGenex did not make any royalty payments to Ionis under the terms of the agreement in 2016.

OncoGenex has agreed to indemnify Ionis and certain persons affiliated with Ionis against liabilities caused by OncoGenex and its licensees' and sublicensees' gross negligence or willful misconduct, its material breach of the collaboration and license agreement, and the manufacture, use, handling, storage, sale or other disposition of apatorsen that is sold by OncoGenex or its affiliates, agents or sublicensees.

The term of the collaboration and license agreement will continue for each product until the later of 10 years after the date of the first commercial sale of apatorsen and the expiration of the last to expire of any patents required to be licensed in order to use or sell apatorsen, unless OncoGenex abandons apatorsen and Ionis does not elect to unilaterally continue development of apatorsen.

Custirsen

In November 2016, OncoGenex provided a notice of discontinuance to Ionis notifying them that it has discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. OncoGenex believes that all financial obligations, other than continuing mutual indemnification obligations and its requirement to pay for out-of-pocket patent expenses incurred up to the date of termination and for abandoning the custirsen patents and patent applications, under all agreements with Ionis, including the Ionis settlement agreement, are no longer owed and no further payments are due.

OGX-225

In January 2017, OncoGenex discontinued further development of OGX-225. OncoGenex provided a notice of discontinuance to Ionis and a letter of termination to UBC, notifying them that it has discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. OncoGenex believes that all financial obligations, other than continuing mutual indemnification obligations and the requirement to pay for out-of-pocket patent expenses incurred up to the date of termination and for abandoning the OGX-225 patents and patent applications, under all OGX-225-related agreements with Ionis and UBC, are no longer owed and no further payments are due.

University of British Columbia

Apatorsen

Under a license agreement entered into in April 2005, as amended, UBC granted to OncoGenex an exclusive, worldwide license to commercialize its existing intellectual property and any improvements related to Hsp27. This technology, combined with Ionis' second-generation antisense chemistry, is OncoGenex's product candidate apatorsen. In connection with entering into the license agreement, OncoGenex issued to UBC shares that were exchanged in the Arrangement for 6,533 shares of its common stock. OncoGenex also agreed to pay UBC low single digit royalties on the revenue from sales of apatorsen, which royalty rate may be reduced in the event that it must pay additional royalties under patent licenses entered into with third parties in order to manufacture, use or sell apatorsen. OncoGenex may be obligated to make aggregate milestone payments of up to CAD$0.8 million to UBC contingent upon the occurrence of certain clinical development and regulatory events related to apatorsen. For more information regarding potential milestone payments, see "—Summary of Milestone Obligations by Product Candidate" below. OncoGenex is obligated to pay UBC CAD$2,000 in annual maintenance fees. OncoGenex paid UBC CAD$0.1 million in 2010 in relation to the initiation of a phase 2 trial of apatorsen in patients with CRPC. The occurrence and receipt of upfront and milestone payments and the generation of royalty revenue are uncertain. OncoGenex did not make any royalty payments to UBC under the terms of the agreement in 2016.

Subject to certain exceptions, OncoGenex agreed to use its commercially reasonable efforts to (i) develop and exploit the licensed technology and any improvements and (ii) promote, market and sell any resulting products. It is permitted to sublicense the technology, subject to certain consent and other requirements. OncoGenex directs patent prosecution and are responsible for all fees and costs related to the preparation, filing, prosecution and maintenance of the patent rights underlying the license agreement. OncoGenex indemnifies UBC and certain of UBC's affiliates against liability arising out of the exercise of any rights granted pursuant to the agreement. The term of the agreement will expire on the later of 20 years from its effective date and the expiration of the last patent licensed under the agreement. Depending on the outcome of the pending patent applications in the licensed patent family, and subject to any applicable patent term extensions, a patent issuing from this family would

expire in all jurisdictions by 2023. OncoGenex may also file additional patent applications related to Hsp27 that could potentially extend the expiration date of the last to expire patent in this area.

Custirsen

In November 2016, OncoGenex provided a letter of termination to UBC notifying them that it has discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. OncoGenex believes that all financial obligations, other than continuing mutual indemnification obligations and its requirement to pay for out-of-pocket patent expenses incurred up to the date of termination and for abandoning the custirsen patents and patent applications, under all agreements with UBC, are no longer owed and no further payments are due.

OGX-225

In January 2017, OncoGenex discontinued further development of OGX-225. OncoGenex provided a notice of discontinuance to Ionis and a letter of termination to UBC, notifying them that it has discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. OncoGenex believes that all financial obligations, other than continuing mutual indemnification obligations and the requirement to pay for out-of-pocket patent expenses incurred up to the date of termination and for abandoning the OGX-225 patents and patent applications, under all OGX-225-related agreements with Ionis and UBC, are no longer owed and no further payments are due.

Summary of Milestone Obligations by Product Candidate

The following table sets forth the milestones that OncoGenex may be required to pay to third parties under the license and collaboration agreements described above. As described above, it will also be required to pay certain revenue-based royalties with respect to its product candidate.

Milestone Obligations to Third Parties	Amount Payable
Apatorsen	Up to $4,808,000(1)(2)(3)

(1) Additional milestone payments may be required for product approvals outside the field of oncology.
(2) Payable in connection with initiating certain clinical trials and obtaining certain market approvals.
(3) Certain milestone payments are payable in Canadian dollars, which are translated based on the December 31, 2016 exchange rate of US$1.00 = CAD$1.34551 and rounded to the nearest $1,000.

Government Regulations

Drug Approval Process

Regulation by government authorities in the United States and other countries is a significant factor in OncoGenex's ongoing research and development activities and in the production and marketing of its products. In order to undertake clinical trials and to produce and market products for human use, mandatory procedures and safety standards established by the FDA in the United States and by comparable agencies in other countries must be followed.

The standard process before a pharmaceutical agent may be marketed includes the following steps:

- preclinical studies, including laboratory evaluation and animal studies to test for initial safety and efficacy;
- submission to national health authorities of an IND or Clinical Trials Application, or CTA, or equivalent dossier, which must be accepted by each national health authority before human clinical trials may commence in that country;

- adequate and well-controlled clinical trials to establish the safety and efficacy of the drug in its intended population and use(s);
- submission to appropriate national and/or regional regulatory health authorities of a New Drug Application, or NDA, or equivalent marketing authorization application, which application is not automatically accepted for review; and
- approval by appropriate regulatory health authorities of the marketing authorization application prior to any commercial sale or shipment of the drug in each country or jurisdiction.

As part of the regulatory health authority approval for each product, the drug-manufacturing establishment is subject to inspection by the FDA and must comply with current Good Manufacturing Practices, or cGMP, requirements applicable to the production of pharmaceutical drug products. The facilities, procedures and operations of manufacturers must be determined to be adequate by the FDA before product approval.

Preclinical studies include laboratory evaluation of the active drug substance and its formulation in animals to assess the potential safety and efficacy of the drug and its formulation. Prior to initiating the first clinical testing of a new drug product candidate, the results of the preclinical studies are submitted to regulatory health authorities as part of an IND or CTA, and must be accepted before the proposed clinical trial(s) can begin.

Clinical trials for cancer therapeutics involve the administration of the investigational drug to patients with a defined disease state, under the supervision of a qualified principal investigator.

Clinical trials are conducted in accordance with protocols that detail the parameters to be used to monitor safety and efficacy. Each protocol is submitted to regulatory health authorities as part of the IND or CTA in each country where clinical trials are to be conducted. Each clinical trial is approved and monitored by independent Institutional Review Boards, or IRB, or Ethics Committees who consider ethical factors, informed consent documents, the safety of human subjects and the possible liability of the institutions conducting a clinical trial. The IRB or Ethics Committee may require changes in the clinical trials protocol, which may delay initiation or completion of the trial.

Clinical trials typically are conducted in three sequential phases, although the phases may overlap. In phase 1, the initial introduction of the drug to humans, the drug is tested for safety and clinical pharmacology. Phase 2 trials involve more detailed evaluation of the safety and efficacy of the drug in patients with a defined disease. Phase 3 trials consist of large-scale evaluations of safety and efficacy of the investigational drug compared to accepted standard therapy in a defined disease.

The process of completing clinical testing and obtaining regulatory approval for a new product takes a number of years and requires the expenditure of substantial resources. The FDA, or another regulatory authority, may not grant approval on a timely basis, if at all. OncoGenex may encounter difficulties in securing regulatory approval or unanticipated costs, which may delay or preclude the commercialization, if any, of apatorsen or future product candidates. For instance, regulatory authorities may conclude that the data submitted in a marketing authorization application, such as a NDA, are not adequate to support approval of a pharmaceutical agent and may require further clinical and preclinical testing, re-submission of the application, and further review. Even after initial approval has been obtained, an indication may be limited or conditioned on the provision of further studies to support an approved indication, and further studies will be required to gain approval for the use of a product for clinical indications other than those for which the product was approved initially. Also, regulatory authorities require post-marketing surveillance programs to monitor the drug product's side effects.

Marketing of pharmaceutical products outside of the United States is subject to regulatory requirements that vary from country to country. In the European Union, the general trend has been towards coordination of common standards for clinical testing of new drug products. Centralized approval in the European Union is coordinated through the EMA.

The level of regulation outside the United States and the European Union varies widely. The time required to obtain regulatory approval from regulatory agencies in each country may be longer or shorter than that required for FDA or EMA approval. In addition, in certain markets, reimbursement is subject to governmentally mandated prices.

Contract Research Agreements

OncoGenex's strategy is to outsource certain product development activities and have established contract research agreements for, preclinical, clinical, manufacturing and some data management services. It chooses which business or institution to use for these services based on their expertise, capacity and reputation and the cost of the service.

OncoGenex also provides or has provided quantities of its product candidates to academic research institutions to investigate the mechanism of action and evaluate novel combinations of product candidates with other cancer therapies in various cancer indications. These collaborations expand its research activities for its product candidates with modest contribution from OncoGenex.

Research and Development Expenditures

For the years ended December 31, 2016, 2015 and 2014, OncoGenex's expenditures for research and development activities were $14.8 million, $25.1 million and $46.2 million, respectively. Such research and development expenses primarily related to the advancement of its product candidates custirsen and apatorsen.

Manufacturing

OncoGenex does not own facilities for the manufacture of materials for clinical or commercial use. It relies and expects to continue to rely on contract manufacturers to manufacture its product candidate in accordance with cGMP, for use in clinical trials, as well as for process development as required.

To date, all active pharmaceutical ingredient, or API, and drug product for apatorsen has been manufactured by third parties on a purchase order basis, under cGMP.

Intellectual Property

OncoGenex's success depends in part on its ability and that of its collaborators to obtain and maintain proprietary protection for its product candidate, technology, and know-how, to prevent others from infringing on the proprietary rights of its product candidate, and to operate without infringing on the proprietary rights of others.

Patents

OncoGenex has a license from UBC and Ionis to use, make, have made, or make improvements upon apatorsen. In addition, it has a pending family of applications on an apatorsen formulation.

OncoGenex has been granted non-exclusive rights to all intellectual property owned, licensed or otherwise controlled by Ionis as of the date of its agreements with Ionis that relate to second-generation antisense chemistry and that are required for apatorsen. Ionis is generally restricted from engaging in research, development and commercialization of antisense compounds related to Hsp27, other than as provided in the collaboration and license agreement related to each target. Ionis directs patent prosecution and is responsible for all fees and costs related to the preparation, filing, prosecution and maintenance of these patent rights, which extend to numerous jurisdictions throughout the world. Individual patents have terms of protection depending on the laws of the countries in which the applications are made.

OncoGenex directs patent prosecution, and is responsible for all fees and costs related to the preparation, filing, prosecution and maintenance of the patent rights for intellectual property under license from UBC covering apatorsen. It files patent applications for this intellectual property in the United States, Canada, Europe (through the European Patent Office), Japan and other jurisdictions.

Composition of matter patents covering apatorsen have been issued in the United States and certain other jurisdictions. Additional patent applications covering all of these products, as well as other technologies, are pending in the United States and certain other countries.

Generally, patents issued in the United States are effective for 20 years from the earliest non-provisional filing date, if the application from which the patent issues was filed on or after June 8, 1995 (otherwise the term is the longer of 17 years from the issue date and 20 years from the earliest non-provisional filing date). The duration of patent terms for non-U.S. patents is typically 20 years from the earliest corresponding national or international filing date. OncoGenex's licensed UBC patent estate related to apatorsen, based on those patents that exist now, will expire in 2023, which does not include extensions that may be available or patent applications that are currently pending. Patent term extensions, specifically to make up for regulatory delays, are available in the United States, Europe and Japan. Although it believes that some or all patents related to apatorsen will meet the criteria for patent term extensions, OncoGenex can provide no assurance that it will obtain such extensions.

OncoGenex also relies on unpatented trade secrets, proprietary know-how and continuing technological innovation, which it seeks to protect, in part, by confidentiality agreements with its corporate partners, collaborators, employees and consultants in its drug development research. OncoGenex can provide no assurance that these agreements will not be breached, that it will have adequate remedies for any breach, or that its trade secrets or know-how will not otherwise become known or be independently discovered by competitors. Further, OncoGenex can provide no assurance that it will be able to protect its trade secrets or that others will not independently develop substantially equivalent proprietary information and techniques.

Trademarks

OncoGenex owns several trademarks registered in the United States, including word marks ONCOGENEX™, ORCA™, Spruce™, and design marks ORCA, Pacific, Borealis-1, Borealis-2, and the helical totem element that accompanies the clinical trial trademarked identifiers. In Canada, OncoGenex has corresponding trademark registrations.

OncoGenex can provide no assurance that its registered or unregistered trademarks or trade names will not infringe upon third-party rights or will be acceptable to regulatory agencies.

Competition

The life sciences industry is highly competitive, and OncoGenex faces significant competition from many pharmaceutical, biopharmaceutical and biotechnology companies that are researching and marketing products designed to address cancer indications for which it is currently developing products or for which it may develop products in the future. OncoGenex is aware of several other companies which are developing therapeutics that seek to promote tumor cell death. Several therapies have been recently approved by the FDA, and it expects more to be approved in the future.

Many oncology drugs in clinical trials are being developed for bladder, lung and prostate cancers. Certain of these drugs are designed, like apatorsen, to interfere with mechanisms potentially involved with treatment resistance. If new drugs are approved for sale for the indications that OncoGenex is evaluating apatorsen, whether or not they are targeting mechanisms of treatment resistance, in advance of apatorsen or even after its commercialization, the market's interest in apatorsen may be reduced or eliminated. It is aware of several other companies developing therapeutic products, whether antisense or otherwise, which seek to promote tumor cell death by inhibiting proteins believed to promote cell survival. Its competitors may seek to identify gene sequences, protein targets or antisense chemistry different from OncoGenex's, and outside the scope of its intellectual property protection, to develop antisense therapeutics that serve the same function as apatorsen. Its competitors may also seek to use mechanisms other than antisense to inhibit the proteins that apatorsen is designed to inhibit.

Apatorsen has been evaluated in bladder, prostate, pancreas and lung cancer indications. Substantial advancements in the treatment of each of these cancers has occurred in the past several years and new products from OncoGenex's competitors have been approved for marketing on the basis of showing a survival advantage. Many of its existing and potential competitors have substantially greater financial resources and expertise than OncoGenex does in manufacturing and developing products, conducting clinical trials, obtaining regulatory approvals and marketing. These entities also compete with OncoGenex in recruiting and retaining qualified scientific and management personnel, as well as in acquiring products and technologies complementary to its programs. Standard treatments vary considerably by cancer indication, and new drugs may be more effective in treating one cancer indication than another. In addition, cancer is a difficult disease to treat and it is likely that no one therapeutic will replace all other therapies in any particular indication. Therapeutic strategies for treating cancer are increasingly focused on combining a number of drugs in order to yield the best results. Since apatorsen can potentially be used in multiple cancer indications and target the tumors' adaptive survival mechanisms, it may potentially be synergistic with many new and currently marketed therapies. The ability for apatorsen to be developed and compete successfully will depend largely on OncoGenex's ability to find a collaboration partner willing to fund the future development and commercialization of this product candidate and for that collaboration partner, if any, to:

- maintain or establish development programs in combination with new agents that may replace or diminish the markets for which OncoGenex is currently developing apatorsen;
- establish that apatorsen is well tolerated and result in a clinical benefit when administered to cancer patients;
- establish that apatorsen addresses significant unmet needs for patients, resulting in prioritization of apatorsen over other treatment options;
- advance the development of apatorsen, including the enrollment of patients for OncoGenex's clinical trials;
- gain regulatory approval for apatorsen in its first indication as well as expand into additional indications;
- commercialize apatorsen successfully, which includes convincing physicians, insurers and other third-party payors of the advantages of apatorsen over current therapies, when and if they have advantages; and
- obtain intellectual property protection and protect the exclusivity for apatorsen, when and if OncoGenex has any.

Employees

As of December 31, 2016, OncoGenex had a total of 17 employees, of whom 10 were engaged in research and development functions, including clinical development, regulatory affairs and manufacturing, and seven were engaged in general and administrative functions, including accounting and finance, administration, and corporate communications.

All of OncoGenex's employees have entered into non-disclosure agreements regarding its intellectual property, trade secrets and other confidential information. None of its employees are represented by a labor union or covered by a collective bargaining agreement, nor has OncoGenex experienced any work stoppages. OncoGenex believes that it maintains satisfactory relations with its employees.

From time to time, OncoGenex also uses outside consultants to provide advice on its clinical development plans, research programs, administration and potential acquisitions of new technologies.

Financial Information

OncoGenex manages its operations and allocate resources as a single reporting segment. Financial information regarding its operations, assets and liabilities, including its total revenue and net loss for the years ended December 31, 2016, 2015 and 2014 and its total assets as of December 31, 2016 and 2015, is included in OncoGenex's Consolidated Financial Statements included in this proxy statement/prospectus/information statement.

Company Information

OncoGenex was incorporated in California in October 1991 and subsequently reorganized as a Delaware corporation in March 1995. Its principal executive offices are located at 19820 North Creek Parkway, Bothell Washington 98011, and its telephone number is (425) 686-1500.

In August 2008, OncoGenex, then named Sonus Pharmaceuticals, Inc., completed its acquisition, or the Arrangement, of OncoGenex Technologies, a Canadian corporation, as contemplated by the Arrangement Agreement between the companies. It then changed its name to OncoGenex Pharmaceuticals, Inc. As a result of the Arrangement, OncoGenex Technologies became its wholly owned subsidiary. OncoGenex Technologies was incorporated under the federal laws of Canada in May 2000. OncoGenex, Inc., a former subsidiary of OncoGenex Technologies, was incorporated under the laws of Washington in August 2005 and was dissolved pursuant to the Articles of Dissolution filed on July 1, 2009.

Available Information

OncoGenex maintains a website at http://www.oncogenex.com. The information contained on or accessible through its website is not part of this proxy statement/prospectus/information statement. OncoGenex's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or Exchange Act, are available free of charge on its website as soon as reasonably practicable after it electronically files such reports with, or furnishes those reports to, the SEC. Any information OncoGenex filed with the SEC may be accessed and copied at the SEC's Public Reference Room at 100 F Street NE, Washington, DC 20549. Information may be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at http://www.sec.gov.

ACHIEVE BUSINESS

Overview

Achieve is a clinical-stage specialty pharmaceutical company focused on the development and commercialization of cytisine, a smoking cessation aid that has been marketed in Central and Eastern Europe by a third party for over 15 years under the brand name Tabex™ and is estimated to have treated in excess of 21 million patients through December 2016. Cytisine is a naturally occurring plant-based alkyloid from the seeds of the *Laburnum anagyroides* plant that is believed to reduce the severity of nicotine withdrawal symptoms by targeting receptors in the brain. Cytisine has the potential to be more cost effective than competing prescription smoking cessation medicines and to have better efficacy than currently available Over-the-Counter, or OTC, treatments.

Achieve has identified cytisine as a potentially cost-effective treatment for nicotine dependency and is developing cytisine as an aid to smoking cessation and nicotine dependence to address the limitations of both prescription only drugs and OTC products. Achieve's goal is to obtain approval from the U.S. Food and Drug Administration, or FDA, and from the European regulatory agencies for the sale and distribution of Achieve's cytisine in the United States and Western Europe initially, and subsequently to other countries. Achieve intends to file an Investigational New Drug, or IND, application for cytisine in 2017. While third party trials of cytisine have been conducted that may support any future clinical trials by Achieve, Achieve has not yet submitted an IND to the FDA for cytisine or conducted clinical trials for cytisine in the United States or any other jurisdiction.

Two large-scale, investigator-led, Phase 3 clinical trials conducted in over 2,000 patients demonstrated positive results. These Phase 3 trials reinforced results from historic Central and Eastern European studies in over 8,000 subjects. The results of the two Phase 3 clinical trials were published in the *New England Journal of Medicine* in September 2011 and December 2014.

Achieve has met with the FDA and with other national regulatory authorities in Europe to identify the steps required for the approval of cytisine. The FDA has requested results from non-clinical studies, additional human pharmacokinetic studies and adequate demonstration of safety and efficacy from well-controlled placebo-controlled Phase 3 clinical trials. Achieve believes that a single, well controlled Phase 3 clinical trial demonstrating safety and statistically significant efficacy, in combination with the two already completed Phase 3 trials, will be sufficient for FDA approval. The non-clinical studies have been sponsored by the National Center for Complementary and Integrative Health, or NCCIH, division of the U.S. National Institutes of Health, or NIH, in addition to the National Cancer Institute, or NCI. The non-clinical studies and the additional human pharmacokinetic studies are expected to be completed in the second half of 2017. Achieve intends to commence a Phase 3 clinical trial in the first half of 2018, subject to the completion of the merger and availability of capital.

Achieve's management team has significant experience in growing emerging companies involved in developing under-recognized and under-utilized pharmaceutical compounds to meet unmet or underserved medical needs. Achieve has used and intends to use this experience in the future to develop and ultimately commercialize cytisine either directly or via strategic collaborations or both.

Achieve was formed in 2015 as a Delaware corporation. Achieve has one direct wholly-owned subsidiary, Extab Corporation, a Delaware corporation, which was formed in 2009. Extab Corporation in turn has one direct wholly-owned subsidiary, Achieve Pharma UK Limited, a United Kingdom company, which was formed in 2009. References throughout this section of the proxy to "Achieve" shall include references to its direct and indirect wholly-owned subsidiaries unless otherwise noted.

Overview of the Tobacco Epidemic

The NIH and the World Health Organization, or WHO, estimated in January 2017 that approximately 1.1 billion people globally are smokers and that 6 million people die annually from diseases related to tobacco use including

600,000 from passive smoke. This figure is projected to grow to 8 million by 2030. Tobacco use is estimated to cause 12% of deaths among persons aged 30 years and over worldwide, including deaths from cancer, diabetes, cardiovascular disease and lung diseases such as tuberculosis and lower respiratory tract infections.

The U.S. Centers for Disease Control, or CDC, estimate that in 2015 approximately 15.1% of all U.S. adults (36.5 million people) were cigarette smokers. Smoking remains the single largest preventable cause of death worldwide and in the United States.

CDC estimates that the annual cost of smoking related illnesses in the United States is more than $300 billion annually in direct medical care and lost productivity. Over 16 million people in the United States are living with a disease caused by smoking. Smoking causes cancer, heart disease, stroke, lung diseases, diabetes and chronic obstructive pulmonary disease, or COPD, which includes emphysema and chronic bronchitis. Smoking also increases risk for tuberculosis, certain eye diseases and problems of the immune system, including rheumatoid arthritis.

According to the CDC, although many smokers would like to quit, tobacco smoking is highly addictive. It is estimated that nearly 35 million smokers in the United States want to quit each year. The CDC estimates that more people are addicted to nicotine than any other drug and research suggests that nicotine may be as addictive as heroin, cocaine or alcohol.

The Global Smoking Cessation Market

Coherent Market Insights, in its March 2017 report "Smoking Cessation and Nicotine De-addiction Products Market," estimated that global revenues for smoking cessation and nicotine de-addiction products in 2016 was approximately $4.0 billion including Nicotine Replacement Therapy, or NRT, and drug therapy. In 2016, U.S. sales for NRT and drug therapy were estimated to be $1.4 billion growing to $1.9 billion by 2024. The European market was estimated to have sales of $1.0 billion in 2016 increasing to $1.2 billion in 2024.

Two prescription oral treatments for smoking cessation are currently available in the United States: Chantix® (varenicline) marketed by Pfizer and Zyban® (bupropion) marketed by GlaxoSmithKline (as well as generic manufacturers). Both of these prescription treatments have been proven effective in aiding smoking cessation, however, both are also associated with side effects. Chantix's labeling indicates elevated instances of nausea, abnormal dreams, constipation, flatulence and vomiting may be experienced by Chantix-treated patients compared to placebo-treated patients, and Zyban's labeling discloses potential adverse reactions including insomnia, rhinitis, dry mouth, dizziness, nervous disturbance, anxiety, nausea, constipation and arthralgia.

The vast majority of OTC smoking cessation aids are focused on NRTs. NRTs come in many forms, including gums, lozenges and patches, and although they are marketed at a lower price point, they have been shown to be less effective than prescription drugs. For example, a Cochrane Group independent database review of nicotine receptor partial agonists published in 2016 compared varenicline (Chantix) with a number of NRTs and found that varenicline appeared to be more effective than the NRTs.

Cytisine Opportunity

Cytisine has been marketed by Sopharma A.D., or Sopharma, in Central and Eastern Europe for over 15 years under the brand name Tabex. Tabex is estimated to have treated over 21 million patients with over 15 million cases in the periodic safety update report, or PSUR, safety database which is provided to the European authorities annually. Tabex is currently marketed in a number of countries in Central and Eastern Europe, as well as in other geographic regions, both as a prescription drug and OTC.

Achieve has an exclusive license and supply agreement with Sopharma for the development and commercialization of cystisine outside of Sopharma's territory, which consists of certain countries in Central and

Eastern Europe, Scandinavia, North Africa, the Middle East and Central Asia, as well as Vietnam. Achieve intends to develop and commercialize cytisine in the United States and Western Europe initially and may thereafter target other markets outside of Sopharma's territory such as Japan, Australasia, Latin & South America.

Achieve identified cytisine as a potentially cost-effective treatment for nicotine dependency and is developing cytisine as an aid to smoking cessation and nicotine dependence to address the limitations of both prescription only drugs and OTC products. Achieve believes that a substantial market exists in the United States, EU and the rest of the world for a safe and cost-effective smoking cessation treatment. Increasingly constrained healthcare budgets have focused government attention on drug pricing, which Achieve believes cytisine can address by serving as a lower-cost alternative to existing treatments, with the potential for better efficacy than NRTs and a potentially superior side effect profile than existing prescription smoking cessation products. Achieve's goal is to obtain approval from the FDA and from the European regulatory agencies for the sale and distribution of Achieve's cytisine in the United States and Western Europe initially, and subsequently to other countries outside of Sopharma's territory.

Achieve plans to file an IND application in 2017 that will be supported by the results of a non-clinical program being conducted by the NIH and NCI, which includes pharmacokinetic, pharmacodynamic and toxicity studies. Achieve expects this program to be complete in the second half of 2017. Subject to the timely completion of the merger, Achieve plans to conduct pharmacokinetic studies in the second half of 2017, prior to a pivotal Phase 3 trial that is expected to begin in the first half of 2018. The Phase 3 trial is designed as a multicenter, placebo-controlled trial and is expected to enroll over 2,000 participants. Trial participants will be provided with behavioral support and will be treated for 25 days with cytisine and followed for 6 months to determine the rate of smoking cessation. Based on the results of the Phase 3 trial, Achieve plans on submitting a New Drug Application, or NDA, for marketing approval of cytisine.

Cytisine Mechanism of Action

Cytisine is a partial agonist that binds with high affinity to the alpha-4 beta-2, ora4b2, nicotinic acetylcholine receptor in the brain and is believed thereby to block nicotine cravings and reduce the severity of nicotine withdrawal symptoms. The a4b2 nicotinic receptor is a well-understood target in addiction. When nicotine binds to this receptor, it causes dopamine to be released in the mid brain, reinforcing the dopamine reward system. This receptor has been implicated in the development and maintenance of nicotine dependence. At higher concentrations cytisine is believed to act as a partial agonist at the a4b2 nicotinic receptor, preventing nicotine from binding and releasing dopamine.

Cytisine Clinical Trials

Cytisine has been tested in two large, randomized Phase 3 clinical trials conducted according to Good Clinical Practice, or GCP, in more than 2,000 participants. The objective was to evaluate the efficacy and safety of cytisine according to current clinical development standards.

The first, the Tabex Smoking Cessation, or TASC, trial, was sponsored by the UK Centre for Tobacco Control Studies and evaluated cytisine versus placebo in 740 primarily moderate-to-heavy smokers treated for 25 days in a single center in Warsaw, Poland. The primary outcome measure was sustained, biochemically verified smoking abstinence for 12 months after the end of treatment. The TASC trial was conceived by Professor Robert West (Department of Epidemiology and Public Health, University College London) and was funded by the a grant from the National Prevention Research Initiative, including contributions from Cancer Research UK, Medical Research Council, United Kingdom Department of Health and others.

The results of the TASC trial were published in the *New England Journal of Medicine* in September 2011. The rate of sustained 12-month abstinence was 8.4% in the cytisine arm as compared with 2.4% in the placebo group

(p=0.001). These results showed that cytisine was 3.4 times more likely than a placebo to help participants stop smoking and remain non-smokers for one year. The rate of sustained 6-month abstinence was 10.0% in the cytisine arm as compared with 3.5% in the placebo group (p<0.001). Cytisine was well tolerated with a slight but significant increase in combined gastrointestinal adverse events (upper abdominal pain, nausea, dyspepsia and dry mouth; cytisine 51/370 (13.8% and placebo 30/370 (8.1%)). The safety profile of cytisine was similar to that of a placebo with no other significant differences in the rate of side effects in the two trial arms.

A summary of adverse events reported in 10 or more subjects in the TASC trial is included in the table below.

Adverse Events Reported by 10 or More Study Participants[1]

Event	Cytisine (N=370)	Placebo (N=370)
	percent (number)	
Any gastrointestinal event	13.8 (51)	8.1 (30)
Upper abdominal pain	3.8 (14)	3.0 (11)
Nausea	3.8 (14)	2.7 (10)
Dyspepsia	2.4 (9)	1.1 (4)
Dry mouth	2.2 (8)	0.5 (2)
Any psychiatric event	4.6 (17)	3.2 (12)
Dizziness	2.2 (8)	1.1 (4)
Somnolence	1.6 (6)	1.1 (4)
Any nervous system event	2.7 (10)	2.4 (9)
Headache	1.9 (7)	2.2 (8)
Skin and subcutaneous tissue	1.6 (6)	1.4 (5)

(1) The incidence of events was analyzed according to the *Medical Dictionary for Regulatory Activities* System Organ Class, or SOC, categorization and preferred terms. Participants who reported more than one event in a system category were counted only once for the category. SOC categories for other events (those reported by fewer than 10 participants) were as follows: general (five events within cytisine and five with placebo), cardiac (four with cytisine and two with placebo), musculoskeletal and connective tissue (three with cytisine and three with placebo), infections (one with placebo), immune system (one with placebo) and metabolism and nutrition (one with placebo).

The second Phase 3 trial, the Cytisine As a Smoking Cessation Aid, or CASCAID, non-inferiority trial, was an open-label trial that randomized 1,310 adult daily smokers. Patients were randomized to receive either cytisine for 25 days or NRT for 8 weeks. Both treatment groups were offered low intensity telephone behavioral support during trial treatment. The primary outcome measure was continuous self-reported abstinence from smoking one month after quit date. The rate of continuous one-month abstinence was 40% in the cytisine arm as compared with 31% in the NRT arm (p<0.001). A secondary outcome included the rate of continuous six-month abstinence which was 22% in the cytisine arm as compared with 15% in the NRT arm (p=0.002). Cytisine was generally well tolerated, although self-reported adverse events were higher in the cytisine arm compared with the NRT arm. The most frequent adverse events for cytisine were nausea and vomiting (30/665 (4.6%)) and sleep disorders (28/665 (4.2%)). Reports of these same adverse events in the NRT arm were as follows: nausea and vomiting (2/655 (0.3%)) and sleep disorders (2/655 (0.3%)). The CASCAID trial was conducted by the Health Research Council of New Zealand. The results of the CASCAID trial, which were published in the *New England Journal of Medicine* in December 2014, showed that cytisine was superior to NRT for smoking cessation and, specifically, that cytisine was 1.43 times more likely than nicotine gums or patches to help participants stop smoking and remain non-smokers for six months.

A summary of adverse events reported in subjects in the CASCAID trial is included in the table below.

Summary of All-Cause Adverse Events

Event	Cytisine (N=655)	NRT (N=655)
Participants with any adverse event no. (%)	204 (31%)	134 (20%)
Adverse events — no.		
Any	288	174
In those who complied with treatment(1)	161	113
In those who did not comply with treatment	127	61
Participants with serious adverse event — no. (%)	45 (7%)	39 (6%)
Serious adverse events — no.(2)(3)	56	45
Deaths4	1	1
Life-threatening events	0	15
Hospitalizations	18	18
Otherwise medically important events	37	25
Severity of all adverse events — no.(4)		
Mild	139	78
Moderate	111	77
Severe	38	19
Most frequent adverse events — no.(5)		
Nausea and vomiting	30	2
Sleep disorders	28	2

(1) In the cytisine group, compliance was defined as having taken 80% or more of the required number of tablets within 1 month after the quit date (i.e., 80 or more tablets). In the NRT group, compliance was defined as having used NRT at 1 week and 1 month after the quit date. It was assumed that participants with missing data were not compliant.

(2) A serious event was defined as death, a life-threatening event, an event requiring hospitalization, or otherwise medically important event (i.e., the event does not belong in any of the other categories but may jeopardize the patient and may require medical or surgical intervention to prevent the occurrence of one or more other serious events).

(3) The categories are mutually exclusive.

(4) The severity of events was not medically verified.

(5) The list of most frequent adverse events excludes signs and symptoms of cold and influenza. Adverse events were categorized in accordance with the *International Statistical Classification of Diseases and Related Health Problems*, Tenth Revision (ICD-10), Australian Modification.

As cytisine has been marketed in Central and Eastern Europe for over 15 years, a substantial clinical safety database exists for cytisine containing over 15 million cases. The most recent PSUR submitted to the EMA in 2016 did not contain any new safety signals with cytisine.

Competition

The development and commercialization of new products is highly competitive. Achieve faces competition from major pharmaceutical companies, specialty pharmaceutical companies, biotechnology companies, universities and other research institutions worldwide with respect to smoking cessation and other product candidates that it may seek to develop or commercialize in the future. Achieve is aware that many companies have therapeutics marketed or in development for smoking cessation, including, Pfizer, GlaxoSmithKline, Merck, Novartis, Invion, Embera Neurotherapeutics, Redwood Scientific Technologies, 22nd Century Group, Quit4Good, Chrono

Therapeutics, NAL Pharmaceuticals, Selecta Biosciences, Aradigm and others. Because of the market opportunity, competitors and potential competitors have historically dedicated, and will continue to dedicate, significant resources to aggressively develop and commercialize their products.

Prescription Treatments

Two oral prescription drugs for smoking cessation are currently available in the United States – Chantix and Zyban. Both have been proven effective in aiding smoking cessation, however, each is associated with a number of adverse effects.

Achieve believes that cytisine may have similar efficacy to Chantix and will be more cost-effective to patients. A Cochrane Group independent database review of nicotine receptor partial agonists published in 2016 compared cytisine with Chantix and found no apparent difference in efficacy between cytisine and Chantix. However, a head-to-head comparative trial of these two treatments has not been performed. Furthermore, a report by the National Institute of Health Research in the United Kingdom comparing Chantix and cytisine concluded that cytisine appears to be more clinically effective and cost effective than varenicline (Chantix) based on expected costs and quality-adjusted life-year, or QALY, values.

Over-the-Counter Treatments

The most common OTC treatments bought in pharmacies for smoking cessation in the United States and worldwide are NRTs such as nicotine patches, nicotine gums and nicotine lozenges. Each of these products delivers nicotine to the body although they generally do so at different rates and to different parts of the body than does a traditional cigarette. As concluded by the authors of several published clinical trials conducted by others, these therapies are generally less effective than prescription treatments. Recognized brands include Niquitin®, Nicotinell®, Nicorette® and Nicoderm®. Depending on the duration of treatment, the average cost of certain OTC smoking cessation treatments can exceed prescription treatments.

Pharmaceutical companies, including larger companies in the industry, who have extensive expertise in pre-clinical and clinical testing and in obtaining regulatory approvals for products, may develop other OTC treatments for smoking cessation. In addition, academic institutions, government agencies and other public and private organizations conducting research may seek patent protection with respect to potentially competitive products or technologies. These organizations may also establish exclusive collaborative or licensing relationships with Achieve's competitors.

Government Regulation and Product Development

Achieve is heavily regulated in most of the countries in which it operates. In the United States, the principal regulating authority is the FDA. The FDA regulates the safety and efficacy of product candidates and research, quality, manufacturing processes, product approval and promotion, advertising and product labeling. In the EU, the European Medicines Agency, or EMA, and national regulatory agencies regulate the scientific evaluation, supervision and safety monitoring of product candidates, and over-see the procedures for approval of drugs for the EU and European Economic Area countries. In Japan, the Pharmaceuticals and Medical Devices Agency is involved in a wide range of regulatory activities, including clinical trials, approvals, post-marketing reviews and pharmaceutical safety. Similar regulations exist in most other countries, and in many countries the government also regulates prices. Health authorities in many middle and lower income countries require marketing approval by a recognized regulatory authority, such as the FDA or EMA, before they begin to conduct their application review process and/or issue their final approval.

United States

Achieve intends to focus initially on clinical development of cytisine in the United States. It is anticipated that cytisine tablets would receive a minimum five years of data exclusivity under the Drug Price Competition and Patent Term Restoration Act, also known as the Hatch-Waxman Act.

Before a new pharmaceutical product may be marketed in the United States, the FDA must approve an NDA, for a new drug. The steps required before the FDA will approve an NDA generally include non-clinical studies followed by multiple stages of clinical trials conducted by the trial sponsor; sponsor submission of the NDA application to the FDA for review; the FDA's review of the data to assess the drug's safety and effectiveness; and the FDA's inspection of the facilities where the product will be manufactured.

As a condition of product approval, the FDA may require a sponsor to conduct post-marketing clinical trials, known as Phase 4 trials, and surveillance programs to monitor the effect of the approved product. The FDA may limit further marketing of a product based on the results of these post-market trials and programs. Any modifications to a drug, including new indications or changes to labeling or manufacturing processes or facilities, may require the submission and approval of a new or supplemental NDA before the modification can be implemented, which may require that Achieve generate additional data or conduct additional non-clinical studies and clinical trials. Achieve's ongoing manufacture and distribution of drugs is subject to continuing regulation by the FDA, including recordkeeping requirements, reporting of adverse experiences associated with the product, and adherence to current Good Manufacturing Practices, or cGMPs, which regulate all aspects of the manufacturing process. Achieve is also subject to numerous regulatory requirements relating to the advertising and promotion of drugs, including, but not limited to, standards and regulations for direct-to-consumer advertising. Failure to comply with the applicable regulatory requirements governing the manufacture and marketing of Achieve's products may subject us to administrative or judicial sanctions, including warning letters, product recalls or seizures, injunctions, fines, civil penalties and/or criminal prosecution.

Sales and Marketing. The marketing practices of U.S. pharmaceutical companies are generally subject to various federal and state healthcare laws that are intended to prevent fraud and abuse in the healthcare industry and protect the integrity of government healthcare programs. These laws include anti-kickback laws and false claims laws. Anti-kickback laws generally prohibit a biopharmaceutical or medical device company from soliciting, offering, receiving or paying any remuneration to generate business, including the purchase or prescription of a particular product. False claims laws generally prohibit anyone from knowingly and willingly presenting, or causing to be presented, any claims for payment for reimbursed drugs or services to third-party payors (including Medicare and Medicaid) that are false or fraudulent. Although the specific provisions of these laws vary, their scope is generally broad and there may not be regulations, guidance or court decisions that apply the laws to any particular industry practices, including the marketing practices of pharmaceutical and medical device companies. Violations of fraud and abuse laws may be punishable by criminal or civil sanctions and/or exclusion from federal health care programs (including Medicare and Medicaid). The U.S. federal government and various states have also enacted laws to regulate the sales and marketing practices of pharmaceutical or medical device companies. These laws and regulations generally limit financial interactions between manufacturers and health care providers; require disclosure to the federal or state government and public of such interactions; and/or require the adoption of compliance standards or programs. Many of these laws and regulations contain ambiguous requirements or require administrative guidance for implementation. Given the lack of clarity in laws and their implementation, Achieve's activities could be subject to penalties under the pertinent laws and regulations.

Pricing and Reimbursement. Pricing for Achieve's pharmaceutical products will depend in part on government regulation. Achieve will likely be required to offer discounted pricing or rebates on purchases of pharmaceutical products under various federal and state healthcare programs, such as the Medicaid Drug Rebate Program, the "federal ceiling price" drug pricing program, the 340B drug pricing program and the Medicare Part D Program. Achieve will also be required to report specific prices to government agencies under healthcare programs, such as the Medicaid Drug Rebate Program and Medicare Part B. The calculations necessary to determine the prices reported are complex and the failure to report prices accurately may expose Achieve to penalties.

In the United States, Medicaid currently covers all smoking cessation products including Chantix and Zyban. In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively, the Health Care Reform Law, was passed, which substantially changes the

way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. Section 2502 of the Patient Protection and Affordable Care Act, or ACA, specifies that tobacco cessation medications will be removed from the list of optional medications and required for inclusion in states' prescription drug benefit. On May 2, 2014 the Department of Health and Human Services, or HHS, provided guidance into insurance coverage policy that health plans would be in compliance if they cover, among other items, screening for tobacco use, individual, group and phone counseling, all FDA approved tobacco cessation medications (both prescription and OTC) when prescribed by a healthcare provider, at least two quit attempts per year, four sessions of counseling and 90 days of treatment, with no cost sharing (co-pay) required.

Government and private third-party payers routinely seek to manage utilization and control the costs of Achieve's products. For example, the majority of states use preferred drug lists to restrict access to certain pharmaceutical products under Medicaid. Given certain states' current and potential ongoing fiscal crises, a growing number of states are considering a variety of cost-control strategies, including capitated managed care plans that typically contain cost by restricting access to certain treatments.

Healthcare Reform. The U.S. and state governments continue to propose and pass legislation designed to regulate the healthcare industry. In March 2010, the U.S. Congress enacted the ACA, which included changes that significantly affected the pharmaceutical industry, such as:

- increasing drug rebates paid to state Medicaid programs under the Medicaid Drug Rebate Program for brand name and generic prescription drugs and extending those rebates to Medicaid managed care;
- Requiring pharmaceutical manufacturers to provide discounts on brand name prescription drugs sold to Medicare beneficiaries whose prescription drug costs cause the beneficiaries to be subject to the Medicare Part D coverage gap; and
- Imposing an annual fee on manufacturers and importers of brand name prescription drugs reimbursed under certain government programs, including Medicare and Medicaid.

The ACA includes provisions designed to increase the number of Americans covered by health insurance. Specifically, since 2014, the ACA has required most individuals to maintain health insurance coverage or potentially to pay a penalty for noncompliance and has offered states the option of expanding Medicaid coverage to additional individuals.

Additionally, policy efforts designed specifically to reduce patient out-of-pocket costs for medicines could result in new mandatory rebates and discounts or other pricing restrictions. Adoption of other new legislation at the federal or state level could further affect demand for, or pricing of, Achieve's products.

On January 20, 2017, President Donald Trump issued an Executive Order to initiate the repeal of the Health Care Reform Law and Achieve expects that additional state and federal healthcare measures under the Trump administration will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand or lower pricing for its product candidates, or additional pricing pressures. Currently, the Health Care Reform Law provides coverage for smoking cessation-related activities, including two counseling attempts for smoking cessation per year and prescription drugs for smoking cessation, but not OTC treatments. If these provisions are repealed, in whole or in part, Achieve's business, financial condition or results of operations could be negatively affected.

Anti-Corruption. The Foreign Corrupt Practices Act of 1977, as amended, or FCPA, prohibits U.S. corporations and their representatives from offering, promising, authorizing or making payments to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business abroad. The scope of the FCPA includes interactions with certain healthcare professionals in many countries. Other countries have enacted similar anti-corruption laws and/or regulations. Individual states, acting through their attorneys general, have become active as well, seeking to regulate the marketing of prescription drugs under state consumer protection and false advertising laws.

Outside the United States

Achieve expects to encounter similar regulatory and legislative issues in most other countries in which it seeks to develop and commercialize cytisine.

New Drug Approvals and Pharmacovigilance. In the EU, the approval of new drugs may be achieved using the Mutual Recognition Procedure, the Decentralized Procedure or the EU Centralized Procedure. These procedures apply in the EU member states, plus the EEA countries, Norway, Iceland and Liechtenstein. The use of these procedures generally provides a more rapid and consistent approval process across the EU and EEA than was the case when the approval processes were operating independently within each country.

In 2012, new pharmacovigilance legislation came into force in the EU. Key changes include the establishment of a new Pharmacovigilance Risk Assessment Committee within the EMA, with responsibility for reviewing and making recommendations on product safety issues for the EU authorities. It also introduces the possibility for regulators to require pharmaceutical companies to conduct post-authorization efficacy studies at the time of approval, or at any time afterwards in light of scientific developments. There are also additional requirements regarding adverse drug reaction reporting and additional monitoring of products. Outside developed markets such as the EU and Japan, pharmacovigilance requirements vary and are typically less extensive.

The United Kingdom, or UK, is currently a member state of the EU. However, the UK has signaled its intention to withdraw from the EU, which is commonly known as BREXIT. Following BREXIT, if it occurs, the UK would no longer be a member state within the EU. Since a significant portion of the regulatory framework in the UK is derived from the regulations of the EU, BREXIT could materially change the regulatory framework applicable to the approval of Achieve's product candidates and other aspects of Achieve's business in the UK, such as the pricing and importation of prescription products. However, at this time it is not known what new regulatory framework will be in place to govern the review and approval of new medicines in the UK. Further, the EMA is currently located in the UK. It is possible that BREXIT will result in a relocation of the EMA or disruption to the EMA's review process.

Health authorities in many middle and lower income countries require marketing approval by a recognized regulatory authority (i.e., similar to the authority of the FDA or the EMA) before they begin to conduct their application review process and/or issue their final approval. Many authorities also require local clinical data in the country's population in order to receive final marketing approval. These requirements delay marketing authorization in those countries relative to the United States and Europe.

Achieve's License and Supply Agreements

Sopharma License and Supply Agreements

In 2009, Achieve, through one of its subsidiaries, entered into a license agreement, or the Sopharma License Agreement, and a supply agreement, or the Sopharma Supply Agreement, with Sopharma. Pursuant to the Sopharma License Agreement, Achieve was granted access to all available manufacturing, efficacy and safety data related to cytisine, including a granted patent in several European countries including Germany, France and Italy related to new oral dosage forms of cytisine providing enhanced stability. This patent is scheduled to expire on February 2, 2025. Additional rights granted under the Sopharma License Agreement include the exclusive use of, and the right to sublicense, the trademark Tabex in all territories—other than those mainly in Eastern Europe and parts of North Africa, where Sopharma or its affiliates and agents already market Tabex—in connection with the marketing, distribution and sale of products. Under the Sopharma License Agreement, Achieve agreed to pay a nonrefundable license fee. In addition, Achieve agreed to make certain royalty payments equal to a mid-teens percentage of all net sales of Tabex branded products in the Achieve territory during the term of the Sopharma License Agreement, including those sold by a third party pursuant to any sublicense which may be granted by Achieve. Achieve has agreed to cooperate with Sopharma in the defense against any actual or threatened infringement claims with respect to Tabex. Sopharma has the right to terminate the Sopharma License

Agreement upon the termination or expiration of the Sopharma Supply Agreement. The Sopharma License Agreement will also terminate under customary termination provisions including Achieve's bankruptcy or insolvency and material breach. To date, Achieve, through a subsidiary, has paid Sopharma $10.00 pursuant to the Sopharma License Agreement.

A cross-license exists between Achieve and Sopharma whereby Achieve grants to Sopharma rights to any patents or patent applications or other intellectual property rights filed by Achieve in Sopharma territories.

On May 15, 2015, Achieve and Sopharma entered into an amendment to the Sopharma License Agreement. Among other things, the amendment to the Sopharma License Agreement reduced the royalty payments payable by Achieve to Sopharma from a percentage in the mid-teens to a percentage in the mid-single digits and extended the term of the Sopharma License Agreement until May 26, 2029.

Pursuant to the amended and restated Sopharma Supply Agreement as expected to be in effect upon the completion of the merger, Achieve will exclusively purchase all of its cytisine from Sopharma and Sopharma will agree to supply cytisine exclusively to Achieve in all territories except for mainly those in Eastern Europe and part of North Africa. In addition, Achieve will have full access to the cytisine supply chain and Sopharma will manufacture sufficient cytisine to meet a forecast for a specified demand of cytisine for a specified period of time, each to be mutually agreed upon by the parties. Each of Achieve and Sopharma may terminate the Sopharma Supply Agreement in the event of the other party's material breach or bankruptcy or insolvency.

University of Bristol License Agreement

In July 2016, Achieve entered into a license agreement with the University of Bristol, or the University of Bristol License Agreement. Under the University of Bristol License Agreement, Achieve received exclusive and nonexclusive licenses from the University of Bristol to certain patent and technology rights resulting from research activities into cytisine and its derivatives, including a number of patent applications related to novel approaches to cytisine binding at the nicotine receptor level. Any patents issued in connection with these applications would be scheduled to expire on either February 5, 2036 or August 19, 2036.

In consideration of rights granted by the University of Bristol, Achieve agreed to pay amounts of up to $3.2 million, in the aggregate, tied to a financing milestone and to specific clinical development and commercialization milestones resulting from activities covered by the University of Bristol License Agreement. Additionally, if Achieve successfully commercializes any product candidate subject to the University of Bristol License Agreement, Achieve is responsible for royalty payments in the low-single digits and payments up to a percentage in the mid-teens of any sublicense income, subject to specified exceptions, based upon net sales of such licensed products.

Unless otherwise terminated, the University of Bristol License Agreement will continue until the earlier of July 2036 or the expiration of the last patent claim subject to the University of Bristol License Agreement. Achieve may terminate the University of Bristol License Agreement for convenience upon a specified number of days' prior notice to the University of Bristol. The University of Bristol License Agreement will terminate under customary termination provisions including Achieve's bankruptcy or insolvency or its material breach of the agreement. Under the terms of the University of Bristol License Agreement, Achieve has provided 100 grams of cytisine to the University of Bristol as an initial contribution. To date, Achieve has not paid any further sums to the University of Bristol pursuant to the University of Bristol License Agreement.

Employees

As of December 31, 2016, Achieve employed two full-time employees and none of its subsidiaries employed any employees. Achieve has never had a work stoppage, and none of its employees is represented by a labor organization or under any collective bargaining arrangements.

Legal Proceedings

Achieve is not currently a party to any legal proceedings.

Product Development and Manufacturing

Achieve does not own or operate manufacturing facilities for the production of cytisine, nor does it have plans to develop its own manufacturing operations in the foreseeable future. Achieve currently depends on Sopharma as supplier and contract manufacturer for all of its required raw materials, active pharmaceutical ingredients and finished product candidates for its clinical trials. Other than the Sopharma relationship, Achieve does not have any current contractual arrangements for the manufacture of clinical or commercial supplies of cytisine. Achieve currently employs internal resources and third-party consultants to manage Achieve's manufacturing activities.

Sopharma sources cytisine from the *Laburnum anagyroides* plant, a shrub or small tree native to, and widely distributed throughout, Bulgaria, south Central Europe and the northwestern Balkan Peninsula. The seed pods are harvested from the shrubs and dried. Sopharma currently has planted approximately 600,000 *Laburnum* trees, saplings and seedlings in multiple locations in Central and Eastern Bulgaria. Sopharma plans to plant additional trees to manage supply for major markets. Each tree takes approximately four to five years to reach maturity for harvesting and has a productive life expectancy of 20 to 25 years. Seeds are harvested annually, dried and stored for processing into cytisine. *Laburnum* seeds in their natural state are highly toxic and the extraction process removes the toxins to produce highly purified cytisine. Sopharma is stockpiling*Laburnum* seeds to meet the projected demand from Achieve upon commercial launch.

The active pharmaceutical ingredient, or API, manufacturing process utilizes a series of techniques including milling, solvent extraction, filtration and purification. Critical control steps and manufacturing intermediates have been identified and are controlled by internally developed specifications and methods to ensure a consistent and reproducible process. The highly purified cytisine is dried, sieved and packed for storage until further processing into drug product. The cytisine API manufacturing process has been developed and refined over many years of manufacture by Sopharma, which has significant expertise in manufacturing cytisine.

Sopharma manufactures cytisine API in its facilities in Bulgaria, which are near the capital, Sofia. The API processing facility complies with EU cGMP requirements and has been inspected by the Bulgarian Drug Agency. The facilities have not yet been inspected by FDA and are not currently approved by the FDA under its own cGMP requirements.

Sopharma performs the final tableting and packaging process at a recently constructed and opened tableting facility in Sofia. The Sofia tableting facility produces pharmaceutical products for Sopharma and acts as a contract manufacturer for other pharmaceutical companies. Sopharma's tableting facilities currently comply with EU cGMP requirements and have been inspected by the Bulgarian Drug Agency; however, the tableting facility has not yet been inspected by the FDA.

Sales and Marketing

Achieve's commercial strategy may include the use of strategic partners, distributors, a contract sale force or the establishment of its own commercial and specialty sales force. Achieve plans to further evaluate these alternatives. Achieve intends to seek partners in territories where it has no commercial experience and intends to directly market in niche markets where a small cost-effective commercial capability can generate direct revenues.

Intellectual Property

In a recent case, *Assoc. for Molecular Pathology v. Myriad Genetics, Inc*., the U.S. Supreme Court held that certain claims to naturally-occurring substances are not patentable. Cytisine is a naturally-occurring product and is therefore not patentable in the United States.

Achieve's development and commercialization of cytisine is protected by its exclusive supply agreement with Sopharma and Sopharma's proprietary technology, experience and expertise in cytisine extraction. Market exclusivity under the Hatch-Waxman Act in the United States and exclusivity under Directive 2004/27/EC of up to 11 years in the EU may also be available for cytisine.

Additionally, Achieve is actively building an intellectual property portfolio around its clinical-stage product candidate and research programs. A key component of this portfolio strategy is to seek international patent protection with patent applications in the UK and in major market countries that Achieve considers important to the development of its business worldwide. As of December 31, 2016, Achieve Pharma UK Limited has a portfolio of six patent applications all of which are pending applications in the UK. This portfolio includes method of use, formulation and composition of matter patents and other patent applications, on cytisine.

Further international patent submissions will be made, including in the United States, all of which will take patent filing priority dates from the UK submissions. Achieve's success depends in part on Achieve's ability to obtain and maintain proprietary protection for Achieve's product candidates and other discoveries, inventions, trade secrets and know-how that are critical to Achieve's business operations. Achieve's success also depends in part on Achieve's ability to operate without infringing the proprietary rights of others, and in part, on Achieve's ability to prevent others from infringing Achieve's proprietary rights. A comprehensive discussion on risks relating to intellectual property is provided under "*Risk Factors—Risks Related to Achieve's Intellectual Property.*"

In addition to patent protection, Achieve seeks to rely on trade secret protection, trademark protection and know-how to expand its proprietary position around its chemistry, technology and other discoveries and inventions that Achieve consider important to Achieve's business. Achieve also seeks to protect Achieve's intellectual property in part by entering into confidentiality agreements with Achieve's employees, consultants, scientific advisors, clinical investigators and other contractors and also by requiring Achieve's employees, commercial contractors and certain consultants and investigators, to enter into invention assignment agreements that grant it ownership of any discoveries or inventions made by them. Further, Achieve seeks trademark protection in the United States and internationally where available and when Achieve deems appropriate.

ONCOGENEX MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

OncoGenex is a biopharmaceutical company that has been focused on the development of novel next generation cancer therapeutics. Its mission is to accelerate transformative therapies to improve the lives of people living with cancer and other serious diseases. OncoGenex's product candidate apatorsen has a distinct mechanism of action and represents a unique opportunity for cancer drug development that it believes has the potential to improve treatment outcomes in a variety of cancers. Apatorsen is designed to block the production of heat shock protein 27, or Hsp27, a protein that promotes treatment resistance in cancer. In some clinical trials evaluating apatorsen, high serum Hsp27 levels appear to be a strong prognostic indicator for shorter survival outcomes. OncoGenex currently does not intend to conduct additional pre-clinical or clinical studies with apatorsen and is seeking a collaboration partnership to fund and further develop this product candidate.

As a result of custirsen not meeting the primary endpoint of improving overall survival in three completed phase 3 trials, OncoGenex has discontinued further development of custirsen and has begun to wind down all clinical trials and other activities related to this product candidate. In November 2016, OncoGenex provided a notice of discontinuance to Ionis Pharmaceuticals, Inc. (formerly Isis Pharmaceuticals, Inc.), or Ionis, and a letter of termination to the University of British Columbia, or UBC, notifying those parties that it has discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. In January 2017, OncoGenex also discontinued further development of its pre-clinical product candidate, OGX-225. OncoGenex provided a notice of discontinuance to Ionis, informing them that it has discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. OncoGenex intends to also terminate the UBC license agreement related to OGX-225, provided that Ionis does not exercise its reversion rights within 90 days of the notice of discontinuance. If Ionis exercises its reversion rights related to OGX-225, OncoGenex believes Ionis will assume the rights and obligations under the UBC license agreement.

In February 2016, OncoGenex committed to a plan to reduce operating expenses, which included a workforce reduction of 11 employees, representing approximately 27% of its employees prior to the reduction. OncoGenex incurred approximately $0.4 million in expenses as a result of the workforce reduction, substantially all of which were severance costs.

In October and November 2016, OncoGenex committed to a restructuring of a portion of its workforce in order to preserve its resources as it determined future strategic plans. As part of these restructurings, OncoGenex eliminated 19 positions, representing approximately 68% of its workforce. OncoGenex expects the restructurings to be substantially complete in the first quarter of 2017. As of December 31, 2016, it incurred approximately $1.8 million in restructuring costs, substantially all of which related to severance costs, and an asset impairment charge of $0.2 million for manufacturing equipment.

On January 5, 2017, OncoGenex and Achieve Life Science, Inc., or Achieve, a privately held specialty pharmaceutical company, entered into an Agreement and Plan of Merger and Reorganization, or the Merger Agreement, under which OncoGenex will acquire Achieve in an all-stock transaction. Upon completion of the Merger Agreement, Achieve's stockholders are expected to own approximately 75% of the combined company's outstanding shares and OncoGenex's current equityholders are expected to own the remaining approximately 25% of the combined company's outstanding shares. Following completion of the merger, OncoGenex Pharmaceuticals, Inc. will be renamed Achieve Life Sciences, Inc.

Pending Merger Agreement with Achieve

On January 5, 2017, OncoGenex and Achieve entered into the Merger Agreement, pursuant to which Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex will merge with and

into Achieve, or the First Merger, with Achieve becoming a wholly owned subsidiary of OncoGenex and the surviving company of the First Merger, or the Initial Surviving Corporation. Promptly following the First Merger, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc., or Merger Sub 2, a Delaware corporation and a wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity as a direct wholly owned subsidiary of OncoGenex. The two mergers taken together, are intended to qualify as a "reorganization" within the meaning of Section 368(a)(2)(D) of the Internal Revenue Code of 1986, as amended. The surviving company is expected to be renamed Achieve Life Sciences, Inc. and is referred to herein as the "combined company." The Merger is expected to close in mid-2017.

Subject to the terms and conditions of the Merger Agreement, at the closing of the First Merger, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of OncoGenex common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's fully-diluted capitalization, as well as the payment of cash in lieu of fractional shares. Immediately following the effective time of the merger, OncoGenex's equityholders are expected to own approximately 25% of the outstanding capital stock of the combined company on a fully diluted basis, and the Achieve stockholders are expected to own approximately 75% of the outstanding capital stock of the combined company on a fully diluted basis.

Consummation of the merger is subject to certain closing conditions, including, among other things, approval by the stockholders of OncoGenex and Achieve. The Merger Agreement contains certain termination rights for both OncoGenex and Achieve, and further provides that, upon termination of the Merger Agreement under specified circumstances, either party may be required to pay the other party a termination fee of $0.5 million. In addition, the Merger Agreement provides that if either party breaches certain covenants regarding alternative transactions to those contemplated by the Merger Agreement, the breaching party may be required to pay the other party a termination fee of $1.0 million. In connection with certain terminations of the Merger Agreement, either party may be required to pay the other party's third party expenses up to $0.5 million.

At the effective time of the First Merger, the Board of Directors of OncoGenex is expected to consist of seven members, three of whom will be designated by OncoGenex and four of whom will be designated by Achieve. OncoGenex is expected to designate Scott Cormack, Stewart Parker and Martin Mattingly. Achieve is expected to designate Richard Stewart, Anthony Clarke and two other independent directors that have yet to be determined. Additionally, at the effective time of the First Merger, Richard Stewart, the current Chairman of Achieve, is expected to be the Chairman and Chief Executive Officer of the combined company; Anthony Clarke, the current Chief Scientific Officer of Achieve, is expected to be the Chief Scientific Officer of the combined company; and John Bencich, OncoGenex's Chief Financial Officer and Cindy Jacobs, OncoGenex's Chief Medical Officer, are expected to continue to serve the combined company in their respective roles.

In accordance with the terms of the Merger Agreement, (i) certain of the officers and directors of OncoGenex, who collectively hold approximately 1.2 percent of the outstanding shares of its capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with Achieve, or the OncoGenex Support Agreements, and (ii) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with OncoGenex, or the Achieve Support Agreements, and together with the OncoGenex Support Agreements, the Support Agreements. The Support Agreements include covenants as to the voting of such shares in favor of approving the transactions contemplated by the Merger Agreement and against actions that could adversely affect the consummation of the Merger.

The Support Agreements will terminate upon the earlier of the consummation of the First Merger or the termination of the Merger Agreement by its terms.

Concurrently and in connection with the execution of the Merger Agreement, (i) certain of the officers and directors of OncoGenex, who collectively hold approximately 1.2 percent of the outstanding shares of its capital

stock as of the close of business on January 4, 2017 and (ii) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into lock-up agreements with OncoGenex, pursuant to which, subject to certain exceptions, each stockholder will be subject to a 180-day, or the Lock-Up Period, lock-up on the sale of shares of OncoGenex capital stock, which Lock-Up Period shall begin upon the consummation of the First Merger.

OncoGenex expects to issue contingent value rights, or each, a CVR and collectively, the CVRs, to its existing stockholders prior to the completion of the First Merger. One CVR will be issued for each share of its common stock outstanding as of the record date for such issuance. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the First Merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to OncoGenex's product candidate apatorsen, or the Milestones, upon the terms and subject to the conditions set forth in a contingent value rights agreement to be entered into between OncoGenex, Achieve and an as of yet unidentified third party, as rights agent, or the CVR Agreement. The aggregate consideration to be distributed to the holders of the CVRs, if any, will be equal to 80% of the consideration received by the combined company as a result of the achievement of the Milestones less certain agreed to offsets, as determined pursuant to the CVR Agreement. Under the CVR Agreement, for a period of six months beginning February 17, 2017, OncoGenex will use certain defined efforts to enter into an agreement with a third party regarding the development and/or commercialization of apatorsen. At the expiration of this six-month period, if a third party has not entered into a term sheet for the development or commercialization of apatorsen, the combined company will no longer be contractually required to pursue an agreement regarding apatorsen and no consideration will be payable to the holders of CVRs.

OncoGenex is currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen, but has not yet identified such a party or set any Milestones. OncoGenex cannot give any assurance that it will be able to identify and enter into an agreement with a third party to develop and potentially commercialize apatorsen by August 17, 2017, or if it does, that any Milestones will be set or any consideration will ever be received by the combined company or distributed to the CVR holders. Therefore, OncoGenex stockholders will not be able to determine the value of the CVRs, if any, prior to the special meeting of OncoGenex stockholders since the value of the CVRs is contingent upon the occurrence of future events that are not yet known.

OncoGenex also entered into a letter agreement with Achieve, whereby it would pay, on behalf of Achieve, for transactions costs associated with the merger. In the event that the Merger Agreement is terminated and as a result of such termination OncoGenex is required to pay to Achieve one or more termination fees, the total amount of termination fees it would owe is reduced by the amount of the transaction costs it would have paid on behalf of Achieve.

Product Candidate Apatorsen

Apatorsen is OncoGenex's product candidate that is designed to inhibit production of Hsp27, a cell-survival protein expressed in many types of cancers including bladder, prostate, breast, pancreatic and non-small cell lung cancer. Hsp27 expression is stress-induced, including by many anti-cancer therapies. Overexpression of Hsp27 is thought to be an important factor leading to the development of treatment resistance and is associated with metastasis and negative clinical outcomes in patients with various tumor types. In some clinical trials evaluating apatorsen, high serum Hsp27 levels at baseline, or at the start of treatment, appear to be a strong prognostic indicator for shorter survival outcomes.

Apatorsen utilizes second-generation antisense drug chemistry and belongs to the drug class known as antisense therapeutics. OncoGenex has collaborated with Ionis and selectively licensed technology from Ionis to combine Ionis' second-generation antisense chemistry with OncoGenex's proprietary gene target sequences to create an

inhibitor that is designed to down-regulate Hsp27. In contrast to first-generation antisense chemistry, second-generation antisense chemistry has improved target binding affinity, increased resistance to degradation and improved tissue distribution. These improvements result in slower clearance of the therapies from the body, which allow for less frequent dosing and thereby make treatment easier on patients at a lower associated cost.

A number of preclinical studies have shown that reducing Hsp27 production induces tumor cell death in prostate, non-small cell lung, bladder and pancreatic cancer cells. The studies also suggest that reducing Hsp27 production sensitizes prostate tumor cells to hormone ablation therapy. These preclinical studies have also shown that inhibiting the production of Hsp27 in human prostate, bladder, lung, breast, ovarian and pancreatic tumor cells sensitizes the cells to chemotherapy.

Hsp27 has been reported by others to function as an immunomodulatory protein by a number of mechanisms that include altering important membrane-expressed proteins on monocytes and immature dendritic cells; this alteration results in tumor-associated immune cells that are not functional in identifying and killing cancer cells. The induction of anti-inflammatory cytokines by Hsp27 may also play a role in down-regulating lymphocyte activation leading to additional unresponsive immune cells.

In 2013, OncoGenex initiated the ORCA (Ongoing Studies Evaluating Treatment Resistance in CAncer) program which encompasses six phase 2 clinical studies designed to evaluate whether treatment with apatorsen can lead to improved prognosis and treatment outcomes for cancer patients. Five of these trials have been completed and the remaining ongoing trial completed enrollment in 2016 with results expected in 2018. OncoGenex currently does not intend to conduct additional pre-clinical or clinical studies with apatorsen and is seeking a collaboration partnership to fund and further develop this product candidate.

Six phase 2 apatorsen clinical trials have been initiated or completed under the ORCA program.

Ongoing Trial

- The Spruce-2™ Trial (formerly referred to as the Cedar Trial): The completed investigator-sponsored, randomized phase 2 trial evaluating apatorsen plus gemcitabine and carboplatin therapy or gemcitabine and carboplatin therapy alone in patients with previously untreated advanced squamous non-small cell lung cancer, or NSCLC. Patients also continue weekly apatorsen infusions as maintenance treatment after chemotherapy until disease progression. The aim of the trial is to determine if adding apatorsen to gemcitabine and carboplatin therapy can extend progression free survival, or PFS, outcome. Additional analyses will include tumor response rates, overall survival, safety, and health-related quality of life, as well as to determine the effect of Hsp27 levels on clinical outcomes, explore potential biomarkers that may help predict response to treatment and survival outcomes in patients who were at increased risk for poor outcomes. The trial was initiated in July 2014 and completed enrollment in December 2016. During the conduct of the trial, two amendments were submitted: one that reduced the apatorsen dose to 400mg and the second that reduced patient enrollment to ~90 patients. The trial completed patient enrollment in December 2016 and results are expected in the second half of 2017. The trial is an investigator-sponsored trial being conducted and funded primarily by the UK National Cancer Research Network and the UK Experimental Cancer Medicine Network.

Completed Trials

- The Borealis-2™ Trial: The completed investigator-sponsored, randomized phase 2 trial evaluated apatorsen in combination with docetaxel treatment compared to docetaxel treatment alone in patients with advanced or metastatic bladder cancer who have disease progression following first-line platinum-based chemotherapy. The primary endpoint analysis was a superiority test for overall survival, performed at a one-sided 0.10 significance level using a stratified log-rank test. Secondary endpoints included PFS, disease response and safety assessments. The trial met its primary endpoint of improving survival at the one-sided 0.10 significance level. Patients who received apatorsen treatment

experienced a 20% reduction in risk of death, compared to patients receiving docetaxel alone (overall survival hazard ratio (HR)=0.80; 80% CI: 0.65-0.98; p=0.078). In February 2017, results were presented at the American Society of Clinical Oncology, or ASCO, 2017 Genitourinary Cancers Symposium. Apatorsen was well tolerated in combination with docetaxel. The reduction in risk of progression or death was 20% for patients receiving apatorsen in combination with docetaxel, compared to docetaxel alone (PFS HR= 0.80; 80% CI: 0.64-1.01; p=0.107). Partial or complete responses occurred in 16.2% patients receiving apatorsen plus docetaxel compared to 10.9% patients receiving docetaxel alone with median response durations of 6.2 months versus 4.4 months, respectively. Overall for the study, higher baseline serum Hsp27 levels were significantly prognostic for indicating an almost 2-fold higher risk of death (HR= 1.96; p=0.0001). In an exploratory analysis on a subset of patients (20% of total) who completed at least 2 treatment cycles and had either a decrease in serum Hsp27 levels from baseline or had only a 20.5% increase in serum Hsp27 levels from baseline, the reduction in risk of death with apatorsen treatment was 71% (HR= 0.29: 80% CI: 0.18-0.48; interaction p=0.0727). The trial was conducted by the Hoosier Cancer Research Network at 28 sites across the United States.

- The Borealis-1™ Trial: OncoGenex's completed company-sponsored Borealis-1™ phase 2 trial was a three-arm, randomized, placebo-controlled trial evaluating 600mg or 1000mg apatorsen in combination with a first-line standard of care chemotherapy regimen (gemcitabine and cisplatin) in the metastatic setting. Overall, trial results indicated that the addition of 600mg apatorsen to standard of care chemotherapy showed a 14% reduction in risk of death (HR = 0.86; 95% CI: 0.54-1.36; p=0.252) when compared to chemotherapy alone. Subsequent exploratory analyses showed a trend for improved survival in patients with baseline poor prognostic features treated with 600 mg apatorsen compared to placebo (HR=0.72; 95% CI: 0.35–1.45). In general for the study, higher baseline serum Hsp27 levels were significantly prognostic for indicating a 2-fold higher risk of death (HR= 1.72; p=0.007). Further exploratory analysis of serum Hsp27 levels showed a trend towards survival benefit for the poor-prognosis patients in apatorsen 600 mg and 1000 mg arms who achieved lower overall (area-under-the-curve) serum Hsp27 levels during study treatment, compared to similar patients in the placebo arm (HR=0.45 and 0.62, respectively). Less benefit was believed to be observed in the 1000mg apatorsen arm due to increased adverse events leading to a higher rate of discontinuation of both apatorsen and chemotherapy. Apatorsen 600mg was well tolerated in combination with gemcitabine/cisplatin chemotherapy. These data were presented at the 2015 ASCO Annual Meeting.
- The Spruce™ Trial: The investigator-sponsored, randomized, placebo-controlled phase 2 trial evaluating apatorsen plus carboplatin and pemetrexed therapy compared to carboplatin and pemetrexed therapy in patients with previously untreated advanced non-squamous NSCLC. Patients continued pemetrexed with weekly apatorsen or placebo infusions as maintenance treatment until disease progression if they completed a minimum of 3 cycles of chemotherapy treatment. The aim of the trial is to determine if adding apatorsen to carboplatin and pemetrexed therapy could extend PFS outcome. In January 2016, the primary endpoint data for PFS was reported to have not reached the statistical significance required to demonstrate a benefit (PFS HR= 0.90; 80% CI 0.71-1.14; p=0.557). In the study, higher baseline serum Hsp27 levels were found to be significantly prognostic for indicating an almost 2-fold higher risk of death (HR= 1.98; p=0.0034). A potential benefit was observed in a subgroup of patients with high baseline serum Hsp27 status (~10% of total) when treated with apatorsen (PFS HR= 0.54; 80% CI: 0.193- 1.106). Study follow up with survival results was completed at the end of 2016. The addition of apatorsen to carboplatin and pemetrexed therapy did not demonstrate an overall survival benefit in the study (HR= 1.067; 80% CI: 0.838-1.359). PFS results were presented at ASCO 2016. The study investigators concluded that apatorsen and pemetrexed/carboplatin therapy was well tolerated and showed promising PFS results in the treatment of patients with non-squamous NSCLC who have Hsp27 high status and thus warranted further study in this population. OncoGenex does not intend to pursue additional trials in non-squamous NSCLC at this time. The study was an investigator-sponsored trial conducted by sites under the Sarah Cannon Research Institute.

- The Rainier™ Trial: OncoGenex's completed investigator-sponsored Rainier™ phase 2 trial was a randomized, placebo-controlled trial evaluating apatorsen in combination with ABRAXANE® (paclitaxel protein-bound particles for injectable suspension) (albumin-bound) and gemcitabine compared to ABRAXANE and gemcitabine alone in patients with untreated metastatic pancreatic cancer. The addition of apatorsen to ABRAXANE and gemcitabine did not show improved survival for patients receiving apatorsen plus ABRAXANE and gemcitabine when compared to ABRAXANE and gemcitabine alone (HR= 1.098; 95% CI 0.759-1.590). Similarly there was no improvement in PFS (PFS HR=1.020; 95% CI 0.806-1.290). The study did show that higher baseline serum Hsp27 levels were significantly prognostic for indicating a 1.8-fold higher risk of death (HR= 1.84; p=0.0041). A potential benefit was observed in a subgroup of patients with high baseline serum Hsp27 status (14% of total) when treated with apatorsen (PFS HR= 0.381; 95% CI 0.120-1.208 and survival HR= 0.587; 95% CI 0.195-1.770). The study was presented at the Gastrointestinal, or GI, Cancers Symposium meeting in January 2016. The study investigators concluded that these promising results in pancreatic cancer patients with high baseline Hsp27 status warrant further study of apatorsen in this population. OncoGenex does not intend to pursue additional trials in pancreatic cancer at this time. The study was an investigator-sponsored trial conducted by sites under the Sarah Cannon Research Institute.
- The Pacific™ Trial: The investigator-sponsored, randomized phase 2 trial evaluating apatorsen in men with CRPC who are experiencing a rising PSA while receiving Zytiga® (abiraterone acetate). The aim of the trial is to determine if adding apatorsen to Zytiga treatment can reverse or delay treatment resistance by evaluating the PFS rate at a milestone Day 60 assessment. The primary endpoint was the proportion of patients who were progression free (clinical and radiologic) at study day 60. Other secondary endpoints were PSA and objective responses, time to disease progression, circulating tumor cells, or CTCs, and Hsp27 levels. The Pacific trial was an investigator-sponsored trial conducted by the Hoosier Cancer Research Network at sites in Canada and the United State. In February 2017, results were presented at the ASCO 2017 Genitourinary Cancers Symposium. Apatorsen was well tolerated in combination with Zytiga with the median treatment duration of 106 days for apatorsen plus Zytiga compared to 75 days for continuing Zytiga alone. The proportion of patients who were progression free at Day 60 was 33% when apatorsen was added to Zytiga, compared to 17% with Zytiga alone (p=0.17). The median time of PFS was 8.6 weeks for apatorsen treatment, compared to 7.9 weeks for Zytiga. A 50% or greater decline in PSA levels was seen in 6% of patients when apatorsen was added to Zytiga compared to 3% with continuing Zytiga alone. Stable disease or partial response was seen in 20% of patients when apatorsen was added to Zytiga vs 17% with Zytiga alone. For patients with $^{3}5$ CTCs at baseline, 25% vs 13% of patients had a CTC reduction to less than 5 CTCs when apatorsen was added to Zytiga vs Zytiga alone, respectively.

Product Candidate Custirsen

In November 2016, OncoGenex provided a notice of discontinuance to Ionis notifying them that it has discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. OncoGenex believes that all financial obligations, other than continuing mutual indemnification obligations and its requirement to pay for out-of-pocket patent expenses incurred up to the date of termination and for abandoning the custirsen patents and patent applications, under all agreements with Ionis, including the Ionis settlement agreement, are no longer owed and no further payments are due.

Product Candidate OGX-225

In January 2017, OncoGenex discontinued further development of OGX-225. It provided a notice of discontinuance to Ionis, notifying them that OncoGenex has discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. OncoGenex intends to also terminate the UBC license agreement related to OGX-225 provided that Ionis does not exercise its reversion rights within 90 days of the notice of discontinuance. If Ionis exercises its reversion rights related to OGX-225, OncoGenex believes Ionis will assume the rights and obligations under the UBC license agreement.

Collaboration Revenue

Revenue recognized to date was attributable to the upfront payment OncoGenex received in the fourth quarter of 2009 pursuant to a Collaboration Agreement with Teva, as well as cash reimbursements from Teva for certain costs incurred by it under the clinical development plan. OncoGenex's policy is to account for these reimbursements as collaboration revenue.

In April 2015, OncoGenex and Teva entered into an agreement to terminate the Collaboration Agreement, or the Termination Agreement. Pursuant to the Termination Agreement, Teva paid to it, as advanced reimbursement for certain continuing research and development activities related to custirsen and certain other antisense inhibitors of clusterin, an amount equal to $27.0 million, less approximately $3.8 million that Teva paid for custirsen development on OncoGenex's behalf. OncoGenex does not expect to receive any additional amounts from Teva. Teva is responsible for expenses related to custirsen incurred pursuant to the Collaboration Agreement through December 31, 2014. OncoGenex is responsible for certain custirsen-related expenses from and after January 1, 2015.

As a result of the termination of the Collaboration Agreement with Teva, OncoGenex does not expect to earn any additional collaboration revenue beyond the amounts provided as advanced reimbursement for custirsen-related development expenses as set forth in the Termination Agreement. The advanced reimbursement payment made by Teva, as part of the Termination Agreement, was deferred and was recognized as collaboration revenue on a dollar for dollar basis as costs were incurred as part the of continuing research and development activities related to custirsen and certain other antisense inhibitors of clusterin. OncoGenex has fully utilized the $23.2 million in advance reimbursement for custirsen-related development costs between January 1, 2015 and June 30, 2016.

Research and Development Expenses

Research and development, or R&D, expenses consist primarily of costs for clinical trials, contract manufacturing, personnel costs, milestone payments to third parties, facilities, regulatory activities, preclinical studies and allocations of other R&D-related costs. External expenses for clinical trials include fees paid to clinical research organizations, clinical trial site costs and patient treatment costs.

Currently, OncoGenex manages its clinical trials through contract research organizations and independent medical investigators at their sites and at hospitals and expects this practice to continue. Due to the number of projects and its ability to utilize resources across several projects, OncoGenex does not record or maintain information regarding the indirect operating costs incurred for its research and development programs on a program-specific basis. In addition, OncoGenex believes that allocating costs on the basis of time incurred by its employees does not accurately reflect the actual costs of a project.

Several of its clinical trials have been supported by grant funding that was received directly by the hospitals and/or clinical investigators conducting the clinical trials as investigator-sponsored trials, thereby allowing OncoGenex to complete these clinical trials at a lower cost to it.

In accordance with the Termination Agreement, Teva was required to and did fund all additional expenses under the clinical development plan through December 31, 2014, after which date OncoGenex took over responsibility for future custirsen-related costs following termination of its Collaboration Agreement. OncoGenex does not owe Teva any development milestone payments or royalty payments on sales of custirsen, if any.

OncoGenex cannot estimate completion dates for development activities or when it might receive material net cash inflows from its R&D projects, if ever.

OncoGenex's projects or intended R&D activities may be subject to change from time to time as it evaluates results from completed studies, its R&D priorities and available resources.

General and Administrative Expenses

General and administrative, or G&A, expenses consist primarily of salaries and related costs for OncoGenex personnel in executive, finance and accounting, corporate communications, human resources and other

administrative functions, as well as consulting costs, including market research, business consulting and intellectual property. Other costs include professional fees for legal and auditing services, insurance and facility costs.

Warrant liability

The following is a summary of outstanding warrants to purchase common stock that are classified as liabilities at December 31, 2016:

	Total Outstanding and Exercisable	Exercise price per Share	Expiration Date
Series A Warrants issued in July 2014 financing	2,779,933	4.00	July 2019
Series B Warrants issued in July 2014 financing	670,269	4.00	July 2019

No warrants classified as liabilities were exercised during the years ended December 31, 2016 or 2015.

OncoGenex reassesses the fair value of the common stock warrants classified as liabilities at each reporting date utilizing a Black-Scholes pricing model. Inputs used in the pricing model include estimates of stock price volatility, expected warrant life and risk-free interest rate. The computation of expected volatility was based on the historical volatility of shares of OncoGenex common stock for a period that coincides with the expected life of the warrants.

Results of Operations

Years Ended December 31, 2016, 2015 and 2014

Revenue

Revenue for the years ended December 31, 2016, 2015 and 2014 were $5.1 million, $18.2 million and $27.1 million, respectively. The advanced reimbursement payment made by Teva, as part of the Termination Agreement, was deferred and recognized as collaboration revenue on a dollar for dollar basis as costs were incurred as part of the continuing research and development activities related to custirsen. The decrease in collaboration revenue in 2016 as compared to 2015 was due to the full recognition of the remaining amounts of deferred revenue in 2016. The decrease in 2015 as compared to 2014 was due primarily to lower collaboration revenue recognized for the reimbursement of expenses for the phase 3 clinical trial in second-line chemotherapy in patients with metastatic CRPC, or the AFFINITY trial, as a result of patients coming off treatment. This was partially offset by higher trial costs in the phase 3 clinical trial in second-line chemotherapy in patients with NSCLC, or the ENSPIRIT trial, which OncoGenex became responsible for pursuant to the Termination Agreement with Teva. Revenue recognized in 2015 is attributable to the advance reimbursement received in the second quarter of 2015, pursuant to the Termination Agreement with Teva, for research and development costs incurred by OncoGenex related to the custirsen development program.

Research and Development Expenses

OncoGenex's research and development expenses for its clinical development programs were as follows (in thousands):

	Year ended December 31,		
	2016	2015	2014
Clinical development programs:			
Custirsen	$ 8,959	$15,544	$26,015
Apatorsen	$ 1,521	$ 2,798	$ 9,753
Other research and development	$ 4,308	$ 6,766	$10,456
Total research and development expenses	**$14,788**	**$25,108**	**$46,224**

Research and development expenses for the years ended December 31, 2016, 2015 and 2014 were $14.8 million, $25.1 million and $46.2 million, respectively. The decrease in 2016 as compared to 2015 was due to lower clinical trial costs for the AFFINITY trial, the ENSPIRIT trial and OncoGenex's investigator sponsored apatorsen trials, lower consulting and professional fees as a result of the restructuring in the first and fourth quarters of 2016 and a decrease in facilities costs. The decrease in 2015 as compared to 2014 was due primarily to lower clinical trial costs for Borealis-1 as a result of patients coming off treatment and fewer combination drug purchases for the AFFINITY trial in 2014.

General and Administrative Expenses

G&A expenses for the years ended December 31, 2016, 2015 and 2014 were $8.9 million, $11.8 million and $10.6 million, respectively. The decrease in 2016 as compared to 2015 was due to lower professional fees and headcount and consulting expenses as a result of the restructurings in the first and fourth quarters of 2016. The increase in 2015 as compared to 2014 was primarily due to higher consulting and legal fees. This was partially offset by lower rent and facilities operating costs and lower employee related costs.

Revaluation of Warrants

OncoGenex recorded gains on the revaluation of its outstanding warrants for the years ended December 31, 2016, 2015 and 2014 of $0.9 million, $1.9 million and $3.7 million, respectively, which is included on its consolidated statement of loss as a gain on warrants. OncoGenex revalues the warrants at each balance sheet date to fair value.

Restructuring recovery / (expense)

OncoGenex recorded a restructuring expense of $2.2 million for the year ended December 31, 2016 and a restructuring recovery of $0.3 million for the year ended December 31, 2014.

In February 2016, OncoGenex committed to a plan to reduce operating expenses, which included a workforce reduction of 11 employees, representing approximately 27% of its employees prior to the reduction. It incurred approximately $0.4 million in expenses as a result of the workforce reduction, substantially all of which were severance costs.

In October 2016, OncoGenex committed to a restructuring of a portion of its workforce in order to preserve its resources as it determines future strategic plans. As part of this restructuring, it eliminated 14 positions, representing approximately 48% of its workforce. It expects the restructuring to be substantially complete in the first quarter of 2017. As of December 31, 2016, it incurred approximately $1.1 million in restructuring costs, substantially all of which related to severance costs.

In November 2016, OncoGenex committed to a further reduction in its workforce. It eliminated five positions and incurred approximately $0.7 million in expenses as a result of the workforce reduction, substantially all of which were severance costs.

	Total estimated costs	Amounts settled to date	Accrued at December 31, 2016
Restructuring Costs	$ 2,206	$ (708)	$ 1,498

OncoGenex entered into a lease termination agreement with BMR-217TH Place LLC effective 2014 in relation to its previous Bothell facility. The termination of the lease resulted in a $3.5 million restructuring gain recorded in the fourth quarter of 2014, which was partially offset by a $3.2 million termination fee recognized in the same period.

Recovery of lease termination loss

OncoGenex recorded a recovery of lease termination loss of $1.3 million for the year ended December 31, 2016. In February 2015, it entered into a Lease Termination Agreement with BMR pursuant to which OncoGenex and BMR agreed to terminate its prior lease, effective March 1, 2015. Under the Lease Termination Agreement, OncoGenex paid BMR a $2.0 million termination fee and would have been required to pay an additional $1.3 million termination fee if it had (i) met the primary endpoint for its AFFINITY Trial and if it had (ii) closed a transaction or transactions pursuant to which it received funding in an aggregate amount of at least $20.0 million. As of December 31, 2014 and subsequent annual and interim reporting periods up to June 30, 2016, OncoGenex had assessed that the likelihood of meeting both contingent events was probable and as a result, recognized the $1.3 million in lease termination liability on its balance sheet as at the end of those reporting periods. In August 2016, final survival results of its AFFINITY trial did not meet the primary endpoint of a statistically significant improvement in overall survival in men with metastatic CRPC. As at September 30, 2016, OncoGenex re-assessed that the likelihood of meeting both contingent events is no longer possible due to not achieving the primary endpoint on its AFFINITY trial. As a result, OncoGenex has reversed the $1.3 million in lease termination liability on its balance sheet and recognized a recovery on its statement of loss.

Litigation settlement expense

In August 2016, OncoGenex and Ionis settled its lawsuit. Pursuant to the settlement, OncoGenex paid Ionis a $1.4 million upfront payment and was required to pay additional success-based payments up to an amount not exceeding $5.0 million. In accordance with the upfront payment, OncoGenex recorded litigation settlement expense of $1.4 million for the year ended December 31, 2016. In November 2016, it provided the Notice of Discontinuance to Ionis and it believes that all financial obligations, other than continuing mutual indemnification obligations, under all agreements with Ionis, including the settlement agreement, are no longer owed and no further payments are due.

Asset impairment charge

In the fourth quarter of 2016, OncoGenex concluded that it had a triggering event requiring assessment of impairment for certain of its long-lived assets in conjunction with its restructuring actions announced in October 2016. As a result, OncoGenex reviewed its long-lived assets for impairment and recorded a $0.2 million impairment charge, representing the entire amount of the then carrying value of the assets, on its statement of loss. The full amount of the impairment charge related to drug product manufacturing equipment.

Liquidity and Capital Resources

OncoGenex has incurred an accumulated deficit of $196.9 million through December 31, 2016, and it expects to incur substantial additional losses in the future. OncoGenex has not generated any revenue from product sales to date, and it may not generate product sales revenue in the near future, if ever.

OncoGenex's operations to date have been primarily funded through the sale of its equity securities and payments received from Teva. As of December 31, 2016, its cash, cash equivalents, and short-term investments decreased to $25.5 million as compared to $55.2 million as of December 31, 2015.

In April 2015, OncoGenex and Teva terminated its Collaboration Agreement. Pursuant to the Termination Agreement, Teva paid to OncoGenex, as advanced reimbursement for certain continuing research and development activities related to custirsen, an amount equal to $23.2 million. OncoGenex does not expect to receive any additional amounts from Teva. OncoGenex fully utilized the $23.2 million in advance reimbursement for custirsen-related development costs between January 1, 2015 and June 30, 2016. It does not owe Teva any development milestone payments or royalty payments on sales of custirsen, if any.

In April 2015, OncoGenex and Lincoln Park Capital Fund, LLC, or LPC, entered into a Purchase Agreement, pursuant to which it had the right to sell to LPC up to $18.0 million in shares of OncoGenex common stock,

subject to certain limitations and conditions set forth in the Purchase Agreement. LPC initially purchased 956,938 Series A-1 Units at a purchase price of $2.09 per unit, for aggregate gross proceeds of $2.0 million. Each Series A-1 Unit consisted of (i) one share of common stock and (ii) one warrant to purchase one-quarter of a share of common stock at an exercise price of $2.40 per share.

From April 30, 2015 through August 13, 2015, OncoGenex offered and sold 6,814,980 shares of its common stock pursuant to its Purchase Agreement with LPC. These sales resulted in gross proceeds to OncoGenex of approximately $18.0 million and offering expenses of $0.4 million. As of August 13, 2015, no further amounts remained available for sale under this offering program.

In February 2016, OncoGenex committed to a plan to reduce operating expenses, which included a workforce reduction of 11 employees, representing approximately 27% of its employees prior to the reduction. It incurred approximately $0.4 million in expenses as a result of the workforce reduction, substantially all of which were severance costs.

In October 2016, OncoGenex committed to a restructuring of a portion of its workforce in order to preserve its resources as it determines future strategic plans. As part of this restructuring, it eliminated 14 positions, representing approximately 48% of its workforce. OncoGenex expects the restructuring to be substantially complete in the first quarter of 2017. As of December 31, 2016, it incurred approximately $1.1 million in restructuring costs, substantially all of which related to severance costs and an asset impairment charge of $0.2 million related to manufacturing equipment.

In November 2016, OncoGenex committed to a further reduction in its workforce. It eliminated five positions and incurred approximately $0.7 million in expenses as a result of the workforce reduction, substantially all of which were severance costs. The workforce reduction was substantially completed in the fourth quarter of 2016.

Cash Flows

Operating Activities

For the years ended December 31, 2016, 2015 and 2014, net cash used in operating activities was $29.7 million, $9.1 million, and $17.3 million, respectively. The increase in cash used in operations in 2016 as compared to cash provided by operations in 2015 was primarily attributable to the advanced reimbursement payment made by Teva, as part of the Termination Agreement, which was received in the second quarter of 2015. The decrease in cash used in operations in 2015 as compared to cash used for operations in 2014 was primarily attributable to a cash payment from Teva as an advance reimbursement for custirsen development costs associated with the Termination Agreement in 2015.

Financing Activities

For the year ended December 31, 2016, net cash used by financing activities was $2,000, compared to net cash provided by financing activities of $17.6 million and $25.2 million for the years ended December 31, 2015 and 2014, respectively. Net cash used in financing activities for the year ended December 31, 2016 relates to taxes paid on the net share settlement of equity awards. Net cash provided by financing activities for the year ended December 31, 2015 relates to proceeds received from the financing through OncoGenex's purchase agreement with LPC. Net cash provided by financing activities for the year ended December 31, 2014 was the result of proceeds from the underwritten registered direct offering completed in July 2014, the sale of shares of common stock through its "at the market" equity offering program and the exercise of stock options.

Investing Activities

Net cash provided by investing activities for the year ended December 31, 2016 was $10.6 million, compared to net cash used in investing activities for the year ended December 31, 2015 of $2.1 million and net cash provided

by investing activities for the year ended December 31, 2014 of $5.4 million. Net cash used in and provided by investing activities in all years was due to transactions involving marketable securities in the normal course of business.

Operating Capital and Capital Expenditure Requirements

Based on its current expectations, OncoGenex believes that its cash, cash equivalents, and short-term investments will be sufficient to fund its currently planned operations for at least the next 12 months.

OncoGenex has based this estimate on assumptions that may prove to be wrong, or it could utilize its available capital resources sooner than it currently expects. If the timeline to complete the recently announced merger takes longer than anticipated or is not completed, OncoGenex changes its development plans or elect to further develop apatorsen, cannot find third-party collaborators to fund further development of apatorsen, its ongoing trial proceeds slower or takes longer than expected to complete, it acquires rights to new product candidates, does not successfully defend litigation or engage in commercialization and product launch activities, it will need additional capital sooner than it expects. If OncoGenex needs to extend its cash availability or to conduct any such currently unplanned development activities, it would seek such necessary funding through the licensing or sale of its product candidate, by executing a partnership or collaboration agreement, or through private or public offerings of its equity or debt. However, OncoGenex can provide no assurance that such funding would be available to it on favorable terms, or at all.

OncoGenex's future capital requirements will depend on many factors, including:

- the timing of completion of the pending merger with Achieve;
- whether it modifies its development program for apatorsen, including terminating and starting new trials;
- whether it is able to enter into additional third-party collaborative partnerships to develop and/or commercialize apatorsen on terms that are acceptable to it;
- the scope and results of its clinical trials and preclinical studies;
- its ability to forecast the cost of its ongoing development activities;
- whether it experiences delays in its development program of apatorsen, or experience slower-than-anticipated product development or rate of events;
- conducting studies required to obtain regulatory approvals for apatorsen from regulatory agencies;
- the availability of third parties to perform the key development tasks for apatorsen, including conducting preclinical studies and clinical trials and manufacturing apatorsen to be tested in those studies and trials and the associated costs of those services;
- the costs involved in preparing, filing, prosecuting, maintaining, defending the validity of and enforcing patent claims and other costs related to patent rights and other intellectual property rights, including litigation costs and the results of such litigation;
- whether opportunities to acquire additional product candidates arise and the costs of acquiring and developing those product candidates;
- the costs to defend, and the results of, litigation; and
- whether it engages in commercialization and product launch activities.

Contractual Obligations

The following table summarizes OncoGenex's contractual obligations as of December 31, 2016 (in thousands):

	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Bothell office operating lease(1)	$376	$ 281	$ 95	$ —	$ —
Vancouver office operating lease(2)	$ 68	$ 68	$ —	$ —	$ —
UBC license maintenance fees(3)	$ 26	$ 4	$ 9	$ 9	$ 4
Leased equipment	$ 22	$ 19	$ 3	$ —	$ —
Total	$492	$ 372	$ 107	$ 9	$ 4

(1) This operating lease is effective May 1, 2015 and expires on April 30, 2018.
(2) This operating lease expires in 2017.
(3) OncoGenex is obligated to pay an annual license maintenance fee of CAD$6,000 to UBC, which has been converted to US dollars based on the December 31, 2016 exchange rate of US$1.00 = CAD$1.34551, and rounded to the nearest $1,000.

Off-Balance Sheet Arrangements

OncoGenex does not have any off-balance sheet financing arrangements at December 31, 2016.

Inflation

OncoGenex does not believe that inflation has had a material effect on its business and results of operations during the periods presented.

Material Changes in Financial Condition

	December 31,	
(in thousands)	2016	2015
Total Assets	$ 27,470	$ 58,209
Total Liabilities	8,504	20,769
Total Equity	18,966	37,440

The decrease in assets at December 31, 2016 compared with December 31, 2015 due to a decrease in cash and cash equivalents as these assets have been used to fund operations and a decrease in prepaid assets related to the drawdown of OncoGenex's escrow payments to its clinical research organization vendors. The decrease in liabilities at December 31, 2016 compared with December 31, 2015 was due to a decrease in clinical trial accruals associated with patient treatment costs in the AFFINITY trial, ENSPIRIT trial and OncoGenex's investigator sponsored trials evaluating apatorsen, lower deferred revenue as these amounts were recognized into collaboration revenue on a dollar for dollar basis as costs were incurred as part of the continuing research and development activities related to custirsen, the reversal of the lease termination liability and decrease in accrued compensation liabilities. This was partially offset by higher accrued liabilities as a result of the severance associated with the restructurings announced in fiscal 2016.

Critical Accounting Policies and Estimates

Use of Estimates

The preparation of consolidated financial statements in conformity with United States generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported

in the consolidated financial statements and notes thereto. Actual results could differ from these estimates. Estimates and assumptions principally relate to estimates of the fair value of OncoGenex's warrant liability, the initial fair value and forfeiture rates of stock options issued to employees and consultants, the estimated compensation cost on performance restricted stock unit awards and clinical trial and manufacturing accruals, estimated useful lives of property, plant and equipment and estimates and assumptions in contingent liabilities.

Fair value of financial instruments

The fair value of OncoGenex's cash equivalents and marketable securities is based on quoted market prices and trade data for comparable securities. OncoGenex determines the fair value of its warrant liability based on the Black-Scholes pricing model and using considerable judgment, including estimating stock price volatility and expected warrant life. Other financial instruments including amounts receivable, accounts payable, accrued liabilities other, accrued clinical liabilities, accrued compensation and lease termination liability are carried at cost, which OncoGenex believes approximates fair value because of the short-term maturities of these instruments.

Revenue Recognition

Revenue recognized to date is attributable to the upfront payment OncoGenex received in the fourth quarter of 2009 pursuant to the collaboration agreement with Teva, as well as cash reimbursements from Teva for costs incurred by OncoGenex under the clinical development plan. In April 2015, OncoGenex and Teva entered into an agreement, or the Termination Agreement, pursuant to which the Collaboration Agreement was terminated and OncoGenex regained rights to custirsen.

Pursuant to the Termination Agreement, Teva paid to OncoGenex, as advanced reimbursement for certain continuing research and development activities related to custirsen, an amount equal to $27.0 million less approximately $3.8 million, which reduction represented a hold-back amount of $3.0 million and $0.8 million for certain third-party expenses incurred by Teva between January 1, 2015 and April 24, 2015, or Closing Date. Teva was permitted to deduct from the $3.0 million hold-back certain costs incurred after January 1, 2015 that arose after the Closing Date. Teva is responsible for expenses related to custirsen incurred pursuant to the Collaboration Agreement through December 31, 2014. OncoGenex is responsible for certain custirsen-related expenses from and after January 1, 2015. Pursuant to the Termination Agreement, it received a nominal amount from the remaining hold-back after deductions by Teva for certain costs incurred after the Closing Date. It does not expect to receive any additional amounts from Teva.

As a result of the termination of the Collaboration Agreement with Teva, OncoGenex does not expect to earn any additional collaboration revenue beyond the amounts provided as advanced reimbursement for custirsen-related development expenses as set forth in the Termination Agreement. The advanced reimbursement payment made by Teva, as part of the Termination Agreement, was deferred and was recognized as collaboration revenue on a dollar for dollar basis as costs were incurred as part the of continuing research and development activities related to custirsen and certain other antisense inhibitors of clusterin. OncoGenex has fully utilized the $23.2 million in advance reimbursement for custirsen-related development costs between January 1, 2015 and June 30, 2016.

Prior to the termination of the collaboration agreement, OncoGenex and Teva shared certain custirsen-related development costs. OncoGenex had spent the required $30 million in direct and indirect development costs, such as full-time equivalent reimbursement for time incurred by its personnel for the benefit of the custirsen development plan. Teva funded all other expenses under the collaboration agreement including the three phase 3 clinical trials under the clinical development plan. On a quarterly basis Teva reimbursed all development expenses incurred in accordance with OncoGenex's clinical development plan. OncoGenex's policy was to account for these reimbursements as Collaboration Revenue. For a summary description of the collaboration agreement with Teva see also Note 4.

The terminated collaboration agreement contained multiple elements and deliverables, and required evaluation pursuant to ASC 605-25,*Multiple-Element Arrangements*, or ASC 605-25. OncoGenex evaluated the facts and circumstances of the collaboration agreement to determine whether it had obligations constituting deliverables under ASC 605-25. OncoGenex concluded that it had multiple deliverables under the collaboration agreement, including deliverables relating to the grant of a technology license, and performance of manufacturing, regulatory and clinical development services in the U.S. and Canada, and estimated that the period in which it would perform those deliverables began in the fourth quarter of 2009 and was completed in the fourth quarter of 2012. Because OncoGenex has been able to establish vendor specific objective evidence, or VSOE, of the fair value of the maintenance, regulatory, and clinical services, it concluded that these deliverables should be accounted as separate units of accounting under ASC 605-25. In establishing VSOE for the manufacturing, regulatory, and clinical development services, management relied on rates charged by other service providers providing similar development services.

Because OncoGenex was not able to reliably estimate the fair value of the technology license, it used the residual value approach to determine the amount of revenue to recognize. Based on this approach, it recognized $22 million in 2009 relating to this element.

Impairment of Long-Lived Assets

OncoGenex reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the asset's carrying amount may not be recoverable. It conducts its long-lived asset impairment analyses in accordance with ASC 360-10-15, "Impairment or Disposal of Long-Lived Assets." ASC 360-10-15 requires OncoGenex to group assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities and evaluate the asset group against the sum of the undiscounted future cash flows. If the undiscounted cash flows do not indicate the carrying amount of the asset is recoverable, an impairment charge is measured as the amount by which the carrying amount of the asset group exceeds its fair value based on discounted cash flow analysis or appraisals.

Income Taxes

Income taxes are accounted for under the liability method. Deferred tax assets and liabilities are recognized for the differences between the carrying values of assets and liabilities and their respective income tax bases and for operating losses and tax credit carry forwards. A valuation allowance is provided for the portion of deferred tax assets that is more likely than not to be unrealized. Deferred tax assets and liabilities are measured using the enacted tax rates and laws.

Scientific Research and Development Tax Credits

The benefits of tax credits for scientific research and development expenditures are recognized in the year the qualifying expenditure is made provided there is reasonable assurance of recoverability. The tax credits recorded are based on OncoGenex's estimates of amounts expected to be recovered and are subject to audit by taxation authorities. The non-refundable tax credit reduces the tax provision; however, no reduction to the tax provision has been recorded to date as OncoGenex records a full valuation allowance. All qualifying expenditures are eligible for non-refundable tax credits only.

Research and Development Costs

Research and development costs are expensed as incurred, net of related refundable investment tax credits, with the exception of non-refundable advanced payments for goods or services to be used in future research and development, which are capitalized in accordance with ASC 730, "Research and Development" and included within Prepaid Expenses or Other Assets depending on when the assets will be utilized.

Clinical trial expenses are a component of research and development costs. These expenses include fees paid to contract research organizations and investigators and other service providers, which conduct certain product development activities on OncoGenex's behalf. OncoGenex uses an accrual basis of accounting, based upon estimates of the amount of service completed. In the event payments differ from the amount of service completed, prepaid expense or accrued liabilities amounts are adjusted on the balance sheet. These expenses are based on estimates of the work performed under service agreements, milestones achieved, patient enrollment and experience with similar contracts. OncoGenex monitors each of these factors to the extent possible and adjusts estimates accordingly.

Stock-Based Compensation

Effective January 1, 2006, OncoGenex adopted the fair value recognition provisions of the ASC 718, "Stock Compensation," using the modified prospective method with respect to options granted to employees and directors. Under this transition method, compensation cost is recognized in the financial statements beginning with the effective date for all share-based payments granted after January 1, 2006 and for all awards granted prior to but not yet vested as of January 1, 2006. The expense is amortized on a straight-line basis over the graded vesting period.

Restricted Stock Unit Awards

OncoGenex grants restricted stock unit awards that generally vest and are expensed over a four-year period. It also granted restricted stock unit awards that vest in conjunction with certain performance conditions to certain executive officers and key employees. At each reporting date, OncoGenex evaluates whether achievement of the performance conditions is probable. Compensation expense is recorded over the appropriate service period based upon its assessment of accomplishing each performance provision or the occurrence of other events that may have caused the awards to accelerate and vest.

Segment Information

OncoGenex follows the requirements of ASC 280, "Segment Reporting." It has one operating segment, dedicated to the development and commercialization of new cancer therapies, with operations located in Canada and the United States.

Warrants

OncoGenex accounts for warrants pursuant to the authoritative guidance on accounting for derivative financial instruments indexed to, and potentially settled in, a company's own stock, on the understanding that in compliance with applicable securities laws, the warrants require the issuance of registered securities upon exercise and therefore do not sufficiently preclude an implied right to net cash settlement. It classifies warrants on the consolidated balance sheet as a liability which is revalued at each balance sheet date subsequent to the initial issuance. It also has warrants classified as equity and these are not reassessed for their fair value at the end of each reporting period. Warrants classified as equity are initially measured at their fair value and recognized as part of stockholders' equity. Determining the appropriate fair-value model and calculating the fair value of registered warrants requires considerable judgment, including estimating stock price volatility and expected warrant life. The computation of expected volatility was based on the historical volatility of shares of OncoGenex common stock for a period that coincides with the expected life of the warrants. A small change in the estimates used may have a relatively large change in the estimated valuation. OncoGenex uses the Black-Scholes pricing model to value the warrants. Changes in the fair value of the warrants classified as liabilities are reflected in the consolidated statement of loss as gain (loss) on revaluation of warrants.

Foreign Currency Translation

OncoGenex's functional and reporting currency is the U.S. dollar. Revenues and expenses denominated in other than U.S. dollars are translated at average monthly rates.

The functional currency of OncoGenex's foreign subsidiary is the U.S. dollar. For this foreign operation, assets and liabilities denominated in other than U.S. dollars are translated at the period-end rates for monetary assets and liabilities and historical rates for non-monetary assets and liabilities. Revenues and expenses denominated in other than U.S. dollars are translated at average monthly rates. Gains and losses from this translation are recognized in the consolidated statement of loss.

Pending Adoption of Recent Accounting Pronouncements

On February 2016, the Financial Accounting Standards Board, or FASB, issued its new leases standard, Accounting Standards Update, or ASU, No. 2016-02, Leases (Topic 842), or ASU 2016-02. ASU 2016-02 is aimed at putting most leases on lessees' balance sheets, but it would also change aspects of lessor accounting. ASU 2016-02 is effective for public business entities for annual periods beginning after December 15, 2018 and interim periods within that year. This standard is expected to have a significant impact on OncoGenex's current accounting for its lease arrangements, particularly its current operating lease arrangements, as well as, disclosures. OncoGenex is currently evaluating the impact of adoption on its financial position and results from operations.

In May 2014, the FASB, issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606): Revenue from Contracts with Customers, which guidance in this update will supersede the revenue recognition requirements in Topic 605, Revenue Recognition, and most industry-specific guidance when it becomes effective. ASU No. 2014-09 affects any entity that enters into contracts with customers to transfer goods or services or enters into contracts for the transfer of nonfinancial assets unless those contracts are within the scope of other standards. The core principal of ASU No. 2014-09 is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In doing so, companies will need to use more judgment and make more estimates than under current guidance. These may include identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. ASU No. 2014-09 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period, which will be OncoGenex's fiscal year 2018 (or December 31, 2018), and entities can transition to the standard either retrospectively or as a cumulative-effect adjustment as of the date of adoption. Early adoption is permitted. OncoGenex is currently in the process of evaluating the impact of adoption of ASU No. 2014-09 and cannot reasonably estimate how the adoption of the standard will impact its consolidated financial statements and related disclosures.

Recently Adopted Accounting Policies

In March 2016, the FASB issued ASU 2016-09,*Improvements to Employee Share-Based Payment Accounting.* ASU 2016-09 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. Some of the areas for simplification apply only to nonpublic entities. For public business entities, the amendments in this Update are effective for annual periods beginning after 15 December 2016, and interim periods within those annual periods. For all other entities, the amendments are effective for annual periods beginning after 15 December 2017, and interim periods within annual periods beginning after 15 December 2018. The adoption of this standard did not have a significant impact on OncoGenex's financial position or results of operations.

In November 2015, the FASB issued ASU No. 2015-17, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes. The standard requires that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. Entities are currently required to separate deferred income tax liabilities and assets into current and noncurrent amounts in a classified statement of financial position. The amendments, which require non-current presentation only (by jurisdiction), are effective for financial statements issued for

annual periods beginning after December 15, 2016 with earlier application permitted as of the beginning of an interim or annual reporting period. The guidance is to be applied either prospectively to all deferred tax liabilities and assets or retrospectively to all periods presented. The adoption of this standard did not have a significant impact on OncoGenex's financial position or results of operations.

In February 2015, the FASB issued ASU 2015-02, Consolidation (Topic 810)—Amendments to the Consolidation Analysis. ASU 2015-02 eliminates the deferral of FAS 167 and makes changes to both the variable interest model and the voting model. For public business entities, the guidance is effective for annual and interim periods beginning after 15 December 2015. For nonpublic business entities, it is effective for annual periods beginning after 15 December 2016, and interim periods beginning after 15 December 2017. The adoption of this standard did not have a significant impact on OncoGenex's financial position or results of operations.

In January 2015, the FASB issued ASU 2015-01, Income Statement—Extraordinary and Unusual Items (Subtopic 225-20): Simplifying Income Statement Presentation by Eliminating the Concept of Extraordinary Items. ASU 2015-01 eliminates the concept of reporting extraordinary items, but retains current presentation and disclosure requirements for an event or transaction that is of an unusual nature or of a type that indicates infrequency of occurrence. Transactions that meet both criteria would now also follow such presentation and disclosure requirements. For all entities, the guidance is effective for annual periods, and interim periods within those annual periods, beginning after 15 December 2015. The adoption of this standard did not have a significant impact on OncoGenex's financial position or results of operations.

In August 2014, the FASB issued ASU No. 2014-15, Presentation of Financial Statements-Going Concern (Subtopic 2015-40), or ASU 2014-15. ASU 2014-15 provides guidance to U.S. GAAP about management's responsibility to evaluate whether there is a substantial doubt about an entity's ability to continue as a going concern and to provide related footnote disclosures. This new rule requires management to assess an entity's ability to continue as a going concern by incorporating and expanding upon certain principles currently in the U.S. auditing standards. Specifically, ASU 2014-15 (1) defines the term substantial doubt, (2) requires an evaluation of every reporting period including interim periods, (3) provides principles for considering the mitigating effect of management's plans, (5) requires an express statement and other disclosures when substantial doubt is not alleviated, and (6) requires an assessment for a period of one year after the date that the financial statements are issued (or available to be issued). This guidance is effective for annual periods ending after December 15, 2016. The adoption of this standard did not have a significant impact on OncoGenex's financial statement disclosures.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT ONCOGENEX MARKET RISK

Interest Rate Risk

Interest rate risk is the risk that the fair values and future cash flows of financial instruments will fluctuate because of the changes in market interest rates. OncoGenex invests its cash in a variety of financial instruments, primarily in short-term bank deposits, money market funds and domestic and foreign commercial paper and government securities. These investments are denominated in U.S. dollars, and OncoGenex monitors its exposure to interest rate changes. OncoGenex has very limited interest rate risk due to the few assets or liabilities subject to fluctuations in interest rates. OncoGenex's investment portfolio includes only marketable securities with active secondary or resale markets to help ensure portfolio liquidity. Due to the nature of our highly liquid marketable securities, a change in interest rates would not materially change the fair market value. OncoGenex has estimated the effect on its portfolio of a hypothetical increase in interest rates by one percent to be a reduction of $0.2 million in the fair value of its investments as of December 31, 2016.

Foreign Currency Exchange Risk

OncoGenex is exposed to risks associated with foreign currency transactions on certain contracts and payroll expenses related to its Canadian subsidiary, OncoGenex Technologies, Inc., denominated in Canadian dollars and it has not hedged these amounts. As OncoGenex's unhedged foreign currency transactions fluctuate, its earnings might be negatively affected. Accordingly, changes in the value of the U.S. dollar relative to the Canadian dollar might have an adverse effect on OncoGenex's reported results of operations and financial condition, and fluctuations in exchange rates might harm is reported results and accounts from period to period. OncoGenex has estimated the effect on its reported results of operations of a hypothetical increase of 10 percent in the exchange rate of the Canadian dollar against the U.S. dollar to be $0.3 million for the year ended December 31, 2016.

ACHIEVE MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of financial condition and results of operations should be read together with the section titled "Selected Historical and Unaudited Pro Forma Condensed Combined Financial Information and Data—Selected Historical Consolidated Financial Data of Achieve" in this proxy statement/prospectus/information statement and the consolidated financial statements of Achieve and accompanying notes appearing elsewhere in this proxy statement/prospectus/information statement. This discussion of Achieve's financial condition and results of operations contains certain statements that are not strictly historical and are "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995 and involve a high degree of risk and uncertainty. Actual results may differ materially from those projected in the forward-looking statements due to other risks and uncertainties that exist in Achieve's operations, development efforts and business environment, including those set forth in the section titled "Risk Factors—Risks Related to Achieve" in this proxy statement/prospectus/information statement, the other risks and uncertainties described in the section titled "Risk Factors" in this proxy statement/prospectus/information statement and the other risks and uncertainties described elsewhere in this proxy statement/prospectus/information statement. All forward-looking statements included in this proxy statement/prospectus/information statement are based on information available to Achieve as of the date hereof, and Achieve assumes no obligation to update any such forward-looking statement.

Overview

Achieve is a clinical-stage specialty pharmaceutical company focused on the development and commercialization of cytisine, a smoking cessation aid that has been marketed in Central and Eastern Europe by a third party for over 15 years under the brand name Tabex™ and is estimated to have treated in excess of 21 million patients through December 2016. Cytisine is a naturally occurring plant-based alkyloid from the seeds of the *Laburnum anagyroides* plant that is believed to reduce the severity of nicotine withdrawal symptoms by targeting receptors in the brain. Cytisine has the potential to be more cost effective than competing prescription smoking cessation medicines and to have better efficacy than currently available Over-the-Counter, or OTC, treatments.

Two large-scale, investigator-led, Phase 3 clinical trials conducted in over 2,000 patients demonstrated positive results. These Phase 3 trials reinforced results from historic Central and Eastern European studies in over 8,000 subjects. The results of the two Phase 3 clinical trials were published in the *New England Journal of Medicine* in September 2011 and December 2014.

Achieve has met with the U.S. Food and Drug Administration, or FDA, and with other national regulatory authorities in Europe to identify the steps required for the approval of cytisine. The FDA has requested results from non-clinical studies, additional human pharmacokinetic studies and adequate demonstration of safety and efficacy from well-controlled placebo-controlled Phase 3 clinical trials. Achieve believes that a single, well controlled Phase 3 clinical trial demonstrating safety and statistically significant efficacy, in combination with the two already completed Phase 3 trials, will be sufficient for FDA approval. The non-clinical studies have been sponsored by the National Center for Complementary and Integrative Health, or NCCIH, division of the U.S. National Institutes of Health, or NIH, in addition to the National Cancer Institute, or NCI. The non-clinical studies and the additional human pharmacokinetic studies are expected to be completed in the second half of 2017. Achieve intends to commence a Phase 3 clinical trial in the first half of 2018, subject to the completion of the merger and availability of capital. While third party trials of cytisine have been conducted that may support any future clinical trials by Achieve, Achieve has not yet submitted an IND to the FDA for cytisine or conducted clinical trials for cytisine in the United States or any other jurisdiction.

Achieve's management team has significant experience in growing emerging companies involved in developing under-recognized and under-utilized pharmaceutical compounds to meet unmet or underserved medical needs.

Achieve has used and intends to use this experience in the future to develop and ultimately commercialize cytisine either directly or via strategic collaborations or both.

Achieve was formed in 2015 as a Delaware corporation. Achieve has one direct wholly-owned subsidiary, Extab Corporation, a Delaware corporation, which was formed in 2009. Extab Corporation in turn has one direct wholly-owned subsidiary, Achieve Pharma UK Limited, a United Kingdom company, which was formed in 2009. References throughout this section of this proxy statement/prospectus/information statement to "Achieve" shall include references to its direct and indirect wholly-owned subsidiaries unless otherwise noted.

Achieve has no products approved for commercial sale and has not generated any revenue from product sales. From inception to December 31, 2016, Achieve has raised net cash proceeds of approximately $2.8 million, primarily from convertible and non-convertible debt financings. Achieve has never been profitable and has incurred operating losses in each year since inception. Achieve's net losses were $1.2 million for the twelve months ended December 31, 2016, and $0.8 million for the period ended December 31, 2015. As of December 31, 2016, Achieve had an accumulated deficit of $2.1 million. Substantially all of Achieve's operating losses resulted from expenses incurred from general and administrative costs associated with its operations and in connection with its research and development programs.

Achieve expects to incur significant expenses and increasing operating losses for at least the next several years as Achieve initiates and continues the clinical development of, and seeks regulatory approval for, cytisine and adds personnel necessary to operate as a public company with an advanced clinical candidate. In addition, operating as a publicly-traded company would involve the hiring of additional financial and other personnel, upgrading financial information systems, and incurring other costs associated with operating as a public company. Achieve expects that its operating losses will fluctuate significantly from quarter to quarter and year to year due to timing of clinical development programs and efforts to achieve regulatory approval.

As of December 31, 2016, Achieve had cash, cash equivalents, and short-term investments of $15,000. Achieve's current capital resources are insufficient to fund its planned operations for the next 12 months with or without completion of the merger. Achieve will continue to require substantial additional capital to continue its clinical development activities. Accordingly, Achieve will need to raise substantial additional capital to continue to fund its operations. The amount and timing of Achieve's future funding requirements will depend on many factors, including the pace and results of its clinical development efforts. Failure to raise capital as and when needed, on favorable terms or at all, would have a negative impact on Achieve's financial condition and its ability to develop its product candidate.

Collaboration and License Agreements

Sopharma License and Supply Agreements

In 2009, Achieve, through one of its subsidiaries, entered into a license agreement, or the Sopharma License Agreement, and a supply agreement, or the Sopharma Supply Agreement, with Sopharma A.D., or Sopharma. Pursuant to the Sopharma License Agreement, Achieve was granted access to all available manufacturing, efficacy and safety data related to cytisine, including a granted patent in several European countries including Germany, France and Italy related to new oral dosage forms of cytisine providing enhanced stability. This patent is scheduled to expire on February 2, 2025. Additional rights granted under the Sopharma License Agreement include the exclusive use of, and the right to sublicense, the trademark Tabex in all territories—other than those mainly in Eastern Europe and parts of North Africa, where Sopharma or its affiliates and agents already market Tabex—in connection with the marketing, distribution and sale of products. Under the Sopharma License Agreement, Achieve agreed to pay a nonrefundable license fee. In addition, Achieve agreed to make certain royalty payments equal to a mid-teens percentage of all net sales of Tabex branded products in the Achieve territory during the term of the Sopharma License Agreement, including those sold by a third party pursuant to any sublicense which may be granted by Achieve. Achieve has agreed to cooperate with Sopharma in the defense

against any actual or threatened infringement claims with respect to Tabex. Sopharma has the right to terminate the Sopharma License Agreement upon the termination or expiration of the Sopharma Supply Agreement. The Sopharma License Agreement will also terminate under customary termination provisions including Achieve's bankruptcy or insolvency and material breach. To date, Achieve, through a subsidiary, has paid Sopharma $10.00 pursuant to the Sopharma License Agreement.

A cross-license exists between Achieve and Sopharma whereby Achieve grants to Sopharma rights to any patents or patent applications or other intellectual property rights filed by Achieve in Sopharma territories.

On May 15, 2015, Achieve and Sopharma entered into an amendment to the Sopharma License Agreement. Among other things, the amendment to the Sopharma License Agreement reduced the royalty payments payable by Achieve to Sopharma from a percentage in the mid-teens to a percentage in the mid-single digits and extended the term of the Sopharma License Agreement until May 26, 2029.

Pursuant to the amended and restated Sopharma Supply Agreement as expected to be in effect upon the completion of the merger, Achieve will exclusively purchase all of its cytisine from Sopharma and Sopharma will agree to supply cytisine exclusively to Achieve in all territories except for mainly those in Eastern Europe and part of North Africa. In addition, Achieve will have full access to the cytisine supply chain and Sopharma will manufacture sufficient cytisine to meet a forecast for a specified demand of cytisine for a specified period of time, each to be mutually agreed upon by the parties. Each of Achieve and Sopharma may terminate the Sopharma Supply Agreement in the event of the other party's material breach or bankruptcy or insolvency.

University of Bristol License Agreement

In July 2016, Achieve entered into a license agreement with the University of Bristol, or the University of Bristol License Agreement. Under the University of Bristol License Agreement, Achieve received exclusive and nonexclusive licenses from the University of Bristol to certain patent and technology rights resulting from research activities into cytisine and its derivatives, including a number of patent applications related to novel approaches to cytisine binding at the nicotine receptor level. Any patents issued in connection with these applications would be scheduled to expire on either February 5, 2036 or August 19, 2036.

In consideration of rights granted by the University of Bristol, Achieve agreed to pay amounts of up to $3.2 million, in the aggregate, tied to a financing milestone and to specific clinical development and commercialization milestones resulting from activities covered by the University of Bristol License Agreement. Additionally, if Achieve successfully commercializes any product candidate subject to the University of Bristol License Agreement, Achieve is responsible for royalty payments in the low-single digits and payments up to a percentage in the mid-teens of any sublicense income, subject to specified exceptions, based upon net sales of such licensed products.

Unless otherwise terminated, the University of Bristol License Agreement will continue until the earlier of July 2036 or the expiration of the last patent claim subject to the University of Bristol License Agreement. Achieve may terminate the University of Bristol License Agreement for convenience upon a specified number of days' prior notice to the University of Bristol. The University of Bristol License Agreement will terminate under customary termination provisions including Achieve's bankruptcy or insolvency or its material breach of the agreement. Under the terms of the University of Bristol License Agreement, Achieve has provided 100 grams of cytisine to the University of Bristol as an initial contribution. To date, Achieve has not paid any further sums to the University of Bristol pursuant to the University of Bristol License Agreement.

Ricanto Agreement

In September 2015, Achieve entered into a consulting agreement with Ricanto Limited, a U.K. based company providing management services to Achieve. Under the terms of the agreement Ricanto will provide the services

of Richard Stewart and Dr. Anthony Clarke as management personnel for the company. Following the merger, it is expected that Mr. Stewart and Dr. Clarke will provide services to the combined company as employees, rather than pursuant to a consulting agreement with Ricanto.

Pending Merger Agreement with OncoGenex

On January 5, 2017, OncoGenex and Achieve entered into the Merger Agreement, pursuant to which Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex will merge with and into Achieve, or the First Merger, with Achieve becoming a wholly owned subsidiary of OncoGenex and the surviving company of the First Merger, or the Initial Surviving Corporation. Promptly following the First Merger, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc., or Merger Sub 2, a Delaware corporation and a wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity as a direct wholly owned subsidiary of OncoGenex. The two mergers taken together, are intended to qualify as a "reorganization" within the meaning of Section 368(a)(2)(D) of the Internal Revenue Code of 1986, as amended. The surviving company, or the combined company, is expected to be renamed Achieve Life Sciences, Inc. The Merger is expected to close in mid-2017.

Subject to the terms and conditions of the Merger Agreement, at the closing of the First Merger, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of OncoGenex common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's fully-diluted capitalization, as well as the payment of cash in lieu of fractional shares. Immediately following the effective time of the merger, Achieve's equityholders are expected to own approximately 75% of the outstanding capital stock of the combined company on a fully diluted basis, and the OncoGenex stockholders are expected to own approximately 25% of the outstanding capital stock of the combined company on a fully diluted basis.

Consummation of the merger is subject to certain closing conditions, including, among other things, approval by the stockholders of OncoGenex and Achieve. The Merger Agreement contains certain termination rights for both OncoGenex and Achieve, and further provides that, upon termination of the Merger Agreement under specified circumstances, either party may be required to pay the other party a termination fee of $0.5 million. In addition, the Merger Agreement provides that if either party breaches certain covenants regarding alternative transactions to those contemplated by the Merger Agreement, the breaching party may be required to pay the other party a termination fee of $1.0 million. In connection with certain terminations of the Merger Agreement, either party may be required to pay the other party's third party expenses up to $0.5 million.

At the effective time of the First Merger, the Board of Directors of OncoGenex is expected to consist of seven members, three of whom will be designated by OncoGenex and four of whom will be designated by Achieve. OncoGenex is expected to designate Scott Cormack, Stewart Parker and Martin Mattingly. Achieve is expected to designate Richard Stewart, Anthony Clarke and two other independent directors that have yet to be determined. Additionally, at the effective time of the First Merger, Richard Stewart, the current Chairman of Achieve, is expected to be the Chairman and Chief Executive Officer of the combined company; Anthony Clarke, the current Chief Scientific Officer of Achieve, is expected to be the Chief Scientific Officer of the combined company; and John Bencich, OncoGenex's Chief Financial Officer and Cindy Jacobs, OncoGenex's Chief Medical Officer, are expected to continue to serve the combined company in their respective roles.

In accordance with the terms of the Merger Agreement, (i) certain of the officers and directors of OncoGenex, who collectively hold approximately 1.2 percent of the outstanding shares of its capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with Achieve, or the OncoGenex Support Agreements, and (ii) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with OncoGenex, or the Achieve Support Agreements, and together with the OncoGenex Support Agreements, the Support Agreements. The Support

Agreements include covenants as to the voting of such shares in favor of approving the transactions contemplated by the Merger Agreement and against actions that could adversely affect the consummation of the Merger.

The Support Agreements will terminate upon the earlier of the consummation of the First Merger or the termination of the Merger Agreement by its terms.

Concurrently and in connection with the execution of the Merger Agreement, (i) certain of the officers and directors of OncoGenex, who collectively hold approximately 1.2 percent of the outstanding shares of its capital stock as of the close of business on January 4, 2017 and (ii) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into lock-up agreements with OncoGenex, pursuant to which, subject to certain exceptions, each stockholder will be subject to a 180-day, or the Lock-Up Period, lock-up on the sale of shares of OncoGenex capital stock, which Lock-Up Period shall begin upon the consummation of the First Merger.

OncoGenex expects to issue contingent value rights, or each, a CVR and collectively, the CVRs, to its existing stockholders prior to the completion of the First Merger. One CVR will be issued for each share of its common stock outstanding as of the record date for such issuance. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the First Merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to OncoGenex's product candidate apatorsen, or the Milestones, upon the terms and subject to the conditions set forth in a contingent value rights agreement to be entered into between OncoGenex, Achieve and an as of yet unidentified third party, as rights agent, or the CVR Agreement. The aggregate consideration to be distributed to the holders of the CVRs, if any, will be equal to 80% of the consideration received by the combined company as a result of the achievement of the Milestones less certain agreed to offsets, as determined pursuant to the CVR Agreement. Under the CVR Agreement, for a period of six months beginning in February 2017, OncoGenex will use certain defined efforts to enter into an agreement with a third party regarding the development and/or commercialization of apatorsen. At the expiration of this six-month period, if a third party has not entered into a term sheet for the development or commercialization of apatorsen, the combined company will no longer be contractually required to pursue an agreement regarding apatorsen and no consideration will be payable to the holders of CVRs.

OncoGenex is currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen, but has not yet identified such a party or set any Milestones. OncoGenex cannot give any assurance that it will be able to identify and enter into an agreement with a third party to develop and potentially commercialize apatorsen by August 17, 2017, or if it does, that any Milestones will be set or any consideration will ever be received by the combined company or distributed to the CVR holders. Therefore, OncoGenex stockholders will not be able to determine the value of the CVRs, if any, prior to the special meeting of OncoGenex stockholders since the value of the CVRs is contingent upon the occurrence of future events that are not yet known.

Achieve also entered into a letter agreement with OncoGenex, whereby OncoGenex would pay, on behalf of Achieve, for transactions costs associated with the merger. In the event that the Merger Agreement is terminated and as a result of such termination OncoGenex is required to pay to Achieve one or more termination fees, the total amount of termination fees OncoGenex would owe is reduced by the amount of the transaction costs it would have paid on behalf of Achieve.

Financial Operations Overview

Research and Development Expenses

Research and development expenses consist of costs associated with Achieve's clinical development activities with regard to cytisine. Achieve's research and development expenses include consulting expenses and manufacturing related expenses. In the future, Achieve anticipates research and development-related expenses to include:

- employee-related expenses, including salaries, benefits, and stock-based compensation;
- external research and development expenses incurred under arrangements with third parties, such as contract research organizations, or CROs, contract manufacturing organizations, consultants, and Achieve's scientific advisors;
- license fees; and
- facilities, information technology, depreciation and other allocated expenses, which include direct and allocated expenses for rent and maintenance of facilities, depreciation of leasehold improvements and equipment, and laboratory and other supplies.

Achieve expenses research and development costs as incurred. Achieve accounts for nonrefundable advance payments for goods and services that will be used in future research and development activities as expenses when the service has been performed or when the goods have been received.

Since Achieve's inception in May 2015, it has spent a total of approximately $0.4 million in research and development expenses through December 31, 2016.

Achieve expects its research and development expenses to increase for the foreseeable future as the company continues to conduct its ongoing pre-clinical studies, and initiates new clinical trials and registration-enabling activities. The process of conducting clinical trials and pre-clinical studies necessary to obtain regulatory approval is costly and time consuming and Achieve may never succeed in achieving marketing approval for cytisine.

Successful development of cytisine is highly uncertain and may not result in an approved product. Completion dates and completion costs can vary significantly and are difficult to predict. Achieve anticipates it will make determinations as to which markets, and therefore, which regulatory approvals, to pursue and how much funding to direct toward achieving regulatory approval in each market on an ongoing basis in response to Achieve's ability to enter into new strategic alliances with respect to each program or potential product candidate, the scientific and clinical success of each future product candidate, and ongoing assessments as to each future product candidate's commercial potential. Achieve will need to raise additional capital and may seek additional strategic alliances in the future in order to advance its various programs.

General and Administrative Expenses

General and administrative expenses consist primarily of employee salaries and consulting fees related to Achieve's executive, finance, accounting, legal, business development, and support functions. Other general and administrative expenses include amortization expense, facility and information technology related costs not otherwise included in research and development expenses and professional fees for auditing, tax, and legal services. Achieve expects that general and administrative expenses will increase in the future as Achieve expands its operating activities.

If Achieve completes the merger, Achieve would become a publicly-traded company and would expect to incur significant additional costs associated with being a publicly-traded company. These increases will likely include legal fees, costs associated with Sarbanes-Oxley Act compliance, accounting fees, and directors' and officers' liability insurance premiums, and other business insurance.

Other income (expense), net

Other income (expense) consists primarily of interest expense, foreign currency translation gains and losses, and various income or expense items of a non-recurring nature. Interest expense has historically been comprised of interest incurred under outstanding promissory notes, as well as interest and other related non-cash charges under convertible notes payable to Achieve's investors.

Critical Accounting Polices and Estimates

This management discussion and analysis of financial condition and results of operations is based on Achieve's consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of these financial statements requires Achieve to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses. On an ongoing basis, Achieve evaluates these estimates and judgments. Achieve bases its estimates on historical experience and on various assumptions that Achieve believes to be reasonable under the circumstances. These estimates and assumptions form the basis for making judgments about the carrying values of assets and liabilities and the recording of expenses that are not readily apparent from other sources. Actual results may differ materially from these estimates. Achieve believes that the accounting policies discussed below are critical to understanding Achieve's historical and future performance, as these policies relate to the more significant areas involving its judgments and estimates.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and notes thereto. Actual results could differ from these estimates. Estimates and assumptions principally relate to estimates of the fair value of Achieve's intangible asset, taxes, contingent considerations, fair value, research and development accruals and business combination estimates.

Revenue Recognition

Achieve has not recorded any revenues since its inception. However, in the future, Achieve may enter into agreements under which Achieve could be eligible to receive upfront payments for licenses or options to obtain licenses in the future, milestone payments that are generated from defined development events, as well as amounts for other research and development services under strategic alliance and collaboration agreements. In accordance with the SEC's Staff Accounting Bulletin Topic 13, revenue is recognized when all four of the following criteria are met: (i) persuasive evidence of an arrangement exists; (ii) products have been delivered or services rendered; (iii) the selling price is fixed or determinable; and (iv) collectability is reasonably assured.

Multiple element arrangements are examined to determine whether the deliverables can be separated or must be accounted for as a single unit of accounting. A typical Achieve collaboration agreement would, for example, include a combination of upfront license fees, payments for research and development activities, milestone payments and royalties that are evaluated to determine whether each deliverable under the agreement has value to the customer on a stand-alone basis and whether reliable evidence of fair value for the deliverable exists. Deliverables in an arrangement that do not meet these separation criteria are treated as a single unit of accounting, generally applying applicable revenue recognition guidance for the final deliverable to the combined unit of accounting.

Achieve will recognize revenue from nonrefundable upfront license fees over the term of performance under any future collaboration agreement. When the performance period is not specified, Achieve will estimate the performance period based upon provisions contained within the agreement, such as the duration of the research or development term, the existence, or likelihood of achievement of development commitments and any other

significant commitments. These advance payments are deferred and recorded as deferred revenue upon receipt, pending recognition, and are classified as a short-term or long-term liability in the accompanying consolidated balance sheets. Expected performance periods are reviewed periodically and, if applicable, the amortization period is adjusted which, Achieve may accelerate or decelerate revenue recognition. The timing of revenue recognition, specifically as it relates to the amortization of upfront license fees, is significantly influenced by Achieve's estimates.

Research and Development

Research and development costs are expensed as incurred and include and are expected to include compensation and related benefits, stock-based compensation, license fees, facilities, and overhead costs. Achieve expects to make nonrefundable advance payments for goods and services that will be used in future research and development activities. These payments will be capitalized and recorded as expense in the period that Achieve receives the goods or when the services are performed.

Achieve will record and pay upfront and milestone payments to acquire contractual rights to licensed technology as research and development expenses when incurred if there is uncertainty in Achieve receiving future economic benefit from the acquired contractual rights. Achieve considers future economic benefits from acquired contractual rights to licensed technology to be uncertain until such a drug candidate is approved by the FDA or when other significant risk factors are abated.

Clinical Trial and Pre-Clinical Study Accruals

Achieve makes estimates of its accrued expenses as of each balance sheet date in Achieve's consolidated financial statements based on certain facts and circumstances at that time. Accrued expenses for pre-clinical studies and clinical trials are based on estimates of costs incurred for services provided by consultants, CROs, manufacturing organizations, and for other trial related activities. Payments under agreements with external service providers will depend on a number of factors such as site initiation, patient screening, enrollment, delivery of reports, and other events. In accruing for these activities, Achieve will obtain information from various sources and estimates level of effort or expense allocated to each period. Adjustments to Achieve's research and development expenses may be necessary in future periods as its estimates change. As these activities are expected to be material to Achieve's overall financial statements, subsequent changes in estimates may result in a material change in its accruals. To date, Achieve has made no accrual for clinical trial or pre-clinical study costs.

Results of Operations

Comparison of the Year Ended December 31, 2016 and Period Ended December 31, 2015

The following table summarizes Achieve's results of operations for the year ended December 31, 2016 and period ended December 31, 2015 (in thousands):

	December 31,	
	2016	**2015**
Research and development expenses	$ 286	$ 107
General and administrative expenses	1,428	1,116
Other income (expense), net	(24)	(12)
Recovery of income taxes	(504)	(407)
Net loss	1,234	828

Research and Development Expenses

Research and development expenses were $0.3 million for the year ended December 31, 2016, as compared to $0.1 million for the period ended December 31, 2015. The increase in research and development expenses for the year ended December 31, 2016 is primarily related to increased activity in connection with coordinating regulatory and clinical development activities with the FDA, European Medicines Agency, or EMA, and the National Institute of Health, or NIH, and non-clinical updates.

General and Administrative Expenses

General and administrative expenses were $1.4 million for the year ended December 31, 2016 as compared to $1.1 million for the period ended December 31, 2015. The increase in general and administrative expenses for the year ended December 31, 2016 is primarily related to the fact that the company was incorporated in May 2015 and did not operate for a full year during the period ended December 31, 2015.

Other income (expense), net

Other expenses were $24,000 for the year ended December 31, 2016 as compared to $12,000 for the period ended December 31, 2015. The increase in other expense was primarily related to higher interest expense on the convertible note payable to a certain shareholder in the year ended December 31, 2016.

Provision for (recovery of) income taxes

Recovery of income taxes were $0.5 million for the year ended December 31, 2016 as compared to $0.4 million for the period ended December 31, 2015. The recovery of income taxes for the year ended December 31, 2016 and 2015 relates to the amortization of the deferred tax liability that arose as a result of the purchase accounting for the stock acquisition of Extab Corporation by Achieve.

Liquidity and Capital Resources

Since Achieve's inception through December 31, 2016, Achieve has received $2.0 million from the issuance of convertible debt securities and $0.8 million from the issuance of promissory notes payable to certain shareholders.

As of December 31, 2016, Achieve had $15,000 in cash and cash equivalents. The following table shows a summary of Achieve's cash flows for the year ended December 31, 2016 and period ended December 31, 2015 (in thousands):

	December 31,	
	2016	**2015**
Net cash (used in) provided by:		
Operating activities	$(202)	$ (350)
Investing activities	0	(2,000)
Financing activities	150	2,411
Net increase (decrease) in cash and cash equivalents	(52)	61

Achieve has historically experienced recurring losses from operations that have generated an accumulated deficit of $2.1 million through December 31, 2016.

The financial results have been prepared assuming Achieve will continue to operate as a going concern, which contemplates the realization of assets and liabilities and commitments in the normal course of business.

During the year ended December 31, 2016, Achieve incurred a net loss of $1.2 million and negative cash flows of $0.1 million. As of December 31, 2016, Achieve had a cash balance of $15,000, an accumulated deficit of $2.1 million, and a negative working capital balance of $3.1 million.

The ability of Achieve to continue as a going concern is uncertain and dependent on Achieve's ability to consummate the pending merger agreement with OncoGenex Pharmaceuticals, Inc. announced on January 5, 2017, and/or obtain additional financing. Management has, thus far, financed the operations through stockholder loans and debt financing.

The consolidated financial results do not include any adjustments to the amounts and classification of assets and liabilities that might be necessary should Achieve be unable to continue as a going concern. Such adjustments could be material.

Operating Activities

Cash used in operating activities was $0.2 million for the year ended December 31, 2016 and $0.4 million for the period ended December 31, 2015. The decrease in cash used in operating activities was primarily attributable to increases in accrued liabilities and accrued compensation during the year ended December 31, 2016.

Investing Activities

Cash used in investing activities of $2.0 million during the period ended December 31, 2015 related to the purchase price for the acquisition of Extab Corporation.

Financing Activities

Cash provided by financing activities was $0.2 million for the year ended December 31, 2016 compared to $2.4 million for the period ended December 31, 2015. Cash provided by financing activities for the year ended December 31, 2016 related to proceeds from promissory notes payable to a certain shareholder. Cash provided by financing activities for the period ended December 31, 2015 related to proceeds from a $2.0 million convertible promissory note and a $0.7 million promissory note payable to a certain shareholder, offset by a $0.3 million loan payment to Sopharma, AD.

Future Capital Requirements

As of December 31, 2016, Achieve had approximately $15,000 in cash and cash equivalents. Achieve expects its research and development expenses to substantially increase in connection with Achieve's ongoing activities, particularly as Achieve advances its product candidates in or towards clinical development.

Achieve's future capital requirements are difficult to forecast and will depend on many factors, including but not limited to:

- the initiation, timing and cost of Achieve's clinical trials for cytisine;
- the terms and timing of any strategic alliance, licensing and other arrangements that Achieve may establish;
- the number of regulatory programs Achieve pursues;
- the outcome, timing and cost of regulatory approvals;
- the cost and timing of hiring new employees to support Achieve's continued growth; and
- the costs involved in patent filing, prosecution, and enforcement.

Achieve believes that its cash and cash equivalents, along with OncoGenex paying, on behalf of Achieve, for transaction costs associated with the merger, are sufficient to fund its anticipated operating and capital requirements through, at a minimum, the middle of 2017 and the anticipated closing of the merger with OncoGenex.

Substantial doubt exists as to the ability of Achieve to continue as a going concern. Until Achieve can generate a sufficient amount of product revenue to finance its cash requirements, Achieve expects to finance its future cash needs primarily through the issuance of additional equity, including in connection with the contemplated merger, and potentially through additional borrowing and strategic alliances with partner companies. To the extent that Achieve raises additional capital through the issuance of additional equity or convertible debt securities, the ownership interest of Achieve's stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of existing stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting Achieve's ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If Achieve raises additional funds through marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties, Achieve may have to relinquish valuable rights to Achieve's territories, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to Achieve. If Achieve is unable to raise additional funds through equity or debt financings when needed, Achieve may be required to delay, limit, reduce or terminate its product development or commercialization efforts or grant rights to develop and market product candidates to third parties that Achieve would otherwise prefer to develop and market itself.

Promissory Notes

Since Achieve's inception, certain stockholders, including a stockholder who is also a director of Achieve, have contributed $2.8 million in company loans through a convertible promissory note and other shareholder promissory notes, each accruing interest at a rate of 3.5% annually. The notes mature and are payable upon demand one year from the date of issuance of the note. During 2015, the convertible note holder converted $2.0 million in principal into 4,500 shares of Achieve's common stock. As of December 31, 2016 and 2015, Achieve had shareholder loans in the principal amount of $0.8 million and $0.7 million outstanding and accrued interest payable of $37,000 and $11,000, respectively.

Off-Balance Sheet Arrangements

Achieve has not entered into any off-balance sheet arrangements and does not have any holdings in variable interest entities.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2014-09,*Revenue from Contracts with Customers*, or ASU No. 2014-09, an updated standard on revenue recognition. ASU No. 2014-09 provides enhancements to the quality and consistency of how revenue is reported by companies while also improving comparability in the financial statements of companies reporting using International Financial Reporting Standards or U.S. GAAP. The main purpose of the new standard is for companies to recognize revenue to depict the transfer of goods or services to customers in amounts that reflect the consideration to which a company expects to be entitled in exchange for those goods or services. The new standard also will result in enhanced disclosures about revenue, provide guidance for transactions that were not previously addressed comprehensively and improve guidance for multiple-element arrangements. In July 2015, the FASB voted to approve a one-year deferral of the effective date of ASU No. 2014-09, which will be effective for Achieve in the first quarter of fiscal year 2018 and may be applied on a full retrospective or modified retrospective approach. Achieve is currently evaluating the impact of implementation and transition approach of 2014-09 on its financial statements and related disclosures.

In March 2016, the FASB issued ASU No. 2016-08,*Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations*, or ASU No. 2016-08. The purpose of ASU No. 2016-08 is to clarify the implementation of guidance on principal versus agent considerations. For public entities, the amendments in ASU No. 2016-08 are effective for interim and annual reporting periods beginning after December 15, 2017. Achieve is currently evaluating the impact of ASU No. 2016-08 on its financial statements and related disclosures.

In November 2015, the FASB issued ASU No. 2015-17,*Balance Sheet Classification of Deferred Taxes*, or ASU No. 2015-17. ASU No. 2015-17 requires that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. ASU No. 2015-17 is effective for financial statements issued for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. Achieve currently does not believe the impact of adopting ASU No. 2014-15 will have a material impact on its financial statements and related disclosures.

In January 2016, the FASB issued ASU No. 2016-01,*Recognition and Measurement of Financial Assets and Financial Liabilities*, or ASU No. 2016-01. ASU No. 2016-01 requires equity investments to be measured at fair value with changes in fair value recognized in net income; simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment; eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet; requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes; requires an entity to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments; requires separate presentation of financial assets and financial liabilities by measurement category and form of financial assets on the balance sheet or the accompanying notes to the financial statements and clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets. ASU No. 2016-01 is effective for financial statements issued for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Achieve is currently evaluating the impact of ASU No. 2016-01 on its financial statements and related disclosures.

In February 2016, the FASB issued ASU No. 2016-02,*Leases (Topic 842)*, or ASU 2016-02, which supersedes FASB Accounting Standards Codification, or ASC, Topic 840, Leases (Topic 840) and provides principles for the recognition, measurement, presentation and disclosure of leases for both lessees and lessors. The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease, respectively. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than twelve months regardless of classification. Leases with a term of twelve months or less will be accounted for similar to existing guidance for operating leases. The standard is effective for annual and interim periods beginning after December 15, 2018, with early adoption permitted upon issuance. Achieve is currently evaluating the impact of ASU 2016-02 on its financial statements and related disclosures.

In April 2016, the FASB issued ASU No. 2016-10,*Revenue from Contracts with Customer*, or ASU No. 2016-10. The new guidance is an update to ASC 606 and provides clarity on: identifying performance obligations and licensing implementation. For public companies, ASU No. 2016-10 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2016. Achieve is currently evaluating the impact of ASU No. 2016-10 on its financial statements and related disclosures.

In June 2016, the FASB issued ASU No. 2016-13,*Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments*, or ASU 2016-13. ASU 2016-13 requires that expected credit losses relating to financial assets measured on an amortized cost basis and available-for-sale debt securities be recorded through an allowance for credit losses. ASU 2016-13 limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and also requires the reversal of previously recognized credit losses if fair value increases. The new standard will be effective for Achieve on January 1, 2020. Early adoption will be available on January 1, 2019. Achieve is currently evaluating the impact of ASU 2016-13 on its financial statements and related disclosures.

Recently Adopted Accounting Policies

In August 2014, the FASB issued ASU No. 2014-15,*Presentation of Financial Statements-Going Concern*, or ASU No. 2014-15, which defines management's responsibility to assess an entity's ability to continue as a going concern, and requires related footnote disclosures if there is substantial doubt about its ability to continue as a going concern. ASU No. 2014-15 is effective for Achieve for the fiscal year ending December 31, 2016, with early adoption permitted. The adoption of this standard by Achieve required additional disclosures in the financial statements regarding its ability to continue as a going concern.

In March 2016, the FASB issued ASU No. 2016-09,*Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*, or ASU No. 2016-09. The amendment is to simplify several aspects of the accounting for stock-based payment transactions including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The amendments in ASU No. 2016-09 are effective for interim and annual reporting periods beginning after December 15, 2016. The adoption of this standard did not have a significant impact on Achieve's financial position or results of operations.

MANAGEMENT FOLLOWING THE MERGER

Executive Officers and Directors of the Combined Company Following the First Merger

The OncoGenex board of directors is currently composed of six directors, each of which are elected at each annual stockholders meeting to hold office until the next annual meeting or until their successors are elected and have qualified. Pursuant to the Merger Agreement, all of the directors of OncoGenex who will not be continuing as directors of the combined company will resign at or prior to the effective time of the first merger. Neil Clendeninn, Jack Goldstein and David Smith are expected to resign.

Upon the consummation of the merger, the combined company's board of directors will initially consist of three directors designated by OncoGenex (two of whom are to be independent under the applicable SEC rules and the criteria established by The NASDAQ Stock Market LLC) and four directors designated by Achieve (two of whom are to be independent under the applicable SEC rules and the criteria established by The NASDAQ Stock Market LLC). OncoGenex is expected to designate three of its current directors: Scott Cormack, Stewart Parker and Martin Mattingly. Achieve is expected to designate Richard Stewart, Dr. Anthony Clarke and two other independent directors that have yet to be determined.

Following the merger, the management team of OncoGenex is expected to be composed of members of the management team of Achieve and OncoGenex. Scott Cormack, OncoGenex's Chief Executive Officer will resign. John Bencich, OncoGenex's Chief Financial Officer, and Cindy Jacobs, OncoGenex's Chief Medical Officer, will continue in the same positions at the combined company. Richard Stewart, Achieve's Chairman, will serve as Chief Executive Officer of the combined company and Anthony Clarke, Achieve's Chief Scientific Officer will serve as Chief Scientific Officer of the combined company. Ronald Martell, Achieve's former Chief Executive Officer, and Caroline Loewy, Achieve's former Chief Financial Officer, will not serve as directors, officers or in any other capacity of the combined company.

The following table lists the names, ages as of January 1, 2017 and positions of the individuals who are expected to serve as executive officers and directors of the combined company upon completion of the merger.

Name	Age	Position(s)
Executive Officers		
Richard Stewart	58	Chief Executive Officer and Director
John Bencich	39	Chief Financial Officer
Dr. Anthony Clarke	61	Chief Scientific Officer and Director
Dr. Cindy Jacobs	59	Chief Medical Officer
Non-Employee Directors		
Scott Cormack	51	Director
Martin Mattingly	59	Director
Stewart Parker	61	Director
To Be Determined		
To Be Determined		

Executive Officers

Richard Stewart. Mr. Stewart has served as Achieve's Chairman and as a director since Achieve was founded in May 2015. Mr. Stewart is expected to serve as the Chief Executive Officer and a director of the combined company. Mr. Stewart is also a founder and a director of Ricanto Limited, a pharmaceutical asset optimization company, since 2009. Mr. Stewart has been Chairman and Chief Executive Officer of Renown Pharma Limited, a central nervous system company focused on Parkinson's disease, since 2016. Prior to Achieve, Mr. Stewart was Chairman and Chief Executive Officer of Huxley Pharmaceuticals, Inc., a single purpose central nervous system company, during 2009, prior to Huxley Pharmaceuticals, Inc.'s acquisition by BioMarin Pharmaceutical Inc.

Mr. Stewart was Chief Executive Officer of Brabant Pharma Limited, a single purpose central nervous system company, from 2013 to 2014. He was a co-founder and Chief Executive Officer of Amarin Corporation plc, a central nervous system company focused on Parkinson's disease and Huntington's disease, from 2000 to 2007. Mr. Stewart was a co-founder and Chief Financial Officer, and later Chief Business Officer, of SkyePharma plc, a drug delivery company specializing in controlled release formulations, and held such positions from 1995 to 1998. Mr. Stewart holds a Bachelor of Science degree in Business Administration from the University of Bath.

Mr. Stewart's role as Achieve's Chairman, prior service on boards of directors, and extensive experience and innovations in the field of biotechnology enable him to bring a unique perspective to the board of directors. In addition, Mr. Stewart's accomplishments provide the combined company's board of directors with in-depth product and field knowledge.

John Bencich. Mr. Bencich has served as OncoGenex's Vice President and Chief Financial Officer since August 2014. Mr. Bencich is expected to continue to serve as the Chief Financial Officer of the combined company. Mr. Bencich joined OncoGenex from Integrated Diagnostics, Inc., a molecular diagnostics company, where he served as Chief Financial Officer from September 2012 to August 2014. Prior to joining Integrated Diagnostics, he served as Chief Financial Officer of Allozyne, Inc. since July, 2011. Mr. Bencich was an independent consultant from November 2010 until he joined Allozyne. He served as the Vice President, Chief Financial Officer and Treasurer of Trubion Pharmaceuticals, Inc., a biotechnology company, from November 2009 until its acquisition by Emergent BioSolutions Inc. in October 2010. Mr. Bencich served as Trubion's Senior Director of Finance and Accounting from May 2007 through November 2009. From September 2004 to April 2007, Mr. Bencich was an employee of Onyx Software Corporation, a software company, where he last served as Director of Finance and Corporate Controller. From 1999 to 2004, Mr. Bencich was an employee of Ernst & Young LLP, an international professional services firm, where he last served as a manager. Mr. Bencich received a B.A. in Accountancy from the University of San Diego and an M.B.A. from Seattle University. Mr. Bencich received his Certified Public Accountant Certification from the State of Washington and currently holds an active license.

Dr. Anthony Clarke. Dr. Clarke has served as Achieve's Chief Scientific Officer and as a member of Achieve's board of directors since 2015. Dr. Clarke is expected to serve as the Chief Scientific Officer and a director of the combined company. Dr. Clarke is a founder and director of Ricanto Limited since 2009. From 2016 to the present, Dr. Clarke has been Chief Scientific Officer of Renown Pharma Limited. Dr. Clarke was Chief Scientific Officer of Huxley Pharmaceuticals, Inc. during 2009, prior to Huxley Pharmaceuticals, Inc.'s acquisition by BioMarin Pharmaceutical Inc. Prior to Achieve, Dr. Clarke served as Chief Scientific Officer of Brabant Pharma Limited from 2013 to 2014. Dr. Clarke served as Company Secretary of Alexza UK Ltd. and as Vice President International Development Operations of Alexza Pharmaceuticals Inc., a pharmaceutical development company, holding both positions from 2008 to 2009. Dr. Clarke served as the Vice President, Clinical Research and Regulatory Affairs at Amarin Corporation from 2005 to 2008. In addition, Dr. Clarke was Senior Director, Clinical and Regulatory Affairs, of Cephalon Europe and as Senior Director, Worldwide Pain Management, of Cephalon, Inc. from 2000 to 2004. Dr. Clarke held a number of management roles in other pharmaceutical companies prior to 2000 as well as academic posts and honorary academic posts. Dr. Clarke holds a Bachelor's degree in Pharmacology from the University of Sunderland and a Ph.D. in psychopharmacology from the University of London. He was a Fellow of the Royal Statistical Society (UK) and is a current Fellow of the Royal Society of Medicine (UK).

Dr. Clarke is qualified to serve on the combined company's board of directors due to his years of experience in the biotechnology industry, which will enable him to contribute important strategic insights to the combined company's board of directors.

Cindy Jacobs, Ph.D., M.D. Dr. Jacobs has served as OncoGenex's Executive Vice President and Chief Medical Officer since August 2008, and had been Executive Vice President and Chief Medical Officer of OncoGenex Technologies Inc. from September 2005 to August 2008. Dr. Jacobs is expected to continue to serve as the Chief

Medical Officer of the combined company. From 1999 to July 2005, Dr. Jacobs served as Chief Medical Officer and Senior Vice President, Clinical Development of Corixa Corporation. Prior to 1999, Dr. Jacobs held Vice President, Clinical Research positions at two other biopharmaceutical companies. Dr. Jacobs received her Ph.D. degree in Veterinary Pathology/Microbiology from Washington State University and an M.D. degree from the University of Washington Medical School.

Non-Employee Directors

Scott Cormack. Mr. Cormack has been OncoGenex's President, Chief Executive Officer and a director since August 2008. He was a co-founder of OncoGenex Technologies Inc., which is OncoGenex's wholly owned subsidiary, and has been its President since May 2000, its Chief Executive Officer since February 2002 and a member of its Board of Directors since May 2000. Mr. Cormack is expected to serve as a director of the combined company. Mr. Cormack currently serves on the Board of Directors of the Prostate Centre's Translation Research Initiative for Accelerated Discovery and Development and the Board of Directors of the Prostate Centre at Vancouver General Hospital. Mr. Cormack served as interim President, Chief Executive Officer and Chairman of the Board of Directors of Salpep Biotechnology Inc., an asthma and inflammation biotechnology company, from 2000 to 2001 and on the Board of Directors of Aurinia Pharmaceuticals from 2012 to 2014. From 1998 to 2001, Mr. Cormack served as Vice President of Milestone Medica Corporation, a seed venture capital firm investing in life sciences opportunities. Mr. Cormack holds a B.S. degree from the University of Alberta.

Mr. Cormack is qualified to serve on the combined company's board of directors due to his extensive experience leading public life science companies and deep industry knowledge.

Martin Mattingly, Pharm.D. Dr. Mattingly has served as a director of OncoGenex since June 2010 and is expected to continue to serve as a director of the combined company. Since August 2012, Dr. Mattingly has served as a member of Tech Coast Angels, an angel investor group, and since December 2014 has served as a director of TRACON Pharmaceuticals, Inc. Previously, Dr. Mattingly served as the Chief Executive Officer of Trimeris, Inc., a biopharmaceutical company, from November 2007 until its merger with Synageva in November 2011. He also served on the Board of Directors of Trimeris, Inc. from November 2007 until November 2011. From 2005 to 2007, Dr. Mattingly was employed at Ambrx, Inc., a biopharmaceutical company, where he served as President and Chief Executive Officer. From 2003 to 2005, Dr. Mattingly served as Executive Vice President and Chief Operating Officer of CancerVax Corporation, a biotechnology company. From 1996 to 2003, he provided senior leadership in various management positions at Agouron Pharmaceuticals, Inc. and Pfizer, Inc., including serving as General Manager of the Agouron HIV division, Vice President, Product Development Group at Pfizer and Vice President, Global Marketing Planning at Pfizer. Dr. Mattingly holds a Pharm.D. degree from the University of Kentucky.

Dr. Mattingly is qualified to serve on the combined company's board of directors due to his executive leadership experience in late-stage clinical development, public company expertise, and commercialization and business development experience with pharmaceuticals and biologics.

Stewart Parker. Ms. Parker has served as a director of OncoGenex since March 2010 and is expected to continue to serve as a director of the combined company. Ms. Parker served as the Chief Executive Officer of the Infectious Disease Research Institute, or IDRI, a nonprofit research organization focused on the development of products for the diagnosis, prevention, and treatment of neglected diseases from March 2011 to January 2014. Prior to IDRI, Ms. Parker managed the formation of Targeted Genetics Corporation, a biotechnology company, as a wholly owned subsidiary of Immunex Corporation, a biotechnology company, and served as its President and Chief Executive Officer and as a director from its spinout from Immunex Corporation in 1992 to November 2008. She served in various capacities at Immunex Corporation from August 1981 through December 1991, most recently as Vice President, Corporate Development. Ms. Parker currently serves on the Board of Directors of Sangamo BioSciences since June, 2014. She served on the Board of Directors and the executive committee of BIO, the primary trade organization for the biotechnology industry. Ms. Parker has also served as a director of

Targeted Genetics Corporation from 1992 to November 2008 and Neose Technologies, Inc. from May 2005 to January 2009. Ms. Parker received her B.A. and M.B.A. degrees from the University of Washington.

Ms. Parker is qualified to serve on the combined company's board of directors due to her executive leadership experience in development-stage clinical development, public company expertise, and business development experience for pharmaceuticals and biologics.

Director Independence

The NASDAQ Stock Market listing standards listing standards require that the combined company's board of directors consist of a majority of independent directors, as determined under the applicable NASDAQ Stock Market listing standard.

The OncoGenex and Acheive boards of directors believe that each of Dr. Mattingly, Ms. Parker, and will qualify as an independent director following the consummation of the merger. Mr. Stewart, Dr. Clarke and M. Cormack are not expected to qualify as independent directors following the consummation of the merger. Each of the directors serving on the Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee of the combined company is also expected to be independent as defined under The NASDAQ Stock Market listing standards and applicable SEC rules.

Committees of the Board of Directors

The OncoGenex board of directors currently has, and after completion of the merger the combined company will continue to have, an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee.

Audit Committee

OncoGenex's Audit Committee is responsible for, among other things:

- reviewing the independence, qualifications, services, fees and performance of OncoGenex's independent registered public accounting firm;
- appointing, replacing and discharging OncoGenex's independent registered public accounting firm;
- pre-approving the professional services provided by OncoGenex's independent registered public accounting firm;
- reviewing the scope of the annual audit and reports and recommendations submitted by OncoGenex's independent registered public accounting firm; and
- reviewing OncoGenex's financial reporting and accounting policies, including any significant changes, with OncoGenex's management and OncoGenex's independent registered public accounting firm.

The Audit Committee of the combined company is expected to retain these duties and responsibilities following completion of the merger.

Achieve and OncoGenex believe that, after the completion of the merger, the composition of the Audit Committee will meet the requirements for independence under applicable requirements of the rules and regulations of The NASDAQ Stock Market LLC and the SEC.

Compensation Committee

OncoGenex's Compensation Committee reviews and recommends to the OncoGenex board of directors the compensation for OncoGenex's executive officers and its non-employee directors for their services as members of the OncoGenex board of directors.

The Compensation Committee of the combined company is expected to retain these duties and responsibilities following completion of the merger.

Achieve and OncoGenex believe that, after the completion of the merger, the composition of the Compensation Committee will meet the requirements for independence under applicable requirements of the rules and regulations of The NASDAQ Stock Market LLC and the SEC.

Nominating and Governance Committee

OncoGenex's Nominating and Governance Committee reviews, evaluates and proposes candidates for election to OncoGenex's board of directors, and considers any nominees properly recommended by stockholders. The Nominating and Governance Committee promotes the proper constitution of OncoGenex's board of directors in order to meet its fiduciary obligations to its stockholders, and oversees the establishment of, and compliance with, appropriate governance standards.

The Nominating and Governance Committee of the combined company is expected to retain these duties and responsibilities following completion of the merger.

Achieve and OncoGenex believe that, after the completion of the merger, the composition of the Nominating and Governance Committee will meet the requirements for independence under applicable requirements of the rules and regulations of The NASDAQ Stock Market LLC and the SEC.

2016 OncoGenex Director Compensation

The following table summarizes all compensation paid to or earned by OncoGenex's non-employee directors as compensation for board service during the 2016 fiscal year.

Name	Fees Earned or Paid in Cash ($)	Option Awards ($)(1)(2)	Total ($)
Neil Clendeninn	60,000	14,012	74,012
Jack Goldstein	87,500	19,617	107,117
Martin Mattingly	57,500	14,012	71,512
Stewart Parker	60,000	14,012	74,012
David Smith	65,000	14,012	79,012

(1) The dollar amounts reflect the aggregate grant date fair value of equity awards granted within the fiscal year in accordance with the Financial Accounting Standards Board, or FASB, Accounting Standards Codification Topic 718 for stock-based compensation. These amounts do not correspond to the actual cash value that will be recognized by the directors when received. Assumptions used in the calculation of the amounts in this column are included in note 10 to OncoGenex's audited consolidated financial statements included in this proxy statement/prospectus/information statement. As of December 31, 2016, the following directors had the following number of options outstanding:

- Neil Clendeninn: 48,500 options, of which 26,000 were vested as of December 31, 2016.
- Jack Goldstein: 59,461 options, of which 27,961 were vested as of December 31, 2016.
- Martin Mattingly: 50,500 options, of which 28,000 were vested as of December 31, 2016.
- Stewart Parker: 50,461 options, of which 27,961 were vested as of December 31, 2016.
- David Smith: 50,500 options, of which 28,000 were vested as of December 31, 2016.

(2) These options were granted on May 26, 2016 under OncoGenex's 2010 Performance Incentive Plan and vest 100% on the earlier of the one-year anniversary of the date of grant or the day immediately prior to the 2017 Annual Meeting of Stockholders.

2016 Achieve Director Compensation

Achieve's non-employee directors during the year ended December 31, 2016 were not compensated for their service on the Achieve board of directors. During the year ended December 31, 2016, Ricanto Limited, a company of which Richard Stewart and Dr. Anthony Clarke are equityholders and officers, was entitled to $500,000 in consulting fees as compensation for services provided by Richard Stewart and Dr. Anthony Clarke. However, such amount was never paid to Ricanto Limited, and Ricanto Limited, in recognition of Achieve's low levels of operating cash and the relationship of Ricanto Limited's officers with Achieve, waived all of its rights to receive its consulting fees.

Achieve's Director Compensation Table has been omitted because no compensation was provided to Achieve's non-employee directors during the year ended December 31, 2016.

Upon completion of the merger, the combined company's board of directors intends to establish a compensation program for non-employee directors.

Compensation Committee Interlocks and Insider Participation

Composition of the Compensation Committee for the combined company has not yet been determined. Following completion of the merger, each member appointed to the Compensation Committee is expected to be an "outside" director as that term is defined in Section 162(m) of the Code, a "non-employee" director within the meaning of Rule 16b-3 of the rules promulgated under the Exchange Act and independent within the meaning of the independent director guidelines of The NASDAQ Stock Market LLC. None of the proposed combined company's executive officers serve as a member of the board of directors or compensation committee of any entity that has one or more executive officers who is proposed to serve on the combined company's board of directors or Compensation Committee following the merger.

2016 Achieve Executive Compensation

Historically, Achieve has had four executive officers: Richard Stewart, Executive Chairman; Ronald Martell, Chief Executive Officer; Caroline Loewy, Chief Financial Officer; and Dr. Anthony Clarke, Chief Scientific Officer. Mr. Martell and Ms. Loewy were parties to employment agreements with Achieve that provided for compensation for their services as executive officers, but their employment agreements terminated effective as of December 31, 2016. Mr. Stewart and Dr. Clarke are not parties to employment agreements with Achieve, but instead provide services to Achieve through Ricanto Limited pursuant to a consulting agreement between Achieve and Ricanto Limited. Each of Mr. Stewart, Mr. Martell, Ms. Loewy, and Dr. Clarke, in recognition of Achieve's low levels of operating cash and such persons' status as an Achieve stockholder, has historically waived all of his or her rights—and in the cases of Mr. Stewart and Dr. Clarke, all of Ricanto Limited's rights as well—to receive compensation pursuant to their employment or consulting agreements.

Omission of Certain Tables

Achieve's Summary Compensation Table, Grant of Plan-Based Awards Table, Outstanding Equity Awards at Fiscal Year-End Table and Option Exercises and Stock Vested Table have been omitted because (i) during the fiscal years ended December 31, 2016 and December 31, 2015, no compensation was awarded to, earned by, or paid to Mr. Stewart or Dr. Clarke; (ii) no grant of any award was made to Mr. Stewart or Dr. Clarke under any plan during the fiscal year ended December 31, 2016; (iii) as of December 31, 2016, neither Mr. Stewart nor Dr. Clarke held any unexercised options, stock that has not vested or equity incentive plan awards; and

(iv) during the fiscal year ended December 31, 2016 there were no exercises of stock options, SARs or similar instruments and no vesting of stock, restricted stock units or similar instruments, in each case for or by Mr. Stewart or Dr. Clarke.

Pension Benefits/Nonqualified Deferred Compensation

Achieve does not have any plan that provides for payments or other benefits at, following, or in connection with retirement. It also does not have a plan that provides for the deferral of compensation for any employee.

Potential Payments Upon Termination/Change of Control

Mr. Stewart and Dr. Clarke are not entitled to receive any payments at, following, or in connection with any termination, change in control of Achieve, or change in such individual's responsibilities. However, Mr. Martell and Ms. Loewy are expected to receive certain payments in connection with their separation, which have not yet been determined.

2016 OncoGenex Executive Compensation

Executive Compensation Discussion and Analysis

OncoGenex's executive compensation program is designed to:

- attract and retain the most talented and dedicated executives possible;
- align its executive officers' incentives with stockholder value creation;
- correlate annual and long-term cash and stock incentives to achievement of measurable strategic performance objectives; and
- increase the percentage of executive compensation that is performance-based, and therefore at-risk, as an executive's experience, unique expertise and criticality of role increases.

To achieve these objectives OncoGenex has established compensation programs that tie a substantial portion of each executive's overall compensation to key strategic operational and financial goals such as the development of its product candidates, the establishment and maintenance of key strategic relationships, and the identification and advancement of additional product candidates. The Compensation Committee's approach emphasizes the setting of compensation at levels the committee believes are competitive with executives in other companies of similar size and stage of development operating in the biotechnology industry while taking into account OncoGenex's relative performance and its own strategic goals. OncoGenex's annual cash incentives and a portion of its longer-term incentives, such as its performance-based equity awards, are tied to its achievement of corporate operating goals. OncoGenex believes that successful execution against goals is the best way to enhance long-term stockholder value. Overall, its pay programs attempt to balance cash and equity to reward both short- and long-term performance.

Compensation Determination Process and the Role of Executive Officers in Compensation Decisions

The compensation review process is conducted in January in order to facilitate the comparison of corporate objectives against OncoGenex's full year performance. The Chief Executive Officer provides a presentation regarding its current compensation philosophies and programs to the Compensation Committee with the remaining members of the Board of Directors invited to attend. Typically, the Chief Executive Officer produces an executive compensation review for each Named Executive Officer, excluding the Chief Executive Officer, which includes recommendations for:

- base salary for the upcoming year;
- year-end cash incentive award, if any, under the terms of its discretionary short-term incentive awards program, or STIP, based on the achievement of corporate objectives; and
- annual equity awards of stock options and restricted stock units, or RSUs.

The Chief Executive Officer may also recommend other changes to an executive's compensation package, such as changes in the executive's eligibility for cash incentives. The Compensation Committee evaluates and, if determined appropriate or advisable, revises the Chief Executive Officer's recommendations and forwards its own recommendations to the Board of Directors, which may in turn suggest further revisions.

The Compensation Committee also meets in executive sessions without the Chief Executive Officer present to discuss the Chief Executive Officer's compensation, including base salary, year-end cash incentive award and annual stock option grant, and to make recommendations regarding such compensation to the Board of Directors. The Board of Directors considers the Compensation Committee's recommendations with respect to the Chief Executive Officer in executive session and provides feedback to the Compensation Committee. With the exception of executive sessions of the Compensation Committee and the Board of Directors to review, recommend and approve the Chief Executive Officer's compensation, the Chief Executive Officer is generally present at all deliberations of the Compensation Committee and the Board of Directors related to executive compensation.

During the first meeting following the completion of the fiscal year, the Chief Executive Officer recommends to the Compensation Committee the corporate objectives to be adopted under the terms of the STIP for the upcoming year. The Compensation Committee evaluates and may revise the Chief Executive Officer's recommendations and forwards its own recommendations to the Board of Directors, which may in turn suggest further revisions.

The Compensation Committee makes final determinations with respect to the award of cash incentives under the STIP and all annual equity awards. The Board of Directors, after reviewing the recommendations of the Compensation Committee, makes final determinations with respect to the cash incentives to the executive officers and the Chief Executive Officer, as well as the corporate objectives under the STIP. From time to time at the request of the Compensation Committee, members of OncoGenex's executive management team, including representatives from finance, legal and human resources, may provide information to the Compensation Committee and attend all or a portion of certain of the committee's meetings.

Benchmarking of Executive Compensation

OncoGenex participates annually in Radford's Compensation Survey and in return it receives the Compensation Survey results. Additionally, every year or at the direction of the Compensation Committee, OncoGenex management reviews peer group data compiled by Radford to determine whether total direct compensation and each component of the compensation package are approximately equal to the targeted 50th percentile for executive officer compensation of its peer group. The peer group companies are amended from time to time at the discretion of the Board of Directors and based on Radford recommendations. In 2015, OncoGenex's Compensation Committee engaged Radford to review compensation levels and executive agreements of its executive officers and to provide a report summarizing relevant benchmark data and making recommendations as to executive compensation levels. Radford's review included benchmarking the base salary, target total cash (base salary plus target cash incentives) and long-term incentives of OncoGenex executives with industry-appropriate peers based on the following characteristics:

- pre-commercial biotechnology/biopharmaceutical companies at a similar stage of drug development (Phase II to Phase III)
- companies located in biotechnology hub markets (Seattle, San Francisco, San Diego and Boston) to reflect the recruiting market for executive talent;
- companies with market values generally under $150 million; and
- companies with generally less than 100 employees.

In addition, Radford also examined research and development spending, cash on-hand and total shareholder return over one and three years as additional metrics to help determine appropriate peer companies.

The peer group recommended by Radford in 2015 and approved by the Compensation Committee and the Board of Directors for the evaluation of compensation levels for the 2016 fiscal year, after a comprehensive review, analysis and discussion regarding Radford's recommendations, is comprised of the companies set forth below.

Actinium Pharmaceuticals, Inc.
Anthera Pharmaceuticals, Inc.
ArQule Inc.
Aveo Pharmaceuticals, Inc.
BIND Therapeutics, Inc.
Celator Pharmaceuticals, Inc.
Celsion Corporation
Conatus Pharmaceuticals Inc.
Cyclacel Pharmaceuticals, Inc.
GTx, Inc.
Kalobios Pharmaceuticals, Inc.
MediciNova, Inc.
MEI Pharma, Inc.
Onconova Therapeutics, Inc.
Oncothyreon Inc.
OXiGENE, Inc.
Rexahn Pharmaceuticals, Inc.
Sunesis Pharmaceuticals, Inc.
Targacept, Inc.
TetraLogic Pharmaceuticals Corporation
Threshold Pharmaceuticals, Inc.
Vical Incorporated

Radford reports directly to OncoGenex's Compensation Committee and does not provide any services to it other than the services provided to the Compensation Committee and the preparation and delivery of their compensation survey, for which OncoGenex pays a nominal fee. Its Compensation Committee believes that Radford does not have any conflicts of interest in advising the Compensation Committee under applicable SEC or NASDAQ rules.

Benchmarking in the Context of OncoGenex's Other Executive Compensation Principles

In establishing executive compensation, the Compensation Committee focuses on a range around the 50th percentile of peer group benchmarking for each of base salary, target total cash (base salary plus target cash incentives) and long-term incentives for each similarly situated executive, which the Compensation Committee believes provides the tools to allow a company of OncoGenex's size to attract, compete for and retain the type of executives necessary for it to achieve its goals but conserve its cash and equity as much as possible.

The Compensation Committee realizes, however, that using a peer benchmark is neither the only means for gathering and validating market data nor the only criteria for establishing executive pay. In instances where an executive officer is uniquely critical to OncoGenex's success, the Compensation Committee may provide compensation in excess of the benchmark. Upward or downward variations for base salary and long-term incentives may also occur as a result of the individual's experience level, the balance of the individual's different elements of compensation, market factors and other strategic considerations, which OncoGenex refers to below as compensation factors. Additional market surveys, such as the Radford Global Life Sciences Survey, which reports compensation practices of a broad range of life science companies, are also utilized in determining market competitive compensation. The Compensation Committee believes that, given the competitiveness of OncoGenex's industry and its company culture, its base compensation, cash incentives and equity programs are flexible, reward the achievement of clearly defined corporate goals and are generally sufficient to retain its existing executive officers and to hire new executive officers when necessary.

Elements of Executive Compensation

OncoGenex has designed and implemented compensation policies that have historically allowed it to recruit both in its geographic areas of operation, which are Seattle, Washington and Vancouver, British Columbia, and other areas. It seeks to implement and utilize compensation policies that balance fixed and variable pay costs for a long-term, sustainable approach to talent acquisition and retention. OncoGenex's executive compensation consists of base salary, cash incentives and stock option and RSU grants, each of which is discussed in detail below.

Base Salary

OncoGenex provides an annual salary based on comparable market data for level of responsibility, expertise, skills, knowledge, experience, its unique organizational requirements and desire to maintain internal equity. When establishing executive compensation for 2016, the Compensation Committee focused on the respective peer group market survey as well as the Radford Global Life Sciences Survey for base salaries and incentive compensation. The executive base salary program targets a range around the 50th percentile of salaries for executives with the requisite skills in similar positions with similar responsibilities at comparable companies. In reviewing base salaries annually, the Compensation Committee also considers the role, overall value and contribution each executive makes to the achievement of OncoGenex's objectives. Executives may be compensated below or above that range based on the compensation factors described above. The Compensation Committee reviews base salaries in the first quarter of each year and may make adjustments from time to time to realign salaries with market levels after taking into account the compensation factors.

Cash Incentives

The STIP provides an annual opportunity for OncoGenex's Named Executive Officers to receive a discretionary cash bonus (stated as a percentage of each officer's salary) based on performance related to corporate objectives established by the Board of Directors. The STIP, when combined with each executive's base salary, is designed to provide total target cash compensation within a range around the 50th percentile of OncoGenex's peer group, subject to adjustment for the compensation factors described above. For any given year, these objectives may relate to operational, strategic or financial factors such as developing its product candidates, establishing and maintaining key strategic relationships, raising or maintaining certain levels of capital, improving its results of operations or increasing the price per share of OncoGenex common stock. The Compensation Committee alone determines achievement level of corporate objectives as it relates to incentive compensation for executive officers. If corporate objectives are not achieved at a 100% level, the Compensation Committee may determine that the corporate objectives were not achieved or, in its sole discretion, may determine that such objectives were partially achieved. The Compensation Committee may award bonuses based on the foregoing determinations or, after considering market conditions, OncoGenex's financial position or other factors, the Compensation Committee may, in its sole discretion, determine not to award any bonuses or to award bonuses at less than maximum eligibility. Cash bonuses paid do not exceed the maximum eligibility amount provided for under the table "Fiscal 2016 Grants of Plan-Based Awards".

Equity Awards

OncoGenex's 2010 Performance Incentive Plan provides alternative forms of long-term incentives for its executive officers, including stock options with time and performance-based vesting, which require the market value of its common stock to increase before they are valuable. It does not use a targeted split of cash and equity when setting compensation for its executive officers.

The number of stock options granted is discretionary, but is based on OncoGenex's benchmarking principles described above. The value earned on any grant varies with the stock price over the option term. In large part due to the length of product development cycles, it is critical for its business to align the interests of executive officers and stockholders, and to retain executive officers by means of what OncoGenex hopes will be long-term wealth creation in the value of their stock options, which have vesting provisions that encourage continued employment. It elects to use stock options as a portion of its long-term equity incentive vehicle. Stock option grants are made at the commencement of employment, may be made annually and, occasionally, may be made following a significant change in job responsibilities or to meet other special objectives, including strategic goals and retention. Additionally, annual stock option grants typically occur the later of the filing of its annual report on Form 10-K for the most recently completed year, or the first trading day in which OncoGenex is not in a blackout period, and are targeted around the 50th percentile of its peer group (in terms of market value), subject to adjustment for the compensation factors described above and the availability of equity under its equity-based

compensation plans. OncoGenex expects to continue to use stock options as a long-term incentive vehicle because:

- stock options align the interests of executives with those of the stockholders, support a pay-for-performance culture, foster employee stock ownership and focus the management team on increasing value for its stockholders;
- stock options help to provide a balance to the overall executive compensation program as base salary and OncoGenex's cash incentive compensation program focus on nearer-term achievements, while the grant and vesting of stock options is intended to focus executive efforts towards increasing stockholder value over the longer term;
- the vesting period of stock options encourages executive retention as long as the options remain in the money; and
- OncoGenex believes the use of stock options assists it in making its compensation package attractive to current and potential executive candidates, while conserving cash.

Stock Ownership Guidelines

Although stock option grants encourage equity ownership, OncoGenex currently does not require its directors or executive officers to own a particular number of shares of its common stock. The Compensation Committee believes that stock, option and RSU holdings among OncoGenex's directors and executive officers are sufficient at this time to align this group's interests with those of its stockholders.

Perquisites

In 2016, OncoGenex's executive officers located in Canada participated in the same group insurance and employee benefit plans as its other salaried employees in Canada and its executive officers located in the United States participate in the same group insurance and employee benefit plans as its other salaried employees in the United States. Tax preparation services are paid for executive officers who owe additional tax liabilities incurred by working in non-resident countries. At this time, OncoGenex does not provide other special benefits or other perquisites to its executive officers.

2016 Officer Compensation

Salary

Scott Cormack is Chief Executive Officer and President of OncoGenex. With respect to determining Mr. Cormack's base salary for the 2016 fiscal year, the Compensation Committee considered his leadership in helping to develop the company's product candidates and set the company's strategic goals. The Compensation Committee also considered the fact that the AFFINITY trial did not meet its survival endpoint in a prospectively defined subpopulation of patients with poor prognosis, and that the final survival results for both the Phase 3 AFFINITY and the ENSPIRIT trials were expected to occur in 2016. It also conducted a comprehensive review, analysis and discussion of the salaries of executives as reported by Radford Executive Compensation Report in 2015. Based on these considerations, OncoGenex's Compensation Committee to leave Mr. Cormack's base salary for 2016 unchanged at US$541,383, which is at the 75th percentile of its peer company survey from 2015.

Dr. Cindy Jacobs is Executive Vice President and Chief Medical Officer of OncoGenex. In determining her base salary for 2016, the Compensation Committee considered Dr. Jacobs' important role in furthering the development of OncoGenex's clinical assets and extensive experience in obtaining U.S. Food and Drug Administration approval for oncology product candidates, as well as her instrumental role in partnering, alliance management and strategic discussions. The Compensation Committee also considered the fact that the AFFINITY trial did not meet its survival endpoint in a prospectively defined subpopulation of patients with poor

prognosis, and that the final survival results for both the Phase 3 AFFINITY and the ENSPIRIT trials were expected to occur in 2016. It also conducted a comprehensive review, analysis and discussion of the salaries of executives as reported by Radford in 2015. Based on these considerations, OncoGenex's Compensation Committee decided to leave Dr. Jacobs' base salary for 2016 unchanged at $413,225, which is at the 75th percentile of its peer company survey from 2015.

John Bencich is Vice President and Chief Financial Officer of OncoGenex. In determining Mr. Bencich's base salary for 2016, the Compensation Committee took into account his financial and accounting background and his corporate development expertise. The Compensation Committee also considered the fact that the AFFINITY trial did not meet its survival endpoint in a prospectively defined subpopulation of patients with poor prognosis, and further that the final survival results for both the Phase 3 AFFINITY and the ENSPIRIT trials were expected to occur in 2016. It also conducted a comprehensive review, analysis and discussion of the salaries of executives as reported by Radford in 2015. Based on these considerations, OncoGenex's Compensation Committee decided to leave Mr. Bencich's base salary unchanged for 2016 at $307,500, which is at the 50th percentile of its peer company survey from 2015.

Cash Incentives

In accordance with the Compensation Committee's goal to target compensation around the 50th percentile of OncoGenex's peer group as described further in the section entitled "Benchmarking of Executive Compensation" and based on a comprehensive review, analysis and discussion of the Radford report, each Named Executive Officer's bonus potential for 2016, was as follows:

Executive Officer	Short-Term Incentive Award Eligibility
Scott Cormack, Chief Executive Officer and President	55% of salary
Cindy Jacobs, Chief Medical Officer and Executive Vice President	40% of salary
John Bencich, Vice President and Chief Financial Officer	40% of salary

In the first quarter of 2016, the Board of Directors adopted the following 2016 corporate objectives under the STIP:

Corporate Objectives	Weighting
Optimize Custirsen's potential value by facilitating timely phase 3 data analysis and release	35%
Optimize Apatorsen's potential value by facilitating timely phase 2 data analysis and release and defining a bladder cancer development strategy	30%
Continuously assess strategic alternatives to support or accelerate the corporate mission	35%

The Board of Directors selected these particular corporate objectives based on its judgment that they represented areas over which the Named Executive Officers have significant operational control and on which the Board of Directors believed they should focus to move OncoGenex's strategic plan forward and enhance stockholder value during 2016. The total weighting of corporate objectives under the 2016 STIP was a target of 100%.

Performance Against 2016 Corporate Objectives

Notwithstanding that the executive officers facilitated timely phase 3 data analysis and release related to the custirsen clinical trials, as well as phase 2 data analysis and release related to the apatorsen clinical trials, both the AFFINTIY and ENSPIRIT clinical trials did not meet their primary endpoint of extending survival with

statistical significance. Further, while a merger agreement was announced in January 2017, it was not completed in 2016. Accordingly, the Compensation Committee exercised its discretion and determined not to award any bonuses for performance of the 2016 corporate objectives.

Long-Term Incentive Awards

Stock option grants are discretionary based on the Compensation Committee's analysis of employee achievement of company-wide and individual objectives and OncoGenex's benchmarking principles. The Compensation Committee determined to award each Named Executive Officer non-qualified stock options to acquire shares of OncoGenex common stock pursuant to the terms and conditions of the 2010 Performance Incentive Plan. In each case, the Compensation Committee considered and evaluated the Radford report, the compensation factors described above, OncoGenex's stock price and the amount of equity available for grant under its 2010 Performance Incentive Plan.

The number of stock options granted was calculated using an option grant dollar value (based on a Black-Scholes model) and was compared against the percentage of total equity ownership in order to ensure that the recommendations were within the benchmarks described below. The options were performance-based with 50% of the shares vesting upon the achievement by December 31, 2016 of the earlier to occur of (i) positive results from either the AFFINITY or ENSPIRIT trials, or (ii) consummation of a change in control. If one of the milestones were met, the remaining 50% would vest monthly over two years. Each option was granted with a ten-year term and an exercise price equal to the closing price of OncoGenex common stock on NASDAQ on the date of grant. As no milestones were achieved by December 31, 2016, the options were cancelled.

The Compensation Committee determined not to grant RSUs or establish performance RSUs for 2016 on the basis that it would not provide appropriate incentive for the material milestones expected to occur in 2016.

Other Policies and Considerations

Internal Pay Equity

The Compensation Committee reviewed the 2015 Radford report on compensation and concluded that total compensation for a company's chief executive officer is generally higher than the total compensation for either its chief financial officer or chief medical officer, and that the total compensation of the chief medical officer is generally higher than the total compensation of the chief financial officer. The relative total compensation for OncoGenex's executive officers for 2016 followed the same pattern observed in the Radford report, with its Chief Executive Officer receiving the highest total compensation, followed by its Chief Medical Officer and then its Vice President and Chief Financial Officer. OncoGenex's ordinal pay ranking is consistent with comparable companies, and as each component of compensation for each executive officer is determined in relation to the 50th to 75th percentile of officers holding positions having similar responsibilities at comparable companies, the Compensation Committee believes that relative compensation among OncoGenex's executive officers is appropriate and consistent with maintaining internal pay equity.

Relationship Between Compensation Elements

Each element of executive officer compensation was determined with reference to the 50th to 75th percentile of the same element paid to executive officers holding the similar position at comparable companies. Therefore, no objective formula was utilized when determining the relative proportion of salary, cash incentive or equity awards relative to each other or to total compensation.

Employment Agreements and Termination Benefits

The employment agreement for each executive officer contains provisions related to termination and change of control. When establishing the termination and change of control provisions of the employment agreements, the

Compensation Committee and the Board of Directors considered the Radford report, which provided recommendations to the Compensation Committee regarding the termination and change of control provisions for each executive officer based on publicly available information regarding the practices of OncoGenex's peer group, policy statements made by significant investor groups and an analysis of current market trends. OncoGenex provides change in control protections to its officers to alleviate concerns regarding the possible occurrence of such a transaction, allowing them to focus their attention on its business. In addition, these protections encourage executives to remain with OncoGenex during the threat or negotiation of a change in control transaction, which preserves its value and the potential benefit to be received by its stockholders in the transaction. The specific terms of the termination and change of control arrangements, as well as an estimate of the compensation that would have been payable had they been triggered as of the end of 2016, are described in detail in the section below entitled "Potential Payments Upon Termination/Change of Control—Potential Costs of Termination Payments."

2016 Executive Compensation

During the 2016 fiscal year, OncoGenex's Named Executive Officers and their respective positions were as follows: Scott Cormack, Chief Executive Officer, President, Treasurer and Secretary; Cindy Jacobs, Ph.D., M.D., Executive Vice President and Chief Medical Officer; and John Bencich, Vice President and Chief Financial Officer. Mr. Cormack, Dr. Jacobs and Mr. Bencich are referred to herein as OncoGenex's Named Executive Officers. Mr. Cormack is expected to resign as the Chief Executive Officer immediately prior to the consummation of the merger, but is expected to continue as a director of the combined company. Dr. Jacobs and Mr. Bencich are expected to continue as the Chief Medical Officer and Chief Financial Officer, respectively, of the combined company.

Summary Compensation Table

The following table sets forth information regarding the compensation of OncoGenex's Named Executive Officers for each of the fiscal years ended December 31, 2016, 2015 and 2014. The components of the compensation reported in the Summary Compensation Table are described below. Additional information on the components of the total compensation package, including a discussion of the proportion of each element to total compensation, is discussed in "Management Following the Merger—2016 OncoGenex Executive Compensation."

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)(1)	Option Awards ($)(1)	Non-Equity Incentive Plan Compensation ($)	Total ($)
Scott Cormack	2016	541,383(2)	—	—	155,202	—	696,585
President and Chief Executive	2015	541,383(3)	—	69,750	79,473	148,890	839,496
Officer	2014	497,153(4)	—	655,320	410,321	156,324	1,719,118
Cindy Jacobs	2016	413,225	—	—	69,840	—	483,065
Executive Vice President and	2015	413,225	—	34,875	39,737	82,650	570,487
Chief Medical Officer	2014	413,225	—	348,325	205,161	86,777	1,053,488
John Bencich	2016	307,500	—	—	58,200	—	365,700
Vice President and Chief	2015	307,500	—	23,250	26,491	53,820	411,061
Financial Officer	2014	118,269(5)	20,000	63,400	93,328	18,512	313,509

(1) The dollar amounts in this column reflect the aggregate grant date fair value of equity awards granted during the fiscal year in accordance with FASB Accounting Standards Codification Topic 718 for stock-based compensation. For performance-based RSUs awarded in 2014, the dollar amounts also reflect the value at the grant date based upon the probable outcome of such conditions. These amounts do not correspond to the actual cash value that will be recognized by each of the Named Executive Officers when received. For a

discussion of the assumptions and methodologies used to value the awards reported in this column, see note 10 to OncoGenex's audited consolidated financial statements, which are included in this proxy statement/prospectus/information statement. During 2014, 32,000 and 20,000, performance RSUs were forfeited by Mr. Cormack and Dr. Jacobs, respectively, as the SYNERGY trial did not meet its primary endpoint. In 2016, the 2016 options awards included in this column were cancelled for each of Mr. Cormack, Dr. Jacobs and Mr. Bencich. These options vested upon either the positive results from the AFFINITY or ENSPIRIT trials, or the consummation of a change in control by December 31, 2016. Neither of these milestones were achieved, and therefore, all of the options granted to Mr. Cormack, Dr. Jacobs and Mr. Bencich in 2016 were cancelled. Additionally, in 2016, 8,000 and 5,000 performance RSUs were forfeited by Mr. Cormack and Dr. Jacobs, respectively, as the AFFINITY trial did not meet its primary endpoint.

(2) From January 1, 2016 to June 15, 2016, Mr. Cormack's salary was paid as to 25% in Canadian dollars of CDN$83,733 and 75% in U.S. dollars of $186,100. From June 16, 2016 to December 31, 2016, Mr. Cormack's salary was paid as to 50% in Canadian dollars of CDN$192,046 and 50% in U.S. dollars of $146,624. The portion paid in Canadian dollars was converted using the monthly average noon foreign exchange rate from the prior month for the current payment date, which resulted in an average exchange rate of US$1.00 = CDN$1.3216.

(3) For 2015, Mr. Cormack's salary was paid as to 25% in Canadian dollars of CDN$171,720 and 75% in U.S. dollars of $406,037. The portion paid in Canadian dollars was converted using the noon spot foreign exchange rate at each payment date, which resulted in an average exchange rate of US$1.00 = CDN$1.2764.

(4) For fiscal year 2014, Mr. Cormack's salary was paid as to 25% in Canadian dollars of CDN$138,052 and 75% in U.S. dollars of $372,161. The portion paid in Canadian dollars was converted using the 2014 average annual foreign exchange rate of US$1.00 = CDN$1.1045.

(5) Reflects Mr. Bencich's salary from the commencement of his employment on August 11, 2014 through December 31, 2014

Fiscal 2016 Grants of Plan-Based Awards

The following table provides information related to grants of plan-based awards to OncoGenex's Named Executive Officers during the 2016 fiscal year.

Name	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards Target(1) ($)	All Other Option Awards: # of Securities Underlying Options(2)	Exercise or Base Price of Option Awards ($/Sh)	Grant Date Fair Value of Stock and Option Awards (3)($)
Scott Cormack	3/14/2016	297,760	300,000	0.85	155,202
Cindy Jacobs	3/14/2016	165,290	135,000	0.85	69,840
John Bencich	3/14/2016	123,000	112,500	0.85	58,200

(1) OncoGenex's Compensation Committee exercised its discretion and determined not to award any non-equity bonuses for its 2016 performance goals. For a description of the performance-based vesting criteria associated with these awards, see "Management Following the Merger—2016 OncoGenex Executive Compensation."

(2) The amounts shown in this column represent stock options granted under OncoGenex's 2010 Performance Incentive Plan, which have subsequently been cancelled as none of the performance milestones were achieved by December 31, 2016.

(3) Amounts represent the grant date fair value of stock option awards measured in accordance with the guidance in FASB ASC Topic 718. These amounts do not correspond to the actual cash value that will be recognized by each of the Named Executive Officers when received. For a discussion of the assumptions and methodologies used to value the awards reported in this column, see note 10 to OncoGenex's audited consolidated financial statements, which are included in this proxy statement/prospectus/information statement.

Outstanding Equity Awards at Fiscal Year-End

The following table provides information regarding the outstanding equity awards held by OncoGenex's Named Executive Officers as of December 31, 2016.

	OPTION AWARDS				STOCK AWARDS			
Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights that Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights that Have Not Vested ($)	Number of Shares or Units or Other Rights that Have Not Vested(#)	Market Value of Shares or Units or Other Rights that Have Not Vested ($)
Scott Cormack	25,000	—	22.28	12/31/19(1)				
President and Chief Executive Officer	40,000	—	15.97	12/14/20(2)				
	37,500	—	13.00	05/08/22(3)				
	36,719	781	11.95	03/12/23(4)				
	36,454	13,546	11.79	03/14/24(5)				
	35,937	39,063	1.86	05/19/25(6)				
							4,687(7)	56,010
							12,500(8)	147,375
							18,750(9)	66,563
							28,125(10)	52,313
Cindy Jacobs	12,000	—	22.28	12/31/19(1)				
Executive Vice President and Chief	20,000	—	15.97	12/14/20(2)				
Medical Officer	15,000	—	13.00	05/08/22(3)				
	19,583	417	11.95	03/12/23(4)				
	18,227	6,773	11.79	03/14/24(5)				
	17,969	19,531	1.86	05/19/25(6)				
							2,500(7)	29,875
							6,250(8)	73,688
							10,000(9)	35,500
							14,062(10)	26,155
John Bencich	23,333	16,667	3.17	08/12/24(11)				
Vice President and Chief Financial	11,979	13,021	1.86	05/19/25(6)				
Officer							10,000(12)	31,700
							9,375(10)	17,438

(1) These stock options were granted under the 2007 Performance Incentive Plan and were fully vested on December 31, 2013.
(2) These stock options were granted under the 2010 Performance Incentive Plan and were fully vested on December 31, 2014.
(3) These stock options were granted under the 2010 Performance Incentive Plan and were fully vested on December 31, 2016.
(4) These stock options were granted under the 2010 Performance Incentive Plan and vest monthly over a 48-month period beginning January 1, 2013.
(5) These stock options were granted under the 2010 Performance Incentive Plan and vest monthly over a 48-month period beginning January 1, 2014.
(6) These stock options were granted under the 2010 Performance Incentive Plan and vest monthly over a 48-month period beginning January 1, 2015.
(7) These RSUs were granted under the 2010 Performance Incentive Plan and vest annually over four years beginning January 1, 2013.
(8) These RSUs were granted under the 2010 Performance Incentive Plan and vest annually over four years beginning January 1, 2014.
(9) These RSUs were granted under the 2010 Performance Incentive Plan and vest annually over four years beginning June 12, 2014.

(10) These RSUs were granted under the 2010 Performance Incentive Plan and vest annually over four years beginning January 1, 2015.
(11) These stock options were granted under the 2010 Performance Incentive Plan and vest monthly over a 48-month period beginning August 12, 2014.
(12) These RSUs were granted under the 2010 Performance Incentive Plan and vest annually over four years beginning August 12, 2014.

Option Exercises and Stock Vested

The following table provides information related to the vesting of RSUs held by the Named Executive Officers during the 2016 fiscal year.

	Stock Awards	
Name	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($)
Scott Cormack, President and Chief Executive Officer	12,967(1)	10,503.28
	4,519(2)	4,880.52
Cindy Jacobs, Executive Vice President and Chief Medical Officer	8,934(1)	7,236.53
	3,563(2)	3,848.04
John Bencich, Vice President Chief Financial Officer	2,291(1)	1,855.71
	3,620(3)	1,991.00

(1) These RSUs were granted under the 2010 Performance Incentive Plan and vested on March 14, 2016.
(2) These RSUs were granted under the 2010 Performance Incentive Plan and vested on June 12, 2015.
(3) These RSUs were granted under the 2010 Performance Incentive Plan and vested on August 18, 2015.

Pension Benefits/Nonqualified Deferred Compensation

OncoGenex does not have any plan that provides for payments or other benefits at, following, or in connection with retirement. It also does not have a plan that provides for the deferral of compensation for any employee.

Potential Payments Upon Termination/Change of Control

Change of Control Under OncoGenex's Equity Compensation Plans

The following discussion sets forth the change of control provisions provided for in OncoGenex's various equity compensation plans.

2007 Performance Incentive Plan

Under the 2007 Performance Incentive Plan, or the 2007 Plan, the administrator has the discretion to provide in each award agreement the terms and conditions with respect to a change of control that relate to (1) the vesting of an award and (2) the assumption of an award or issuance of comparable securities under an incentive program. If the terms of an option agreement provide for accelerated vesting in the event of a change of control, or to the extent that an option is vested and not yet exercised, the administrator may provide for the purchase or exchange of each option for an amount of cash or other property. Outstanding options shall terminate and cease to be exercisable upon a change of control except to the extent that the options are assumed by the successor entity, or parent of the successor entity, pursuant to the terms of the change of control transaction.

As used in the 2007 Plan, the term "change of control" means the occurrence of any of the following:

- acquisitions of OncoGenex's securities possessing more than 50% of the total combined voting power of all of its outstanding securities;

- a merger or consolidation with any other entity, whether or not OncoGenex is the surviving entity in such transaction, except for a transaction in which the holders of its outstanding voting securities immediately prior to such merger or consolidation hold, as a result of holding its securities prior to such transaction, in the aggregate, securities possessing more than 50% of the total combined voting power of all of its outstanding voting securities or the voting securities of the surviving entity, or the parent of the surviving entity, immediately after such merger or consolidation;
- the sale, transfer or other disposition, in one transaction or a series of related transactions, of all or substantially all of its assets; or
- the approval by OncoGenex stockholders of a plan or proposal for its liquidation or dissolution.

2010 Performance Incentive Plan

Under the 2010 Plan, the administrator has the discretion to provide in each award agreement the terms and conditions with respect to a change of control that relate to the vesting of an award and the assumption of an award or issuance of comparable securities under an incentive program. If the terms of an option agreement provide for accelerated vesting in the event of a change of control, or to the extent that an option is vested and not yet exercised, the administrator may provide for the purchase or exchange of each option for an amount of cash or other property. Outstanding options shall terminate and cease to be exercisable upon a change of control except to the extent that the options are assumed by the successor entity (or parent of the successor entity) pursuant to the terms of the change of control transaction. As used in the 2010 Plan, the term "change of control" means the occurrence of any of the following:

(1) acquisitions of OncoGenex's securities possessing more than 50% of the total combined voting power of all of its outstanding securities;

(2) a merger or consolidation with any other entity, whether or not OncoGenex is the surviving entity in such transaction, except for a transaction in which the holders of its outstanding voting securities immediately prior to such merger or consolidation hold, as a result of holding its securities prior to such transaction, in the aggregate, securities possessing more than 50% of the total combined voting power of all of its outstanding voting securities or the voting securities of the surviving entity, or the parent of the surviving entity, immediately after such merger or consolidation;

(3) the sale, transfer or other disposition, in one transaction or a series of related transactions, of all or substantially all of its assets; or

(4) the approval by the stockholders of a plan or proposal for its liquidation or dissolution.

Termination and Change of Control Provisions Under Employment Agreements

As of December 31, 2016, OncoGenex has employment agreements in place with each of its Named Executive Officers that provide for compensation upon the termination of their employment under certain circumstances, as described below.

Cormack Agreement

The agreement between OncoGenex, OncoGenex Technologies Inc. and Mr. Cormack, which is referred to as the Cormack Agreement, provides Mr. Cormack with termination benefits in the event Mr. Cormack is terminated without cause or for disability, or if Mr. Cormack resigns for good reason, or Good Reason, which means due to (i) the relocation of the officer's primary work location by more than 40 miles from the current office location; (ii) a material reduction of the officer's base salary or employee benefits; (iii) any material reduction or diminution of the officer's duties, authority or responsibilities; (iv) a fundamental breach by OncoGenex of the Cormack Agreement; or (v) the failure of any successor to assume expressly in writing OncoGenex's obligations under the Cormack Agreement, in each case, provided that Mr. Cormack has provided OncoGenex with two months' advance written notice and an opportunity to cure such breach during such two-month period. Any termination that occurs without cause, due to disability or for Good Reason is referred to as an Involuntary Termination.

The Cormack Agreement provides that if an Involuntary Termination occurs, OncoGenex will be obligated to pay Mr. Cormack a lump sum equal to 18 months of his then-current base salary. In addition, Mr. Cormack will receive continued entitlement under group medical, dental and insurance plans, excluding short- and long-term disability plans and pension plans, to which Mr. Cormack and his family are entitled at Mr. Cormack's termination date, to the extent such benefit plans permit for 18 months or until Mr. Cormack becomes employed elsewhere where comparable benefits are provided, whichever date comes first (this period is referred to as the Cormack Benefit Plan Severance Period). To the extent continuance of a benefit plan, excluding short- and long-term disability plans and pension plans, is not permitted, OncoGenex Technologies Inc. will be obligated to pay Mr. Cormack an amount equal to the sum Mr. Cormack would be required to pay to receive comparable benefits for the Cormack Benefit Plan Severance Period. Notwithstanding the terms of any of OncoGenex's equity compensation plans or any agreement in connection with such plans, if there is an Involuntary Termination, then the time-based vesting restrictions, if any, will immediately lapse on an additional number of shares under all of Mr. Cormack's outstanding compensatory equity awards, which includes any outstanding stock options granted to Mr. Cormack under its equity compensation plans, that would have time-vested if Mr. Cormack had continued his employment for 18 months following his Involuntary Termination.

The Cormack Agreement provides for additional termination benefits if an Involuntary Termination occurs during the period beginning three months before and ending 12 months after a change in control or if such Involuntary Termination is required by the merger agreement, purchase agreement or other instrument relating to such change in control or such Involuntary Termination is made at the express request of the other party or parties to the transaction constituting such change in control, each of which events is referred to as a Change in Control Termination. Upon a Change in Control Termination, OncoGenex will be obligated to pay Mr. Cormack 24 months of his then-current base salary, plus a sum equal to 12 months of his average monthly bonus earnings, where such average is calculated over the 24-month period immediately preceding Mr. Cormack's termination date and based on Mr. Cormack's bonuses paid in such 24-month period. In addition, Mr. Cormack will receive continued entitlement under OncoGenex's benefit plans as described above, or an amount equal to the sum Mr. Cormack would be required to pay to receive comparable benefits if such continued entitlement is not permitted as described above, except that the Cormack Benefit Plan Severance Period will be 24 months instead of 18 months. Notwithstanding the terms of any of OncoGenex's equity compensation plans or any agreement in connection with such plans, upon a Change in Control Termination, all vesting restrictions, if any, will immediately lapse on all of Mr. Cormack's compensatory equity awards effective as of his termination date.

All termination benefits in the event of an Involuntary Termination or Change in Control Termination are subject to Mr. Cormack's execution, delivery and non-revocation of a general release of all litigation and other claims against OncoGenex and its affiliates.

Mr. Cormack's employment will terminate immediately prior to the consummation of merger. Upon such termination, Mr. Cormack will receive the benefits he's entitled to upon an Involuntary Termination upon a Change in Control Termination.

Jacobs Agreement

OncoGenex's agreement with Cindy Jacobs, referred to as the Jacobs Agreement, provides Dr. Jacobs with termination benefits in the event of an Involuntary Termination, provided that, in the case of termination for good reason, Dr. Jacobs has provided OncoGenex with 30 days' advance written notice and an opportunity to cure such breach during such 30-day period.

The Jacobs Agreement provides that if an Involuntary Termination occurs, OncoGenex will be obligated to pay Dr. Jacobs a lump sum payment equal to 12 months of her then-current base salary. In addition, if Dr. Jacobs elects to continue her and her dependents' health insurance coverage under COBRA, OncoGenex must pay up to 12 months of Dr. Jacobs' monthly premium under COBRA, provided that its obligation to pay the monthly premium will cease when Dr. Jacobs becomes eligible to receive substantially equivalent health coverage in

connection with new employment. Notwithstanding the terms of any of OncoGenex's equity compensation plans or any agreement in connection with such plans, if there is an Involuntary Termination, then the time-based vesting restrictions, if any, will immediately lapse on an additional number of shares under all of Dr. Jacobs' outstanding compensatory equity awards, which includes outstanding stock options granted to Dr. Jacobs under its equity compensation plans, that would have time-vested if Dr. Jacobs had continued in employment for 12 months following her Involuntary Termination.

The Jacobs Agreement provides for additional termination benefits if an Involuntary Termination occurs during the period beginning three months before and ending 12 months after a change in control or if such Involuntary Termination is required by the merger agreement, purchase agreement or other instrument relating to such change in control, or such Involuntary Termination is made at the express request of the other party or parties to the transaction constituting such change in control, each of which events is referred to as a Change in Control Termination. Upon such a Change in Control Termination, OncoGenex will be obligated to pay Dr. Jacobs 15 months of her then-current base salary, plus a sum equal to 12 months of her average monthly bonus earnings, where such average is calculated over the 24-month period immediately preceding Dr. Jacobs' separation from services and based on Dr. Jacobs' bonuses paid in such 24-month period. In addition, OncoGenex's payment of monthly COBRA premiums as described above will be for up to 15 months instead of up to 12 months. Notwithstanding the terms of any of OncoGenex's equity compensation plans or any agreement in connection with such plans, upon a Change in Control Termination, all vesting restrictions, if any, will immediately lapse on all of Dr. Jacobs' compensatory equity effective as of her separation from service.

All termination benefits in the event of an Involuntary Termination or Change in Control Termination are subject to Dr. Jacobs' execution, delivery and non-revocation of a general release of all litigation and other claims against OncoGenex and its affiliates.

Bencich Agreement

OncoGenex's agreement with John Bencich, referred to as the Bencich Agreement, provides Mr. Bencich with termination benefits in the event of an Involuntary Termination, provided that, in the case of termination for good reason, Mr. Bencich has provided OncoGenex with 30 days' advance written notice and an opportunity to cure such breach during such 30-day period. OncoGenex may terminate the Agreement with or without cause by giving Mr. Bencich 30 days' advance written notice, or a cash payment equivalent to 30 calendar days of his then-current base salary in lieu of providing such notice.

The Bencich Agreement provides that if an Involuntary Termination occurs, OncoGenex will be obligated to pay Mr. Bencich a lump sum payment equal to 12 months of his then-current base salary. In addition, if Mr. Bencich elects to continue his and his dependents' health insurance coverage under COBRA, OncoGenex must pay in a lump sum payment the number of months of Mr. Bencich's monthly premium under COBRA, that is equal to the 12 months. Notwithstanding the terms of any of OncoGenex's equity compensation plans or any agreement in connection with such plans, if there is an Involuntary Termination, then the time-based vesting restrictions, if any, will immediately lapse on an additional number of shares under all of Mr. Bencich's outstanding compensatory equity awards, which includes outstanding stock options granted to Mr. Bencich under OncoGenex's equity compensation plans, that would have time-vested if Mr. Bencich had continued in employment for 12 months following his Involuntary Termination.

The Bencich Agreement provides for additional termination benefits if an Involuntary Termination occurs during the period beginning three months before and ending 12 months after a change in control or if such Involuntary Termination is required by the merger agreement, purchase agreement or other instrument relating to such change in control, or such Involuntary Termination is made at the express request of the other party or parties to the transaction constituting such change in control, each of which events is referred to as a Change in Control Termination. Upon such a Change in Control Termination, OncoGenex will be obligated to pay Mr. Bencich 15 months of his then-current base salary, plus a sum equal to 15 months of his average monthly bonus earnings,

where such average is calculated over the 24-month period immediately preceding Mr. Bencich's separation from services and based on Mr. Bencich's bonuses paid in such 24-month period. In addition, OncoGenex's payment of monthly COBRA premiums as described above will be for up to 15 months instead of up to 12 months. Notwithstanding the terms of any of OncoGenex's equity compensation plans or any agreement in connection with such plans, upon a Change in Control Termination, all vesting restrictions, if any, will immediately lapse on all of Mr. Bencich's compensatory equity effective as of his separation from service.

All termination benefits in the event of an Involuntary Termination or Change in Control Termination are subject to Mr. Bencich's execution, delivery and non-revocation of a general release of all litigation and other claims against OncoGenex and its affiliates.

Potential Cost of Termination Payments

In the table below, OncoGenex has estimated the potential cost to it of the compensation to which each Named Executive Officer would have been entitled if he or she experienced an Involuntary Termination or a Change in Control Termination effective as of December 31, 2016.

	Involuntary Termination				Involuntary Termination in Connection with a Change in Control			
Named Executive Officer	Cash Payments ($)	Benefits ($)	Equity Compensation ($)(2)	Total ($)	Cash Payments ($)	Benefits ($)	Equity Compensation ($)	Total ($)
Scott Cormack(1)	812,085	66,047	451,390(3)	1,329,522	1,157,225	88,063	474,816(4)	1,720,104
Cindy Jacobs	413,225	16,342	206,236(5)	635,803	557,862	20,428	241,495(6)	819,785
John Bencich	307,500	38,533	57,970(7)	404,003	411,285	48,167	101,822(8)	561,274

(1) Mr. Cormack's employment will terminate immediately prior to the consummation of the merger. Upon such termination, Mr. Cormack will receive the benefits he's entitled to upon an Involuntary Termination upon a Change in Control Termination. See the section entitled "The Merger—Interests of OncoGenex Directors and Executive Officers in the Merger."

(2) The employment agreements for each of Mr. Cormack, Dr. Jacobs, and Mr. Bencich state that the time-based vesting restrictions associated with unvested options immediately lapse on any shares of common stock that would have time-vested if they had had continued in employment throughout their respective severance period as defined in their employment agreements. The amounts above represent the stock option expense that would be incurred by OncoGenex in accordance with the guidance of FASB ASC Topic 718 in relation to options vested immediately upon termination in accordance with the terms of the individual's employment agreement.

(3) Represents stock option expense associated with the accelerated vesting of 781 options with an exercise price of $11.95 per share and 13,546 options with an exercise price of $11.79 per share and 28,126 options with an exercise price of $1.86 per share and 57,031 accelerated RSUs.

(4) Represents stock option expense associated with the accelerated vesting of 781 options with an exercise price of $11.95 per share, 13,546 options with an exercise price of $11.79 per share and 37,501 options with an exercise price of $1.86 per share and 64,062 accelerated RSUs.

(5) Represents stock option expense associated with the accelerated vesting of 417 options with an exercise price of $11.95 per share, 6,252 options with an exercise price of $11.79, and 9,375 options with an exercise price of $1.86 per share and 22,448 accelerated RSUs.

(6) Represents stock option expense associated with the accelerated vesting of 417 options with an exercise price of $11.95 per share, 6,773 options with an exercise price of $11.79, and 11,719 options with an exercise price of $1.86 per share and 32,812 accelerated RSUs.

(7) Represents stock option expense associated with the accelerated vesting of 10,000 options at an exercise price of $3.17 per share and 6,250 options with an exercise price of $1.86 per share and 10,688 accelerated RSUs.

(8) Represents stock option expense associated with the accelerated vesting of 12,500 options at an exercise price of $3.17 per share and 7,813 options with an exercise price of $1.86 per share and 19,375 accelerated RSUs.

CERTAIN RELATIONSHIPS AND RELATED-PARTY TRANSACTIONS

OncoGenex Related-Party Transactions

Other than as disclosed above under the section entitled "Management Following the Merger," from January 1, 2014 to the present, there have been no transactions, and there are currently no proposed transactions, in which the amount involved exceeds $120,000 to which OncoGenex was or is to be a party and in which any continuing director of the combined company, OncoGenex director nominee of the combined company, executive officer of the combined company, holder of more than 5% of OncoGenex capital stock, or any immediate family member of any of these individuals, had or will have a direct or indirect material interest, except as described below.

In January 2016, Scott Cormack, OncoGenex's Chief Executive Officer, married Michelle Griffin, a consultant to OncoGenex. Pursuant to a consulting agreement entered into April 1, 2013 and updated periodically with revised statements of work, during 2016, OncoGenex paid Ms. Griffin approximately $0.5 million for consulting services. OncoGenex also granted Ms. Griffin performance-based options to purchase 135,000 shares of common stock in 2016. The performance milestones pursuant to which the options would have vested were not achieved and as of December 31, 2016, the options were cancelled.

OncoGenex Related-Party Transactions Policy and Procedure

OncoGenex's Audit Committee is responsible for reviewing and approving all related-party transactions and conflict of interest situations involving a principal stockholder, a member of the Board of Directors or senior management. OncoGenex's Code of Conduct and Business Ethics requires its executive officers and directors to report any conflicts of interest with our interests to its Audit Committee, and generally prohibits its executive officers and directors from conflicts of interest with its interests. Waivers of OncoGenex's Code of Conduct and Business Ethics with respect to an executive officer or director may only be granted by the Board of Directors or, if permitted by NASDAQ and any other applicable stock exchange's rules, OncoGenex's Nominating and Governance Committee. OncoGenex does not have a specific policy concerning approval of transactions with stockholders who own more than five percent of its outstanding shares.

Achieve Related-Party Transactions

Dr. Anthony Clarke is the Chief Scientific Officer of Achieve and a member of Achieve's board of directors and is related to Susan Clarke, a stockholder of Achieve, and Timothy Clarke and Frances Waddingham, who each individually hold more than 5% of Achieve's outstanding capital stock.

On May 11, 2015, Achieve entered into an employment agreement, or the Martell Agreement, with Ron Martell, a stockholder of Achieve, pursuant to which Mr. Martell agreed to serve as the Chief Executive Officer of Achieve. Pursuant to the Martell Agreement, Achieve agreed to pay Mr. Martell an annual base salary of $350,000, which may be adjusted upward from time to time based on an annual review and at the discretion of the board of directors of Achieve. Mr. Martell is also eligible for an annual bonus pursuant to the Martell Agreement with a target amount of 50% of base salary. However, such annual salary and bonus never were paid to Mr. Martell, and Mr. Martell, in recognition of Achieve's low levels of operating cash and his status as an Achieve stockholder, historically waived all of his rights to receive compensation pursuant to the Martell Agreement.

On May 18, 2015, Achieve borrowed $2.72 million through a convertible promissory note, or the Schacter Note, payable to Rob Schacter, a stockholder of Achieve. The Schacter Note matures and is payable upon demand one year from the date of the Schacter Note. Interest accrues at a rate of 3.5%, annually. On September 30, 2015 Mr. Schacter converted $2.0 million in principal into 4,500 shares of Achieve common stock. As of December 31, 2016, the amount of principal outstanding under the Schacter Note was $0.7 million and the amount of accrued interest payable was $35,000.

On August 17, 2015, Achieve entered into an employment agreement, or the Loewy Agreement, with Carolyn Loewy, a stockholder of Achieve, pursuant to which Ms. Loewy agreed to serve as the Chief Business Officer and Chief Financial Officer of Achieve, providing services at least two days per week. However, such annual salary never was paid to Ms. Loewy, and Ms. Loewy, in recognition of Achieve's low levels of operating cash and her status as an Achieve stockholder, historically waived all of her rights to receive compensation pursuant to the Loewy Agreement.

On September 17, 2015, Achieve entered into a Consulting Agreement, or the Ricanto Agreement, with Ricanto Limited, or Ricanto, pursuant to which Ricanto agreed to provide Achieve with up to 40 hours per week of strategic consulting and marketing services. Pursuant to the Ricanto Agreement, Achieve agreed to pay Ricanto $41,666 per month as compensation for Ricanto's strategic consulting and marketing services, resulting in an aggregate of $144,444.44 and $500,000 in consulting fees during 2015 and 2016, respectively. However, such amounts never were paid to Ricanto, and Ricanto, in recognition of Achieve's low levels of operating cash and the relationship of Ricanto's officers with Achieve, waived all of its rights to receive its fees pursuant to the Ricanto Agreement. The Ricanto Agreement also contains customary non-solicitation and non-compete covenants in favor of Achieve. Richard Stewart, Achieve's Chairman, director and stockholder, is the Chairman and Chief Executive Officer of Ricanto. Mr. Stewart and Dr. Anthony Clarke, Achieve's Chief Scientific Officer, director and stockholder, are both equityholders and officers of Ricanto.

During 2016, Achieve borrowed $0.2 million in the aggregate through two notes payable to Mr. Stewart, dated April 20, 2016 and December 8, 2016, or the Stewart Notes. The Stewart Notes mature and are payable upon demand one year from their dates of issuance. Interest accrues at an annual rate of 3.5%. As of December 31, 2016, the amount of principal outstanding under the Stewart Notes was $0.1 million and the amount of accrued interest payable was $3,000.

Achieve Related-Party Transactions Policy and Procedure

While Achieve does not have a formal written policy or procedure for the review, approval or ratification of related party transactions, Achieve's board of directors reviews and considers the interests of its directors, executive officers and principal stockholders in its review and consideration of transactions.

UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL STATEMENTS

The following information does not give effect to the proposed reverse stock split of OncoGenex common stock described in OncoGenex Proposal No. 2.

The following unaudited pro forma condensed combined financial information was prepared using the acquisition method of accounting under U.S. GAAP, and gives effect to the transaction between OncoGenex and Achieve to be accounted for as a reverse acquisition, with Achieve being deemed the acquiring company for accounting purposes.

Achieve was determined to be the accounting acquirer based upon the terms of the Merger Agreement and other factors including: (i) Achieve stockholders are expected to own approximately 75% of the voting interests of the combined company immediately following the closing of the transaction and (ii) directors appointed by Achieve will hold a majority of board seats in the combined company.

The unaudited pro forma condensed combined balance sheet as of December 31, 2016 assumes that the transaction took place on December 31, 2016 and combines the historical balance sheets of OncoGenex and Achieve as of such date. The unaudited pro forma condensed combined statement of operations for year ended December 31, 2016 assumes that the transaction took place as of January 1, 2016, and combines the historical results of OncoGenex and Achieve for the year. The historical financial statements of OncoGenex and Achieve have been adjusted to give pro forma effect to events that are (i) directly attributable to the transaction, (ii) factually supportable, and (iii) with respect to the statements of operations, expected to have a continuing impact on the combined results.

Because Achieve will be treated as the accounting acquirer, Achieve's assets and liabilities will be recorded at their precombination carrying amounts and the historical operations that are reflected in the unaudited pro forma financial information will be those of Achieve. OncoGenex's assets and liabilities will be measured and recognized at their fair values as of the transaction date, and combined with the assets, liabilities and results of operations of Achieve after the consummation of the transaction.

The unaudited pro forma condensed combined financial information is based on the assumptions and adjustments that are described in the accompanying notes. The application of the acquisition method of accounting is dependent upon certain valuations and other studies that have yet to be completed. Accordingly, the pro forma adjustments are preliminary, subject to further revision as additional information becomes available and additional analyses are performed, and have been made solely for the purpose of providing unaudited pro forma condensed combined financial information. Differences between these preliminary estimates and the final acquisition accounting, expected to be completed after the closing of the transaction, will occur and these differences could have a material impact on the accompanying unaudited pro forma condensed combined financial information and the combined company's future results of operations and financial position. In addition, differences between the preliminary and final amounts will likely occur as a result of the amount of cash used for OncoGenex's operations, changes in the fair value of OncoGenex common stock, changes in the fair value of the CVRs, and other changes in OncoGenex's assets and liabilities.

The unaudited pro forma condensed combined financial information does not give effect to the potential impact of current financial conditions, regulatory matters, operating efficiencies or other savings or expenses that may be associated with the integration of the two companies. The unaudited pro forma condensed combined financial information is preliminary and has been prepared for illustrative purposes only and is not necessarily indicative of the financial position or results of operations in future periods or the results that actually would have been realized had OncoGenex and Achieve been a combined company during the specified periods. The actual results reported in periods following the transaction may differ significantly from those reflected in these pro forma financial information presented herein for a number of reasons, including, but not limited to, differences between the assumptions used to prepare this pro forma financial information.

The unaudited pro forma condensed combined financial information, including the notes thereto, should be read in conjunction with the separate OncoGenex and Achieve historical financial statements, and their respective management's discussion and analysis of financial condition and results of operations. Achieve's historical audited financial statements for the year ended December 31, 2016 and period ended December 31, 2015 are included elsewhere in this proxy statement/prospectus/information statement. OncoGenex's historical audited financial statements for the years ended December 31, 2016 and December 31, 2015 are included elsewhere in this proxy statement/prospectus/information statement.

Unaudited Pro Forma Condensed Combined Balance Sheet
December 31, 2016
(in thousands)

	OncoGenex	Achieve	Pro Forma Adjustments		Pro Forma Combined
ASSETS					
Current assets:					
Cash and cash equivalents	$ 15,233	$ 15	$ —		$ 15,248
Short-term investments	10,230	—	—		10,230
Interest receivable	32	—	—		32
Amounts receivable	478	—	—		478
Prepaid expenses	954	3	—		957
Total current assets	**26,927**	**18**	**—**		**26,945**
Restricted cash	272	—			272
Property and equipment, net	258	—			258
Other assets	13	—			13
Intangible assets	—	2,755	2,715	G	5,470
Goodwill		1,034			1,034
Total assets	**$ 27,470**	**$ 3,807**	**$ 2,715**		**$ 33,992**
LIABILITIES AND STOCKHOLDERS' EQUITY					
Current liabilities:					
Accounts payable	$ 2,121	$ 95	$ —		$ 2,216
Accrued liabilities other	2,442	1,121	4,297	A	7,860
Accrued clinical liabilities	3,415	—	—		3,415
Accrued compensation	188	1,028	—		1,216
Shareholder loans	—	829	—		829
Current portion of long-term obligations	57	—	—		57
Contingent value rights liability	—	—	629	F	629
Warrant liability	232	—	—		232
Total current liabilities	**8,455**	**3,073**	**4,926**		**16,454**
Long-term obligations, less current portion	49	—	—		49
Long-term deferred tax liability	—	124	923	H	1,047
Total liabilities	**8,504**	**3,197**	**5,849**		**17,550**
Stockholders' equity:					
Common stock	29	—	(29)	B2	90
			90	B1	
Additional paid-in capital	213,239	2,667	(213,239)	B2	17,590
			14,923	B1	
Accumulated deficit	(196,942)	(2,062)	(4,297)	A	(1,243)
			196,942	B2	
			5,116	C	
Accumulated other comprehensive income	2,640	5	(2,640)	B2	5
Total stockholders' equity	**18,966**	**610**	**(3,134)**		**16,442**
Total liabilities and stockholders' equity	**$ 27,470**	**$ 3,807**	**$ 2,715**		**$ 33,992**

Unaudited Pro Forma Condensed Combined Statement of Operations
For the Year Ended December 31, 2016
(in thousands, except share and per share data)

	OncoGenex	Achieve	Pro Forma Adjustments		Pro Forma Combined
COLLABORATION REVENUE	$ 5,062	$ —	$ —		$ 5,062
EXPENSES					
Research and development	14,788	286	—		15,074
General and administrative	8,933	1,428	(1,097)	D	9,264
Restructuring costs (recovery)	2,206	—	—		2,206
Recovery of lease termination loss	(1,250)	—	—		(1,250)
Litigation settlement	1,375	—	—		1,375
Asset impairment charge	202	—	—		202
Total operating expenses	26,254	1,714	(1,097)		26,871
OTHER INCOME (EXPENSE)					
Interest income (expense)	203	—	—		203
Other income (expense)	(13)	(24)	—		(37)
Warrant issuance costs	—	—	—		—
Gain on warrants	873	—	—		873
Total other income	1,063	(24)			1,039
Net loss before income taxes	$ (20,129)	$ (1,738)	$ 1,097		$ (20,770)
Provision for income taxes (recovery)	$ —	$ (504)	—		(504)
Net loss	$ (20,129)	$ (1,234)	$ 1,097		$ (20,266)
Basic and diluted net loss per common share	$ (0.67)	$ (58.13)			$ (0.17)
Shares used in computation of basic and diluted net loss per common share	29,949,432	21,230	90,055,333	E	120,025,995

Notes to the Unaudited Pro Forma Condensed Combined Financial Information

1. Description of Transaction and Basis of Presentation

The unaudited pro forma condensed combined financial information was prepared in accordance with U.S. GAAP and pursuant to the rules and regulations of SEC Regulation S-X, and present the pro forma financial position and results of operations of the combined companies based upon the historical data of OncoGenex and Achieve.

For the purposes of the unaudited pro forma combined financial information, the accounting policies of OncoGenex and Achieve are aligned with no differences. Accordingly, no effect has been provided for the pro forma adjustments described in Note 4, "Pro Forma Adjustments."

Description of Transaction

On January 5, 2017, OncoGenex and Achieve entered into a Merger Agreement pursuant to which Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex will merge with and into Achieve, or the First Merger, with Achieve becoming a wholly owned subsidiary of OncoGenex and the surviving company of the First Merger, or the Initial Surviving Corporation. Promptly following the First Merger, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc., or Merger Sub 2, a Delaware corporation and a wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity as a direct wholly owned subsidiary of OncoGenex. The two mergers taken together, are intended to qualify as a "reorganization" within the meaning of Section 368(a)(2)(D) of the Internal Revenue Code of 1986, as amended. The surviving company is expected to be renamed Achieve Life Sciences, Inc. and is referred to herein as the "combined company." Subject to the terms and conditions of the Merger Agreement, at the closing of the First Merger, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of OncoGenex common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's fully-diluted capitalization, as well as the payment of cash in lieu of fractional shares. Immediately following the effective time of the merger, OncoGenex equityholders are expected to own approximately 25% of the outstanding capital stock of the combined company on a fully diluted basis, and the Achieve stockholders are expected to own approximately 75% of the outstanding capital stock of the combined company on a fully diluted basis. The transaction is expected to close in mid-2017, subject to customary closing conditions, including the approval of the transaction by OncoGenex's stockholders.

Basis of Presentation

Achieve has preliminarily concluded that the transaction represents a business combination pursuant to Financial Accounting Standards Board Accounting Standards Codification Topic 805, *Business Combinations.* Achieve has not yet completed an external valuation analysis of the fair market value of OncoGenex's assets to be acquired and liabilities to be assumed. Using the estimated total consideration for the transaction, Achieve has estimated the allocations to such assets and liabilities. This preliminary purchase price allocation has been used to prepare pro forma adjustments in the unaudited pro forma condensed combined balance sheet. The final purchase price allocation will be determined when Achieve has determined the final consideration and completed the detailed valuations and other studies and necessary calculations. The final purchase price allocation could differ materially from the preliminary purchase price allocation used to prepare the pro forma adjustments. The final purchase price allocation may include (i) changes in allocations to intangible assets and bargain purchase gain or goodwill based on the results of certain valuations and other studies that have yet to be completed, (ii) other changes to assets and liabilities and (iii) changes to the ultimate purchase consideration.

2. Preliminary Purchase Price

Pursuant to the Merger Agreement, at the closing of the transaction, OncoGenex will issue to Achieve stockholders a number of shares of OncoGenex common stock representing approximately 75% of the outstanding shares of common stock of the combined company. The estimated preliminary purchase price, which represents the consideration transferred to OncoGenex equityholders in the reverse transaction is calculated

based on the number of shares of common stock of the combined company that OncoGenex equityholders will own as of the closing of the transaction. The accompanying unaudited pro forma condensed combined financial information reflects an estimated purchase price of approximately $15.6 million, which consists of the following (in thousands except for share and per share amounts):

Estimated number of shares of the combined company to be owned by OncoGenex equityholders(1)	30,026
Multiplied by the assumed price per share of OncoGenex stock(2)	$ 0.50
Value of shares of the combined company owned by OncoGenex equityholders	$15,013
Estimated fair value of CVRs(3)	$ 629
Total preliminary estimated purchase price	$15,642

(1) Represents the number of shares of common stock of the combined company that OncoGenex equityholders would own as of the closing of the transaction pursuant to the Merger Agreement. This amount is calculated, for purposes of this unaudited pro forma condensed combined financial information, as 30,025,521 shares of OncoGenex common stock outstanding as of December 31, 2016, this does not give effect to the proposed reverse stock split of OncoGenex common stock described in OncoGenex Proposal No. 2. The effect of the reverse stock split is not expected to have an impact on the dollar amounts in the preliminary purchase price or pro forma statements.

(2) The estimated purchase price was based on the closing price of OncoGenex common stock on March 24, 2017. The requirement to base the final purchase price on the number of shares of OncoGenex common stock outstanding and the price as of the closing date could result in a purchase price and bargain purchase gain or goodwill, different from that assumed in this unaudited pro forma condensed combined financial information, and that difference may be material. A 10% increase (decrease) to the OncoGenex share price would increase (decrease) the purchase price by $1.5 million, with a corresponding change to the bargain purchase gain. Therefore, the estimated consideration expected to be transferred reflected in this unaudited pro forma condensed combined financial information does not purport to represent what the actual consideration transferred will be when the transaction is completed. The actual purchase price will fluctuate until the effective date of the transaction and the final valuation could differ significantly from the current estimate.

(3) The unaudited pro forma condensed combined balance sheet as of December 31, 2016 reflects an estimated fair value of $0.6 million attributable to the CVRs to be issued in the merger, based on an internal valuation considering the probability of success of entering into a collaboration agreement with a third party for the development of apatorsen, completing required preclinical and clinical trials and receiving regulatory approval and expected timing of potential future cash flows. The value placed on the CVRs for purposes of these unaudited pro forma combined financial statements may not be indicative of the actual fair value of the CVRs or of the total payments to be made following the completion of the merger.

The following table illustrates the effect of change in OncoGenex's common stock price and the resulting impact on the estimated total purchase price and estimated bargain purchase gain/(goodwill) (in thousands except for share and per share amounts):

3. Effect of fluctuation of common stock price per share from pro forma measurement date to closing date

Change in stock price	Stock price	Estimated purchase price	Estimated bargain purchase gain (goodwill)
Increase of 10%	$ 0.55	$ 17,143	$ 3,615
Decrease of 10%	$ 0.45	14,140	6,618
Increase of 20%	$ 0.60	18,644	2,114
Decrease of 20%	$ 0.40	12,639	8,119
Increase of 30%	$ 0.65	20,146	613
Decrease of 30%	$ 0.35	11,138	9,620
Increase of 50%	$ 0.75	23,148	(2,390)
Decrease of 50%	$ 0.25	8,135	12,623

The number of shares of common stock OncoGenex will issue to Achieve stockholders, for purposes of this unaudited pro forma condensed combined financial information, is calculated pursuant to the terms of the Merger Agreement based on OncoGenex common stock outstanding as of December 31, 2016, as follows:

Shares of OncoGenex Common Stock outstanding as of December 31, 2016	30,025,521
Divided by the assumed percentage of OncoGenex ownership of combined company	25%
Estimated adjusted total shares of common stock of combined company	120,102,084
Multiplied by the assumed percentage of Achieve ownership of combined company	75%
Estimated shares of OncoGenex common stock issued to Achieve upon closing of transaction	90,076,563

Under the acquisition method of accounting, the total purchase price is allocated to the acquired tangible and intangible assets and assumed liabilities of OncoGenex based on their estimated fair values as of the transaction closing date. The excess of the estimated fair values of net assets acquired over the acquisition consideration paid will be recorded as a bargain purchase gain in the condensed combined statement of comprehensive income. The bargain purchase gain has not been reflected in the pro forma condensed combined statement of operations as it is directly attributable to the transaction and will not have a continuing impact on the operating results of the combined company.

The allocation of the total preliminary estimated purchase price to the acquired assets and liabilities assumed of OncoGenex based on the estimated fair values as of December 31, 2016 is as follows (in thousands):

Cash, cash equivalents and marketable securities	$ 25,735
Prepaid expenses and other assets	1,735
Intangible assets (note 4G)	2,715
Accounts payable, accrued expenses and other liabilities	(8,504)
Deferred tax liability	(923)
Net assets acquired	20,758
Less: estimated purchase price	(15,642)
Bargain purchase gain	5,116

The application of the acquisition method of accounting is dependent upon certain valuations and other studies that have yet to be completed. The purchase price allocation will remain preliminary until Achieve management determines the fair values of assets acquired and liabilities assumed. The final determination of the purchase price allocation is anticipated to be completed as soon as practicable after completion of the transaction and will be based on the fair values of the assets acquired and liabilities assumed as of the transaction closing date. The final amounts allocated to assets acquired and liabilities assumed could differ significantly from the amounts presented in the unaudited pro forma condensed combined financial statements for the reasons described in Note 1.

4. Pro Forma Adjustments

The unaudited pro forma condensed combined financial information includes pro forma adjustments that are (i) directly attributable to the transaction, (ii) factually supportable, and (iii) with respect to the unaudited pro forma condensed combined statements of operations, expected to have a continuing impact on the results of operations of the combined company.

Based on Achieve management's review of OncoGenex's summary of significant accounting policies, the nature and amount of any adjustments to the historical financial statements of OncoGenex to conform to the accounting policies of Achieve are not expected to be significant.

The unaudited pro forma condensed combined financial information does not give effect to the proposed reverse stock split of OncoGenex common stock described in OncoGenex Proposal No. 2.

The pro forma adjustments, based on preliminary estimates that may change significantly as additional information is obtained, are as follows:

A. To reflect the accrued liabilities that are directly attributable to the closing of the transaction, including approximately $1.3 million in severance and change in control obligations for OncoGenex employees and certain consultants that will be reflected in the Achieve statements of operations following the closing of the transaction and estimated transaction costs to complete the transaction of approximately $2.9 million. Note that the $3.0 million in transaction costs includes $1.4 million for a fairness opinion and transaction costs incurred by OncoGenex, $0.8 million in legal expenses to be incurred by OncoGenex, $0.5 million in legal expenses to be incurred by Achieve, $0.2 million in auditor and printer fees to be incurred by OncoGenex and $0.1 million in accounting and auditor fees to be incurred by Achieve. These pro forma adjustments are not reflected in the unaudited pro forma condensed combined statements of operations as these amounts are not expected to have a continuing effect on the operating results of the combined company.

B. To reflect (1) the issuance of common shares to finance the acquisition, and (2) the elimination of OncoGenex's historical shareholders' equity.

C. To reflect the bargain purchase gain recognized as a result of the transaction.

D. To reflect the elimination of transaction costs incurred by OncoGenex and Achieve during the periods presented. These amounts have been eliminated on a pro forma basis, as they are not expected to have a continuing effect on the operating results of the combined company.

E. To reflect the increase in the weighted average shares in connection with the issuance of common shares to finance the transaction. The table presents these pro forma share adjustments as follows:

	Year ended December 31, 2016
Weighted average shares outstanding	29,949,432
Issuance of additional shares to finance the transaction	90,076,563
Pro forma combined weighted average shares outstanding	120,025,995

F. To reflect the liability on issuance of the Contingent Value Rights, or CVRs, to existing stockholders attributable to the closing of the transaction. The CVRs will be issued on a 1:1 for each common share of OncoGenex before giving effect to the reverse stock split described in OncoGenex Proposal No. 2. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the First Merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to OncoGenex's product candidate apatorsen, or the Milestones, upon the terms and subject to the conditions set forth in a contingent value rights agreement to be entered into between OncoGenex, Achieve and Computershare, as rights agent.

G. To reflect the fair value of OncoGenex's intellectual property related to its product candidate apatorsen, which includes licensing agreements and patents, acquired by Achieve as part of the transaction.

H. To reflect the deferred tax liability resulting from the increase in U.S. GAAP accounting basis value for a definite-lived intangible asset with no corresponding tax base increase.

DESCRIPTION OF ONCOGENEX CAPITAL STOCK

OncoGenex's certificate of incorporation authorizes OncoGenex to issue up to 75,000,000(1) shares of common stock, $0.001 par value, and 5,000,000 shares of preferred stock, $0.001 par value.

As of December 31, 2016, there were outstanding:

- 30,059,514 shares of common stock;
- zero shares of preferred stock;
- 1,378,805 shares of common stock underlying outstanding options, with a weighted average exercise price of $8.62 per share;
- 3,689,436 shares of common stock underlying outstanding warrants, with a weighted average exercise price of $3.90 per share; and
- 253,221 shares of common stock underlying outstanding restricted stock units.

The reverse stock split of OncoGenex common stock described in OncoGenex Proposal No. 2, is expected to occur immediately prior to the merger and prior to issuance of shares of OncoGenex common stock to Achieve. As a result, the issuance of shares of common stock to Achieve is not expected to exceed OncoGenex's authorized shares of common stock.

Common Stock

Voting

OncoGenex's common stock is entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, except that in the election of directors each stockholder has cumulative voting rights and is entitled to a number of votes equal to the number of shares held by such stockholder multiplied by the number of directors to be elected, and each stockholder may cast all of such votes for a single director or may distribute them among the number to be voted for, or for any two or more of them as the stockholder may see fit.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, the holders of common stock are entitled to receive dividends, if any, as may be declared from time to time by OncoGenex's board of directors out of legally available funds. OncoGenex has never paid cash dividends and has no present intention to pay cash dividends.

Liquidation

In the event of OncoGenex's liquidation, dissolution or winding up, holders of OncoGenex's common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of OncoGenex's debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Rights and Preferences

Holders of OncoGenex's common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to OncoGenex's common stock. The rights, preferences and privileges of the holders of OncoGenex's common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of OncoGenex's preferred stock that OncoGenex may designate and issue in the future.

Fully Paid and Nonassessable

All of OncoGenex's outstanding shares of common stock are fully paid and nonassessable.

Preferred Stock

OncoGenex's board of directors has the authority, without further action by the stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

OncoGenex's board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in OncoGenex's control that may otherwise benefit holders of OncoGenex's common stock and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. As of December 31, 2016, there were no shares of preferred stock outstanding and OncoGenex has no current plans to issue any shares of preferred stock.

Stock Options

As of December 31, 2016, there were 1,378,805 shares of common stock issuable upon the exercise of outstanding stock options, at a weighted-average exercise price of $8.62 per share.

Restricted Stock Unit Awards

As of December 31, 2016, there were 253,221 shares of common stock issuable upon exercise of outstanding restricted stock unit awards, with a weighted-average grant date fair value of $4.56.

Warrants

As of December 31, 2016, there were 3,689,436 shares of common stock issuable upon the exercise of outstanding warrants at a weighted-average exercise price of $3.90 per share.

Some of these warrants provide for cashless exercise at the option of the holder. These warrants also contain provisions for the adjustment of the number of shares issuable upon the exercise of the warrant in the event of stock splits, recapitalizations, reclassifications and consolidations. 3,450,202 of these warrants will expire in July 2019 and 239,234 of these warrants will expire in October 2020.

Anti-Takeover Effects of Provisions of OncoGenex Charter Documents and Delaware Law

Delaware Anti-Takeover Law

OncoGenex is subject to Section 203 of the Delaware General Corporation Law, or Section 203. Section 203 generally prohibits a public Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

- the interested stockholder owned at least 85% of the voting stock of the corporation outstanding upon consummation of the transaction, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the consummation of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 ⅔% of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Certificate of Incorporation and Bylaws

Provisions of OncoGenex's certificate of incorporation and bylaws may delay or discourage transactions involving an actual or potential change in OncoGenex's control or change in OncoGenex's management, including transactions in which stockholders might otherwise receive a premium for their shares or transactions that OncoGenex's stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of OncoGenex's common stock. Among other things, OncoGenex's certificate of incorporation and bylaws:

- permit OncoGenex's board of directors to issue up to 5,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate (including the right to approve an acquisition or other change in OncoGenex's control);
- provide that the authorized number of directors may be changed only by resolution adopted by a majority of the board of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law or subject to the rights of holders of preferred stock as designated from time to time, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- require that any action to be taken by OncoGenex's stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner and also specify requirements as to the form and content of a stockholder's notice;

- provide that special meetings of OncoGenex's stockholders may be called only by the chairman of the board, OncoGenex's Chief Executive Officer, the president or by the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies); and
- provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on OncoGenex's behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of OncoGenex's directors or officers to OncoGenex or its stockholders, (iii) any action asserting a claim against OncoGenex arising pursuant to any provision of the Delaware General Corporation Law or OncoGenex's certificate of incorporation or bylaws, (iv) any action to interpret, apply, enforce or determine the validity of OncoGenex's certificate of incorporation or bylaws or (v) any action asserting a claim against OncoGenex governed by the internal affairs doctrine.

NASDAQ Capital Market Listing

OncoGenex's common stock is currently listed on The NASDAQ Capital Market under the symbol "OGXI."

Transfer Agent and Registrar

The transfer agent and registrar for OncoGenex's common stock is Computershare, Inc. The transfer agent and registrar's address is 8742 Lucent Blvd., Suite 225, Highlands Ranch, CO 80129.

COMPARISON OF RIGHTS OF HOLDERS OF ONCOGENEX STOCK AND ACHIEVE STOCK

Both OncoGenex and Achieve are incorporated under the laws of the State of Delaware and, accordingly, the rights of the stockholders of each are currently, and will continue to be, governed by the DGCL. If the merger is completed, Achieve stockholders will become stockholders of OncoGenex, and their rights will be governed by the DGCL, the certificate of incorporation and bylaws of OncoGenex and, assuming OncoGenex Proposal Nos. 2 and 3 are approved by the OncoGenex stockholders at the OncoGenex special meeting, the amendments to the certificate of incorporation of OncoGenex attached to this proxy statement/prospectus/information statement as *Annex B* and *Annex C*, respectively.

The table below summarizes the material differences between the current rights of Achieve stockholders under the Achieve certificate of incorporation and bylaws and the rights of OncoGenex stockholders, post-merger, under the OncoGenex certificate of incorporation and bylaws, each as amended, as applicable, and as in effect immediately following the merger, without taking into account the reverse stock split.

While OncoGenex and Achieve believe that the summary tables cover the material differences between the rights of their respective stockholders prior to the merger and the rights of OncoGenex stockholders following the merger, these summary tables may not contain all of the information that is important to you. You should carefully read this entire proxy statement/prospectus/information statement and the other documents referred to in this proxy statement/prospectus/information statement for a more complete understanding of the differences between being a stockholder of OncoGenex or Achieve before the merger and being a stockholder of OncoGenex after the merger. OncoGenex has filed copies of its current certificate of incorporation and bylaws as Exhibits 3.1, 3.2 and 3.3 to the registration statement of which this proxy statement/prospectus/information statement forms a part and will send copies of the documents referred to in this proxy statement/prospectus/information statement to you upon your request. Achieve will also send copies of its organizational documents referred to in this proxy statement/prospectus/information statement to you upon your request. See the section entitled “Where You Can Find More Information” in this proxy statement/prospectus/information statement.

Current Achieve Rights Versus OncoGenex Rights Post-Merger

Provision	Achieve (Pre-Merger)	OncoGenex (Post-Merger)
Elections; Voting; Procedural Matters		
Authorized Capital Stock	The certificate of incorporation of Achieve, as amended, authorizes the issuance of up to 30,000 shares of common stock, $0.01 par value per share, of which 21,230 shares are currently outstanding.	Before taking into account the reverse stock split, the certificate of incorporation of OncoGenex, as amended, authorizes the issuance of up to 80,000,000 shares, of which 75,000,000 shares are common stock, each having a par value of $0.001, and 5,000,000 shares are preferred stock, each having a par value of $0.001.
Number of Directors	The bylaws of Achieve currently provide that the board of directors shall consist of one or more members and that the number of directors may be changed from time to time by resolutions of Achieve’s board of directors.	The bylaws of OncoGenex currently provide that the number of directors that shall constitute the whole board of directors shall be not less than three with the exact number of directors to be fixed from time to time by a resolution adopted by the majority of directors.

Stockholder Nominations and Proposals	The certificate of incorporation, as amended, and bylaws of Achieve do not provide for procedures with respect to stockholder proposals or director nominations.	The bylaws of OncoGenex provide that in order for a stockholder to make a director nomination or propose business at an annual meeting of stockholders, the stockholder must give timely written notice to the OncoGenex secretary, which must be received not more than 120 calendar days before and not less than 90 calendar days before the one year anniversary of the date of the previous year's annual meeting (with certain adjustments if no annual meeting was held the previous year or the date of the annual meeting is changed by more than 30 days from the first anniversary of the preceding year's annual meeting).
Removal of Directors	Achieve's bylaws provide that directors shall hold office for a term of one year or until their successors are duly elected and qualified, subject to their earlier death, resignation, disqualification or removal. Any director may resign at any time upon notice to Achieve.	Under the bylaws of OncoGenex, a director may be removed at any time with or without cause by the vote of the holders of a majority of the shares issued and outstanding and entitled to vote in the election of directors.
Special Meeting of the Stockholders	The bylaws of Achieve provide that special meetings of stockholders may be called at any time by the board of directors.	The bylaws of OncoGenex provide that a special meeting of the stockholders may be called by the chairman of the board of directors, the chief executive officer, the president, or by the board of directors pursuant to a resolution adopted by a majority of the board of directors.
Cumulative Voting	The certificate of incorporation, as amended, and bylaws of Achieve do not allow cumulative voting rights in the election of its directors.	The certificate of incorporation of OncoGenex grants cumulative voting rights in the election of its directors.
Vacancies	The bylaws of Achieve provide that any vacancy or newly created directorships on the board of directors may be filled by vote of a majority of the directors then in office, although less than a quorum, or by a plurality of the votes cast at a meeting of stockholders.	The bylaws of OncoGenex provide that any newly created directorships on the board of directors may be filled by a majority of the directors in office, even though less than a quorum of the board of directors. Further, the bylaws provide that when one or more directors resign from the board of directors, effective at a future date, a majority of the directors then in office, including those who have resigned, shall have the power to fill such vacancies.
Voting Agreement	Achieve does not have a voting agreement or similar agreement with any of its stockholders in place.	OncoGenex does not have a voting agreement or similar agreement with any of its stockholders in place.
Drag Along	Achieve does not have drag along terms in place.	OncoGenex does not have drag along terms in place.

Stockholder Action by Written Consent	The bylaws of Achieve provide that any action required or permitted to be taken at any annual or special meeting of stockholders may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote on such action were present and voted.	The bylaws of OncoGenex do not specify whether any action may be taken by the stockholders by written consent.
Notice of Stockholder Meeting	The bylaws of Achieve provide that written notices of all meetings shall state the place, if any, date and time of the meeting, and the record date for determining stockholders entitled to vote at the meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. The bylaws of Achieve provide that notice of each meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting.	Under the bylaws of OncoGenex, written or electronic notice of each stockholder meeting must specify the place, day and hour of the meeting, and, in the case of a special meeting, the purposes for which the meeting is called. Notice shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting.
Conversion Rights and Protective Provisions	The certificate of incorporation of Achieve does not provide that holders of Achieve common stock shall have preemptive, conversion or other protective rights	The certificate of incorporation of OncoGenex does not provide that holders of OncoGenex stock shall have preemptive, conversion or other protective rights.
Right of First Refusal	Achieve does not have a right of first refusal in place.	OncoGenex does not have a right of first refusal in place.
Forum Selection	Neither the certificate of incorporation nor bylaws of Achieve include a forum selection provision.	Under the bylaws of OncoGenex, unless OncoGenex consents to the selection of an alternative forum, to the fullest extent permitted by law, the courts of the state of Delaware or the United States District Court for the District of Delaware will be the sole and exclusive forum for any internal corporate claims (as defined in the DGCL) brought by a stockholder of OncoGenex.
Indemnification of Officers and Directors and Advancement of Expenses; Limitation on Personal Liability		
Indemnification	The certificate of incorporation of Achieve and the bylaws of Achieve provide that Achieve shall indemnify its directors and officers to the fullest extent permitted by applicable law.	The certificate of incorporation and bylaws of OncoGenex provide that OncoGenex shall indemnify its directors and officers to the fullest extent permitted by the DGCL or any other applicable law. Under its

		certificate of incorporation and its bylaws, OncoGenex will not be required to indemnify any director or officer in connection with any proceeding initiated by such person unless the proceeding was authorized by the OncoGenex board of directors. Under the bylaws of OncoGenex, such rights shall not be exclusive of any other rights acquired by directors and officers, including by agreement.
Advancement of Expenses	The bylaws of Achieve provides that Achieve shall pay the expenses incurred by a director or officer in defending any proceeding in advance of its final disposition, provided, that, to the extent required by law, such payment of expenses in advance of the final disposition of the proceeding shall be made only upon receipt of an undertaking by the director or officer to repay all amounts advanced if it should be ultimately determined that such director or officer is not entitled to be indemnified.	The bylaws of OncoGenex provide that OncoGenex will advance expenses to any director or officer prior to the final disposition of the proceeding, provided, however, that such advancements shall be made only upon receipt of an undertaking by such director or officer to repay all amounts advanced if it should be ultimately determined that such director or officer is not entitled to indemnification under the bylaws of OncoGenex or otherwise.
Dividends		
Declaration and Payment of Dividends	The certificate of incorporation of Achieve does not contain any provisions regarding the declaration or payment of dividends.	The certificate of incorporation of OncoGenex does not contain any provisions regarding the declaration or payment of dividends.
Amendments to Certificate of Incorporation or Bylaws		
General Provisions	The certificate of incorporation of Achieve may be amended at any time in any manner permitted under law.	The certificate of incorporation of OncoGenex may be amended in any manner permitted under law.

PRINCIPAL STOCKHOLDERS OF ONCOGENEX

Except where specifically noted, the following information and all other information contained in this proxy statement/prospectus/information statement do not give effect to the proposed reverse stock split described in OncoGenex Proposal No. 2.

The following table sets forth certain information with respect to the beneficial ownership of OncoGenex common stock by the following persons as of May 1, 2017, except as otherwise noted in the footnotes to the table:

- each person, entity or group who it knows to beneficially own five percent or more of its voting securities;
- each of its directors and director nominees;
- each of its Named Executive Officers; and
- all of its directors and executive officers as a group.

The address of each beneficial owner listed in the table is c/o OncoGenex Pharmaceuticals, Inc., 19820 North Creek Parkway, Suite 201, Bothell, Washington 98011. The percentages in the table below are based on 30,025,521 shares of OncoGenex common stock outstanding as of December 31, 2016. Except as indicated in the footnotes to the table and pursuant to applicable community property laws, to its knowledge, each stockholder named in the table has sole voting and investment power with respect to the shares set forth opposite such stockholder's name. The information provided in the table is based on OncoGenex's records and information filed with the SEC, unless otherwise noted.

Name of Beneficial Owner	Amount and Nature of Beneficial Ownership(1)	Percent of Class(%)(1)
Named Executive Officers and Directors:		
Scott Cormack(2)	584,008	1.9
Cindy Jacobs(3)	200,368	*
John Bencich(4)	55,025	*
Neil Clendeninn(5)	70,921	*
Stewart Parker(6)	58,238	*
Jack Goldstein(7)	72,238	*
Martin Mattingly(8)	61,000	*
David Smith(9)	60,000	*
All current officers and directors as a group (8 persons)(10)	1,161,798	3.8

* Less than 1%

(1) Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Shares of common stock subject to options and warrants currently exercisable, or exercisable within 60 days of May 1, 2017, are deemed outstanding for computing the percentage of the person holding such options or warrants but are not deemed outstanding for computing the percentage of any other person.

(2) Represents (i) 140,050 shares owned directly, and 228,019 options and 9,375 restricted stock units, or RSUs, owned directly and exercisable or vested within 60 days of May 1, 2017, and (ii) 84,055 shares owned indirectly through his spouse, and 117,509 options and 5,000 RSUs owned indirectly through his spouse exercisable or vested within 60 days of May 1, 2017.

(3) Represents 84,359 shares owned directly, and 111,009 options and 5,000 RSUs exercisable or vested within 60 days of May 1, 2017.

(4) Represents 11,588 shares owned directly and 43,437 options exercisable within 60 days of May 1, 2017.
(5) Represents 22,421 shares owned directly and 48,500 options exercisable within 60 days of May 1, 2017.
(6) Represents 12,500 shares owned directly and 45,738 options exercisable within 60 days of May 1, 2017.
(7) Represents 17,500 shares owned directly and 54,738 options exercisable within 60 days of May 1, 2017.
(8) Represents 10,500 shares owned directly and 50,500 options exercisable within 60 days of May 1, 2017.
(9) Represents 9,500 shares owned directly and 50,500 options exercisable within 60 days of May 1, 2017.
(10) Represents for the current officers and directors as a group, 392,473 shares owned directly or indirectly as indicated above, and 749,950 options and 19,375 RSUs exercisable or vested within 60 days of May 1, 2017.

PRINCIPAL STOCKHOLDERS OF ACHIEVE

The following table sets forth certain information with respect to the beneficial ownership of Achieve capital stock as of May 1, 2017 for:

- each person, or group of affiliated persons, who are known by Achieve to beneficially own more than 5% of the outstanding shares of Achieve capital stock;
- each of the Achieve directors;
- each of the Achieve named executive officers; and
- all of the current directors and executive officers of Achieve as a group.

Beneficial ownership is determined under SEC rules and includes sole or shared power to vote or dispose of shares of Achieve common stock. Except as indicated in footnotes to the table below or, where applicable, to the extent authority is shared by spouses under community property laws, the beneficial owners named in the table have, to Achieve's knowledge, sole voting and dispositive power with respect to all shares of common stock shown to be beneficially owned by them based on information provided to Achieve by such stockholders. Unless otherwise indicated, the address for each stockholder listed is: c/o Achieve Life Science, Inc., 30 Sunnyside Avenue, Mill Valley, California 94941.

Name	Number of Shares Beneficially Owned	Percentage Ownership (%)
5% or Greater Stockholders		
Timothy Clarke	1,500	7.1
Robert Schacter	4,500	21.2
Frances Waddingham	1,500	7.1
Directors and Named Executive Officers		
Richard Stewart(1)	5,500	25.9
Dr. Anthony Clarke(2)	2,500	11.8
Ronald Martell	2,100	9.9
Caroline Loewy	630	3.0
All directors and officers as a group (4 persons)	10,730	50.5

(1) Includes 200 shares held by Deirdre Lomas, Mr. Stewart's partner.
(2) Includes 1,000 shares held by Susan Clarke, Dr. Clarke's spouse.

LEGAL MATTERS

Fenwick & West LLP, Seattle, Washington, will pass upon the validity of the OncoGenex common stock offered by this proxy statement/prospectus/information statement.

EXPERTS

The consolidated financial statements of OncoGenex at December 31, 2016 and 2015, and for each of the three years in the period ended December 31, 2016, included in this proxy statement/prospectus/information statement, which is referred to and made a part of a Registration Statement on Form S-4, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report appearing elsewhere herein, and are included in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

The consolidated financial statements of Achieve Life Science, Inc. as of December 31, 2016 and 2015, and for the year ended December 31, 2016 and the period from May 12, 2015 (the date of inception) to December 31, 2015, included in this proxy statement/prospectus/information statement, have been so included in reliance on the report (which contains an explanatory paragraph relating to the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements) of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

OncoGenex files annual, quarterly and special reports, proxy statements and other information are with the SEC. You may read and copy any reports, statements or other information that OncoGenex files at the SEC public reference room in at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. OncoGenex SEC filings are also available to the public from commercial document retrieval services and on the website maintained by the SEC at http://www.sec.gov. Reports, proxy statements and other information concerning OncoGenex also may be inspected at the offices of the National Association of Securities Dealers, Inc., Listing Section, 1735 K Street, Washington, D.C. 20006.

As of the date of this proxy statement/prospectus/information statement, OncoGenex has filed a registration statement on Form S-4 to register with the SEC the OncoGenex common stock that OncoGenex will issue to Achieve stockholders in the merger. This proxy statement/prospectus/information statement is a part of that registration statement and constitutes a prospectus of OncoGenex, as well as a proxy statement of OncoGenex for its special meeting and an information statement for the purpose of Achieve for its written consent.

OncoGenex has supplied all information contained in this proxy statement/prospectus/information statement relating to OncoGenex and Achieve has supplied all information contained in this proxy statement/prospectus/information statement relating to Achieve.

If you would like to request documents from OncoGenex or Achieve, please send a request in writing or by telephone to either OncoGenex or Achieve at the following addresses:

OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway
Bothell, Washington 98011
Telephone: (425) 686-1500
Attn: Investor Relations

Achieve Life Science, Inc.
30 Sunnyside Avenue
Mill Valley, CA 94941
Telephone: (415) 670-9050
Attn: Chairman

If you are an OncoGenex stockholder and would like additional copies, without charge, of this proxy statement/prospectus/information statement or if you have questions about the merger, including the procedures for voting your shares, you should contact OncoGenex's proxy solicitor:

THE PROXY ADVISORY GROUP, LLC
844-997-7699 (toll free)
212-616-2180 (collect)

OTHER MATTERS

Stockholder Proposals to Be Presented at 2017 Annual Meeting

OncoGenex's bylaws provide that, for stockholder nominations to the board of director or other proposals to be considered at an annual meeting, the stockholder must give timely notice thereof in writing to our Secretary at 19820 North Creek Parkway, Suite 201, Bothell, Washington 98011, Attn: Secretary.

To be timely for OncoGenex's 2017 annual meeting of stockholders, a stockholder's notice must have been delivered to or mailed and received by OncoGenex's Secretary at is principal executive offices not earlier than the close of business on January 22, 2017 and not later than the close of business on February 21, 2017. However, in the event that the date of the 2017 annual meeting is more than 30 days before or more than 60 days after the anniversary date of the 2016 annual meeting, notice by the stockholder must be delivered (i) no earlier than the close of business on the 120th day prior to the 2017 annual meeting and (ii) no later than the close of business on the later of the 90th day prior to the 2017 annual meeting or the close of business on the 10th day following the day on which a public announcement of the date of the 2017 annual meeting is first made by OncoGenex. A stockholder's notice to OncoGenex's Secretary must set forth as to each matter the stockholder proposes to bring before the annual meeting the information required by our bylaws.

Stockholder proposals submitted pursuant to Rule 14a-8 under the Exchange Act and intended to be presented at OncoGenex's 2017 annual meeting must have been received by OncoGenex not later than December 18, 2016 in order to have been considered for inclusion in its proxy materials for its 2017 annual meeting of stockholders. However, if the date of the 2017 annual meeting changes by more than 30 days from the date of the 2016 annual meeting, then the deadline is a reasonable time before OncoGenex begins to print and send its proxy materials.

OncoGenex Pharmaceuticals, Inc.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of

OncoGenex Pharmaceuticals, Inc.

We have audited the accompanying consolidated balance sheets of **OncoGenex Pharmaceuticals, Inc.** (the "Company") as of December 31, 2016 and 2015, and the related consolidated statements of loss and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of **OncoGenex Pharmaceuticals, Inc.** at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), **OncoGenex Pharmaceuticals, Inc.'s** internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated February 23, 2017 expressed an unqualified opinion thereon.

Vancouver, Canada
February 23, 2017

/s/ ERNST & YOUNG LLP
Chartered Professional Accountants

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of

OncoGenex Pharmaceuticals, Inc.

We have audited **OncoGenex Pharmaceuticals, Inc.'s** (the "Company") internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). **OncoGenex Pharmaceuticals, Inc.'s** management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying "Management's Report on Internal Control over Financial Reporting". Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, **OncoGenex Pharmaceuticals, Inc.** maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of **OncoGenex Pharmaceuticals, Inc.** as of December 31, 2016 and 2015, and the related consolidated statements of loss and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2016 and our report dated February 23, 2017 expressed an unqualified opinion thereon.

Vancouver, Canada
February 23, 2017

/s/ ERNST & YOUNG LLP
Chartered Professional Accountants

OncoGenex Pharmaceuticals, Inc.

Consolidated Balance Sheets

(In thousands, except per share and share amounts)

	December 31, 2016	December 31, 2015
ASSETS		
Current assets:		
Cash and cash equivalents *[note 5]*	$ 15,233	$ 34,310
Short-term investments *[note 5]*	10,230	20,876
Interest receivable	32	111
Amounts receivable	478	14
Prepaid expenses	954	1,987
Total current assets	**26,927**	**57,298**
Restricted cash *[note 5]*	272	272
Property and equipment, net *[note 6]*	258	602
Other assets *[note 8]*	13	37
Total assets	**$ 27,470**	**$ 58,209**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 2,121	$ 1,343
Accrued liabilities other	2,442	641
Accrued clinical liabilities	3,415	9,966
Accrued compensation	188	1,267
Current portion of long-term obligations *[note 12]*	57	52
Lease termination liability *[note 7]*	—	1,250
Deferred collaboration revenue *[note 4]*	—	5,040
Warrant liability *[note 5 and note 10]*	232	1,105
Total current liabilities	**8,455**	**20,664**
Long-term obligations, less current portion *[note 12]*	49	105
Total liabilities	**8,504**	**20,769**
Commitments and contingencies *[note 4 and note 12]*		
Stockholders' equity:		
Common stock, $0.001 par value, 75,000,000 shares authorized, 30,059,514 and 29,846,991 issued at December 31, 2016 and December 31, 2015, respectively, and 30,025,521 and 29,812,998 outstanding at December 31, 2016 and December 31, 2015, respectively	29	29
Additional paid-in capital	213,239	211,590
Accumulated deficit	(196,942)	(176,811)
Accumulated other comprehensive income	2,640	2,632
Total stockholders' equity	**18,966**	**37,440**
Total liabilities and stockholders' equity	**$ 27,470**	**$ 58,209**
Subsequent events *[note 15]*		

See accompanying notes.

OncoGenex Pharmaceuticals, Inc.

Consolidated Statements of Loss and Comprehensive Loss

(In thousands, except per share and share amounts)

	Year Ended December 31,		
	2016	2015	2014
COLLABORATION REVENUE ***[note 4]***	**$ 5,062**	**$ 18,160**	**$ 27,116**
EXPENSES			
Research and development	14,788	25,108	46,224
General and administrative	8,933	11,805	10,625
Restructuring costs (recovery) *[note 13]*	2,206	—	(267)
Recovery of lease termination loss *[note 12]*	(1,250)	—	—
Litigation settlement *[note 12]*	1,375	—	—
Asset impairment charge *[note 6]*	202	—	—
Total operating expenses	26,254	36,913	56,582
OTHER INCOME (EXPENSE)			
Interest income	203	119	35
Other income (expense)	(13)	(64)	(19)
Warrant issuance costs	—	—	(531)
Gain on warrants *[note 5 and note 10[e]]*	873	1,897	3,741
Total other income	1,063	1,952	3,226
Net loss	$ (20,129)	$ (16,801)	$ (26,240)
OTHER COMPREHENSIVE INCOME			
Net unrealized gain (loss) on securities	8	10	(21)
Total other comprehensive income (loss)	8	10	(21)
Comprehensive loss	$ (20,121)	$ (16,791)	$ (26,261)
Basic and diluted net loss per common share *[note 10 [g]]*	$ (0.67)	$ (0.64)	$ (1.45)
Shares used in computation of basic and diluted net loss per common share *[note 10 [g]]*	29,949,432	26,147,344	18,098,799

See accompanying notes.

OncoGenex Pharmaceuticals, Inc.

Consolidated Statements of Stockholders' Equity

(In thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total, Stockholders' Equity
	Shares	Amount				
Balance, January 1, 2014	14,707,886	$ 15	$ 168,242	$ 2,643	$ (133,689)	37,211
Stock-based compensation expense	—	—	3,860	—	—	3,860
Stock option exercises	10,000	—	30	—	—	30
Restricted Stock Unit Settlements	53,971	—	—	—	—	—
Performance Restricted Stock Unit Settlements	149,177	—	—	—	—	—
Performance Restricted Stock Unit Settlements withheld and retired to treasury	(9,226)	—	—	—	(29)	(29)
Shares issued - ATM Financing	809,214	—	2,860	—	—	2,860
Shares issued in July 2014 Financing	5,559,866	6	16,369	—	—	16,375
Warrant Exercises	1,340,538	1	12	—	—	13
Net loss	—	—	—	—	(26,240)	(26,240)
Other comprehensive income (loss)	—	—	—	(21)	—	(21)
Balance, December 31, 2014	22,621,426	22	191,373	2,622	(159,958)	34,059
Stock-based compensation expense	—	—	2,328	—	—	2,328
Stock option exercises	5,359	—	14	—	—	14
Restricted Stock Unit Settlements	186,991	—	—	—	—	—
Performance Restricted Stock Unit Settlements	82,410	—	—	—	—	—
Performance Restricted Stock Unit Settlements withheld and retired to treasury	(24,750)	—	—	—	(52)	(52)
Shares issues - Lincoln Park Capital	6,941,562	7	17,875	—	—	17,882
Net loss	—	—	—	—	(16,801)	(16,801)
Other comprehensive income (loss)	—	—	—	10	—	10
Balance, December 31, 2015	29,812,998	29	211,590	2,632	(176,811)	37,440
Stock-based compensation expense	—	—	1,649	—	—	1,649
Restricted Stock Unit Settlements	212,523	—	—	—	(2)	(2)
Net loss	—	—	—	—	(20,129)	(20,129)
Other comprehensive income (loss)	—	—	—	8	—	8
Balance, December 31, 2016	30,025,521	$ 29	$ 213,239	$ 2,640	$ (196,942)	$ 18,966

See accompanying notes.

OncoGenex Pharmaceuticals, Inc.

Consolidated Statements of Cash Flows

(In thousands)

	Year Ended December 31,		
	2016	2015	2014
Operating Activities:			
Net loss	$(20,129)	$ (16,801)	$(26,240)
Adjustments to reconcile net loss to net cash used in operating activities:			
Gain on warrants *[note 5 and note 10[e]]*	(873)	(1,897)	(3,741)
Warrant issuance costs	—	—	531
Depreciation	188	244	223
Asset impairment charge *[note 6]*	202	—	—
Stock-based compensation *[note10[c]]*	1,649	2,328	3,860
Restructuring gain *[note 7]*	—	—	(3,517)
Changes in operating assets and liabilities:			
Interest receivable	79	2	105
Amounts receivable	(464)	5,662	2,981
Prepaid expenses and other assets	1,057	1,167	3,944
Accounts payable	778	1,271	(67)
Accrued liabilities other	1,801	(222)	363
Accrued clinical liabilities	(6,551)	(3,714)	2,178
Accrued compensation	(1,079)	(66)	(372)
Restricted cash	—	(21)	63
Excess lease liability *[note 7]*	—	(194)	(785)
Lease obligation	(51)	100	(84)
Lease termination fees *[note 12]*	(1,250)	(2,000)	3,250
Deferred collaboration revenue *[note 4]*	(5,040)	5,040	—
Net cash used in operating activities	(29,683)	(9,101)	(17,308)
Financing Activities:			
Proceeds from the exercise of stock options	—	14	30
Proceeds from ATM Financing, net of issuance costs	—	17,629	2,874
Taxes paid related to net share settlement of equity awards	(2)	(52)	(29)
Issuance of common shares, net of share issuance costs	—	—	22,372
Net cash provided by (used in) financing activities	(2)	17,591	25,247
Investing Activities:			
Purchase of investments	(36,504)	(24,368)	(19,446)
Proceeds from sale of investments	—	1,003	—
Proceeds from maturities of investments	47,158	21,659	24,894
Purchase of property and equipment	(46)	(371)	(82)
Net cash provided by (used in) investing activities	10,608	(2,077)	5,366
Effect of exchange rate changes on cash	—	—	(1)
Net increase (decrease) in cash and cash equivalents	(19,077)	6,413	13,304
Cash and cash equivalents at beginning of year	34,310	27,897	14,593
Cash and cash equivalents at end of year	$ 15,233	$ 34,310	$ 27,897
Supplemental Disclosure of Cash Flow Information:			
Property and equipment received and accrued but not yet paid	$ —	$ 218	$ —

See accompanying notes.

OncoGenex Pharmaceuticals, Inc.

Notes to Consolidated Financial Statements

(In thousands, except per share and share amounts)

1. NATURE OF BUSINESS AND BASIS OF PRESENTATION

OncoGenex Pharmaceuticals, Inc. (referred to as "OncoGenex," "we," "us," or "our") is committed to the development and commercialization of new therapies that address treatment resistance in cancer patients. We were incorporated in the state of Delaware and are headquartered in Bothell, Washington and have a subsidiary in Vancouver, British Columbia.

Basis of Presentation

The consolidated financial statements include the accounts of OncoGenex and our wholly owned subsidiary, OncoGenex Technologies Inc., or OncoGenex Technologies. All intercompany balances and transactions have been eliminated.

Liquidity

We have historically experienced recurring losses from operations that have generated an accumulated deficit of $196.9 million through December 31, 2016. At December 31, 2016, we had cash, cash equivalents and short-term investments of $25.5 million.

2. ACCOUNTING POLICIES

Significant Accounting Policies

Use of Estimates

The preparation of consolidated financial statements in conformity with United States generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and notes thereto. Actual results could differ from these estimates. Estimates and assumptions principally relate to estimates of the fair value of our warrant liability, the initial fair value and forfeiture rates of stock options issued to employees and consultants, the estimated compensation cost on performance restricted stock unit awards and clinical trial and manufacturing accruals, estimated useful lives of property, plant and equipment and estimates and assumptions in contingent liabilities.

Cash Equivalents

We consider all highly liquid investments with an original maturity of three months or less to be cash equivalents, which we consider as available for sale and carry at fair value, with unrealized gains and losses, if any, reported as accumulated other comprehensive income or loss, which is a separate component of stockholders' equity.

Short-Term Investments

Short-term investments consist of financial instruments purchased with an original maturity of greater than three months and less than one year. We consider our short-term investments as available-for-sale and carry them at fair value, with unrealized gains and losses except other than temporary losses, if any, reported as accumulated other comprehensive income or loss, which is a separate component of stockholders' equity. Realized gains and losses on the sale of these securities are recognized in net income or loss. The cost of investments sold is based on the specific identification method.

Fair value of financial instruments

The fair value of our cash equivalents and marketable securities is based on quoted market prices and trade data for comparable securities. We determine the fair value of our warrant liability based on the Black-Scholes pricing model and using considerable judgment, including estimating stock price volatility and expected warrant life. Other financial instruments including amounts receivable, accounts payable, accrued liabilities other, accrued clinical liabilities, accrued compensation and lease termination liability are carried at cost, which we believe approximates fair value because of the short-term maturities of these instruments.

Intellectual Property

The costs of acquiring intellectual property rights to be used in the research and development process, including licensing fees and milestone payments, are charged to research and development expense as incurred in situations where we have not identified an alternative future use for the acquired rights, and are capitalized in situations where we have identified an alternative future use. No costs associated with acquiring intellectual property rights have been capitalized to date. Costs of maintaining intellectual property rights are expensed as incurred.

Revenue Recognition

Revenue recognized to date is attributable to the upfront payment we received in the fourth quarter of 2009 pursuant to the collaboration agreement with Teva, as well as cash reimbursements from Teva for costs incurred by us under the clinical development plan. In April 2015, we and Teva entered into an agreement, or the Termination Agreement, pursuant to which the Collaboration Agreement was terminated and we regained rights to custirsen.

Pursuant to the Termination Agreement, Teva paid to us, as advanced reimbursement for certain continuing research and development activities related to custirsen, an amount equal to $27.0 million less approximately $3.8 million, which reduction represented a hold-back amount of $3.0 million and $0.8 million for certain third-party expenses incurred by Teva between January 1, 2015 and April 24, 2015, or Closing Date. Teva was permitted to deduct from the $3.0 million hold-back certain costs incurred after January 1, 2015 that arose after the Closing Date. Teva is responsible for expenses related to custirsen incurred pursuant to the Collaboration Agreement through December 31, 2014. We are responsible for certain custirsen-related expenses from and after January 1, 2015. Pursuant to the Termination Agreement, we received a nominal amount from the remaining hold-back after deductions by Teva for certain costs incurred after the Closing Date. We do not expect to receive any addition al amounts from Teva.

As a result of the termination of the Collaboration Agreement with Teva, we do not expect to earn any additional collaboration revenue beyond the amounts provided as advanced reimbursement for custirsen -related development expenses as set forth in the Termination Agreement. The advanced reimbursement payment made by Teva, as part of the Termination Agreement, was deferred and was recognized as collaboration revenue on a dollar for dollar basis as costs were incurred as part the of continuing research and development activities related to custirsen and certain other antisense inhibitors of clusterin. We have fully utilized the $23.2 million in advance reimbursement for custirsen-related development costs between January 1, 2015 and June 30, 2016.

Prior to the termination of the collaboration agreement, we and Teva shared certain custirsen-related development costs. We had spent the required $30 million in direct and indirect development costs, such as full-time equivalent (FTE) reimbursement for time incurred by our personnel for the benefit of the custirsen development plan. Teva funded all other expenses under the collaboration agreement including the three phase 3 clinical trials under the clinical development plan. On a quarterly basis Teva reimbursed all development expenses incurred in accordance with our clinical development plan. Our policy was to account for these reimbursements as Collaboration Revenue. For a summary description of the collaboration agreement with Teva see also Note 4.

The terminated collaboration agreement contained multiple elements and deliverables, and required evaluation pursuant to ASC 605-25,*Multiple-Element Arrangements*, or ASC 605-25. We evaluated the facts and circumstances of the collaboration agreement to determine whether we had obligations constituting deliverables under ASC 605-25. We concluded that we had multiple deliverables under the collaboration agreement, including deliverables relating to the grant of a technology license, and performance of manufacturing, regulatory and clinical development services in the U.S. and Canada, and estimated that the period in which it would perform those deliverables began in the fourth quarter of 2009 and was completed in the fourth quarter of 2012. Because we have been able to establish vendor specific objective evidence, or VSOE, of the fair value of the maintenance, regulatory, and clinical services, we concluded that these deliverables should be accounted as separate units of accounting under ASC 605-25. In establishing VSOE for the manufacturing, regulatory, and clinical development services, management relied on rates charged by other service providers providing similar development services.

Because we were not able to reliably estimate the fair value of the technology license, we used the residual value approach to determine the amount of revenue to recognize. Based on this approach, we recognized $22 million in 2009 relating to this element.

Property and Equipment

Property and equipment assets are recorded at cost less accumulated depreciation. Depreciation expense on assets acquired under capital lease is recorded within depreciation expense. Depreciation is recorded on a straight-line basis over the following periods:

Computer equipment	3 years
Furniture and fixtures	5 years
Machinery and equipment	5—10 years
Leasehold improvements and equipment under capital lease	Over the term of the lease

Impairment of Long-Lived Assets

We review long-lived assets for impairment whenever events or changes in circumstances indicate that the asset's carrying amount may not be recoverable. We conduct our long-lived asset impairment analyses in accordance with ASC 360-10-15, "Impairment or Disposal of Long-Lived Assets." ASC 360-10-15 requires us to group assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities and evaluate the asset group against the sum of the undiscounted future cash flows. If the undiscounted cash flows do not indicate the carrying amount of the asset is recoverable, an impairment charge is measured as the amount by which the carrying amount of the asset group exceeds its fair value based on discounted cash flow analysis or appraisals.

Income Taxes

Income taxes are accounted for under the liability method. Deferred tax assets and liabilities are recognized for the differences between the carrying values of assets and liabilities and their respective income tax bases and for operating losses and tax credit carry forwards. A valuation allowance is provided for the portion of deferred tax assets that is more likely than not to be unrealized. Deferred tax assets and liabilities are measured using the enacted tax rates and laws.

Scientific Research and Development Tax Credits

The benefits of tax credits for scientific research and development expenditures are recognized in the year the qualifying expenditure is made provided there is reasonable assurance of recoverability. The tax credits recorded are based on our estimates of amounts expected to be recovered and are subject to audit by taxation authorities.

The non-refundable tax credit reduces the tax provision; however, no reduction to the tax provision has been recorded to date as we record a full valuation allowance. All qualifying expenditures are eligible for non-refundable tax credits only.

Research and Development Costs

Research and development costs are expensed as incurred, net of related refundable investment tax credits, with the exception of non-refundable advanced payments for goods or services to be used in future research and development, which are capitalized in accordance with ASC 730, "Research and Development" and included within Prepaid Expenses or Other Assets depending on when the assets will be utilized.

Clinical trial expenses are a component of research and development costs. These expenses include fees paid to contract research organizations and investigators and other service providers, which conduct certain product development activities on our behalf. We use an accrual basis of accounting, based upon estimates of the amount of service completed. In the event payments differ from the amount of service completed, prepaid expense or accrued liabilities amounts are adjusted on the balance sheet. These expenses are based on estimates of the work performed under service agreements, milestones achieved, patient enrollment and experience with similar contracts. We monitor each of these factors to the extent possible and adjusts estimates accordingly.

Stock-Based Compensation

Effective January 1, 2006, we adopted the fair value recognition provisions of the ASC 718, "Stock Compensation", using the modified prospective method with respect to options granted to employees and directors. Under this transition method, compensation cost is recognized in the financial statements beginning with the effective date for all share-based payments granted after January 1, 2006 and for all awards granted prior to but not yet vested as of January 1, 2006. The expense is amortized on a straight-line basis over the graded vesting period.

Restricted Stock Unit Awards

We grant restricted stock unit awards that generally vest and are expensed over a four-year period. We also granted restricted stock unit awards that vest in conjunction with certain performance conditions to certain executive officers and key employees. At each reporting date, we evaluate whether achievement of the performance conditions is probable. Compensation expense is recorded over the appropriate service period based upon our assessment of accomplishing each performance provision or the occurrence of other events that may have caused the awards to accelerate and vest.

Segment Information

We follow the requirements of ASC 280, "Segment Reporting." We have one operating segment, dedicated to the development and commercialization of new cancer therapies, with operations located in Canada and the United States.

Comprehensive Income (Loss)

Comprehensive income (loss) is comprised of net income (loss) and other comprehensive income (loss). Other comprehensive income (loss) consists of unrealized gains and losses on our available-for-sale marketable securities. We report the components of comprehensive loss in the statement of stockholders' equity.

Loss per Common Share

Basic loss per common share is computed using the weighted average number of common shares outstanding during the period. Diluted loss per common share is computed in accordance with the treasury stock method. The

effect of potentially issuable common shares from outstanding stock options, restricted stock unit awards and warrants are anti-dilutive for all periods presented.

Warrants

We account for warrants pursuant to the authoritative guidance on accounting for derivative financial instruments indexed to, and potentially settled in, a company's own stock, on the understanding that in compliance with applicable securities laws, the warrants require the issuance of registered securities upon exercise and therefore do not sufficiently preclude an implied right to net cash settlement. We classify warrants on the consolidated balance sheet as a liability which is revalued at each balance sheet date subsequent to the initial issuance. We also have warrants classified as equity and these are not reassessed for their fair value at the end of each reporting period. Warrants classified as equity are initially measured at their fair value and recognized as part of stockholders' equity. Determining the appropriate fair-value model and calculating the fair value of registered warrants requires considerable judgment, including estimating stock price volatility and expected warrant life. The computation of expected volatility was based on the historical volatility of shares of our common stock for a period that coincides with the expected life of the warrants. A small change in the estimates used may have a relatively large change in the estimated valuation. We use the Black-Scholes pricing model to value the warrants. Changes in the fair value of the warrants classified as liabilities are reflected in the consolidated statement of loss as gain (loss) on revaluation of warrants.

Foreign Currency Translation

Our functional and reporting currency is the U.S. dollar. Revenues and expenses denominated in other than U.S. dollars are translated at average monthly rates.

The functional currency of our foreign subsidiary is the U.S. dollar. For this foreign operation, assets and liabilities denominated in other than U.S. dollars are translated at the period-end rates for monetary assets and liabilities and historical rates for non-monetary assets and liabilities. Revenues and expenses denominated in other than U.S. dollars are translated at average monthly rates. Gains and losses from this translation are recognized in the consolidated statement of loss.

Pending Adoption of Recent Accounting Pronouncements

On February 2016, the Financial Accounting Standards Board ("FASB") issued its new leases standard, ASU No. 2016-02, Leases (Topic 842) ("ASU 2016-02"). ASU 2016-02 is aimed at putting most leases on lessees' balance sheets, but it would also change aspects of lessor accounting. ASU 2016-02 is effective for public business entities for annual periods beginning after December 15, 2018 and interim periods within that year. This standard is expected to have a significant impact on our current accounting for our lease arrangements, particularly our current operating lease arrangements, as well as, disclosures. We are currently evaluating the impact of adoption on our financial position and results from operations.

In May 2014, the FASB, issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606): Revenue from Contracts with Customers, which guidance in this update will supersede the revenue recognition requirements in Topic 605, Revenue Recognition, and most industry-specific guidance when it becomes effective. ASU No. 2014-09 affects any entity that enters into contracts with customers to transfer goods or services or enters into contracts for the transfer of nonfinancial assets unless those contracts are within the scope of other standards. The core principal of ASU No. 2014-09 is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In doing so, companies will need to use more judgment and make more estimates than under current guidance. These may include identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. ASU No. 2014-09 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that

reporting period, which will be our fiscal year 2018 (or December 31, 2018), and entities can transition to the standard either retrospectively or as a cumulative-effect adjustment as of the date of adoption. Early adoption is permitted. We are currently in the process of evaluating the impact of adoption of ASU No. 2014-09 and cannot reasonably estimate how the adoption of the standard will impact our consolidated financial statements and related disclosures.

Recently Adopted Accounting Policies

In March 2016, the FASB issued ASU 2016-09,*Improvements to Employee Share-Based Payment Accounting.* ASU 2016-09 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. Some of the areas for simplification apply only to nonpublic entities. For public business entities, the amendments in this Update are effective for annual periods beginning after 15 December 2016, and interim periods within those annual periods. For all other entities, the amendments are effective for annual periods beginning after 15 December 2017, and interim periods within annual periods beginning after 15 December 2018. The adoption of this standard did not have a significant impact on our financial position or results of operations.

In November 2015, the FASB issued ASU No. 2015-17, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes. The standard requires that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. Entities are currently required to separate deferred income tax liabilities and assets into current and noncurrent amounts in a classified statement of financial position. The amendments, which require non-current presentation only (by jurisdiction), are effective for financial statements issued for annual periods beginning after December 15, 2016 with earlier application permitted as of the beginning of an interim or annual reporting period. The guidance is to be applied either prospectively to all deferred tax liabilities and assets or retrospectively to all periods presented. The adoption of this standard did not have a significant impact on our financial position or results of operations.

In February 2015, the FASB issued ASU 2015-02, Consolidation (Topic 810)—Amendments to the Consolidation Analysis. ASU 2015-02 eliminates the deferral of FAS 167 and makes changes to both the variable interest model and the voting model. For public business entities, the guidance is effective for annual and interim periods beginning after 15 December 2015. For nonpublic business entities, it is effective for annual periods beginning after 15 December 2016, and interim periods beginning after 15 December 2017. The adoption of this standard did not have a significant impact on our financial position or results of operations.

In January 2015, the FASB issued ASU 2015-01, Income Statement—Extraordinary and Unusual Items (Subtopic 225-20): Simplifying Income Statement Presentation by Eliminating the Concept of Extraordinary Items. ASU 2015-01 eliminates the concept of reporting extraordinary items, but retains current presentation and disclosure requirements for an event or transaction that is of an unusual nature or of a type that indicates infrequency of occurrence. Transactions that meet both criteria would now also follow such presentation and disclosure requirements. For all entities, the guidance is effective for annual periods, and interim periods within those annual periods, beginning after 15 December 2015. The adoption of this standard did not have a significant impact on our financial position or results of operations.

In August 2014, the Financial Accounting Standards Board (“FASB”) issued ASU No. 2014-15, Presentation of Financial Statements-Going Concern (Subtopic 2015-40) (“ASU 2014-15”). ASU 2014-15 provides guidance to U.S. GAAP about management’s responsibility to evaluate whether there is a substantial doubt about an entity’s ability to continue as a going concern and to provide related footnote disclosures. This new rule requires management to assess an entity’s ability to continue as a going concern by incorporating and expanding upon certain principles currently in the U.S. auditing standards. Specifically, ASU 2014-15 (1) defines the term substantial doubt, (2) requires an evaluation of every reporting period including interim periods, (3) provides principles for considering the mitigating effect of management’s plans, (5) requires an express statement and

other disclosures when substantial doubt is not alleviated, and (6) requires an assessment for a period of one year after the date that the financial statements are issued (or available to be issued). This guidance is effective for annual periods ending after December 15, 2016. The adoption of this standard did not have a significant impact on our financial statement disclosures.

3. FINANCIAL INSTRUMENTS AND RISK

For certain of our financial instruments, including cash and cash equivalents, amounts receivable, accounts payable, accrued liabilities other, accrued clinical liabilities, accrued compensation and lease termination liability carrying values approximate fair value due to their short-term nature. Our cash equivalents and short-term investments are recorded at fair value.

Financial risk is the risk to our results of operations that arises from fluctuations in interest rates and foreign exchange rates and the degree of volatility of these rates as well as credit risk associated with the financial stability of the issuers of the financial instruments. Foreign exchange rate risk arises as a portion of our investments which finance operations and a portion of our expenses are denominated in other than U.S. dollars.

We invest our excess cash in accordance with investment guidelines, which limit our credit exposure to any one financial institution or corporation other than securities issued by the U.S. government. We only invest in A (or equivalent) rated securities with maturities of one year or less. These securities generally mature within one year or less and in some cases are not collateralized. At December 31, 2016, the average days to maturity of our portfolio of cash equivalents and marketable securities was 45 days (December 31, 2015—61 days). We do not use derivative instruments to hedge against any of these financial risks.

4. COLLABORATION AGREEMENT

In December 2009, we, through our wholly-owned subsidiary, OncoGenex Technologies, entered into a collaboration agreement, or Collaboration Agreement, with Teva Pharmaceutical Industries Ltd., or Teva, for the development and global commercialization of custirsen (and related compounds), a pharmaceutical compound designed to inhibit the production of clusterin, a protein we believe is associated with cancer treatment resistance, or the Licensed Product. In December 2014, we and Teva agreed to terminate the Collaboration Agreement upon entry into a termination agreement. In April 2015, we and Teva entered into an agreement, or the Termination Agreement, pursuant to which the Collaboration Agreement was terminated and we regained rights to custirsen.

Pursuant to the Termination Agreement, Teva paid to us, as advanced reimbursement for certain continuing research and development activities related to custirsen, an amount equal to $27.0 million less approximately $3.8 million, which reduction represented a hold-back amount of $3.0 million and $0.8 million for certain third-party expenses incurred by Teva between January 1, 2015 and April 24, 2015, or Closing Date. Teva was permitted to deduct from the $3.0 million hold-back certain costs incurred after January 1, 2015 that arose after the Closing Date. Teva is responsible for expenses related to custirsen incurred pursuant to the Collaboration Agreement through December 31, 2014. We are responsible for certain custirsen-related expenses from and after January 1, 2015. Pursuant to the Termination Agreement, we received a nominal amount from the remaining hold-back after deductions by Teva for certain costs incurred after the Closing Date. We do not expect to receive any additional amounts from Teva.

In accordance with the Termination Agreement, Teva transferred certain third-party agreements for the phase 3 clinical trial in second-line chemotherapy in patients with non-small cell lung cancer, or ENSPIRIT, and custirsen development activities to us on the Closing Date. If any additional historical third-party agreements are discovered after the Closing Date and are used to conduct the ENSPIRIT study, then Teva will use commercially reasonable effort to assign such agreements to us and will be responsible for any costs invoiced under such agreements in excess of an aggregate of $0.1 million. We will be responsible for the initial $0.1 million of costs under such agreements.

All licenses granted by us to Teva under the Collaboration Agreement were terminated as of the Closing Date. In addition, Teva assigned to us certain patent applications related to custirsen and abandoned certain other patent applications as requested by us. Furthermore, Teva granted to us and our affiliates an exclusive license (except as to Teva and its affiliates) to any know-how created under and during the term of the Collaboration Agreement to develop, manufacture and commercialize custirsen and certain other antisense inhibitors of clusterin, as set forth in more detail in the Termination Agreement. Teva additionally granted to us and our affiliates a non-exclusive license to any intellectual property owned by or licensed to Teva and its affiliates, whether as of the Closing Date or thereafter, to develop, manufacture and commercialize custirsen, subject to certain limitations. Teva also agreed not to challenge the patentability, validity or enforceability of certain of our patents, and agreed not to file any patent applications covering custirsen or any antisense inhibitor of clusterin for 18 months after the Closing Date. We are responsible for any such expenses incurred from and after January 1, 2015. We do not owe Teva any development milestone payments or royalty payments on sales of custirsen, if any.

As part of the termination, Teva assigned to us the investigational new drug application for custirsen and submitted amendments, on a country-by-country basis, transferring sponsorship of the ENSPIRIT study to us. In July 2015, we became the sole trial sponsor for the ENSPIRIT study in all countries.

We and Teva released each other from all claims related to the Collaboration Agreement. In addition, we agreed to indemnify Teva and its affiliates against any third-party claims attributable to the development and commercialization of custirsen prior to the execution of the Collaboration Agreement and after the Closing Date, and any third-party claims attributable to the conduct of the phase 3 clinical trial in second-line chemotherapy in patients with metastatic castrate resistant prostate cancer, or AFFINITY. Teva agreed to indemnify us and our affiliates against any third-party claims attributable to the development of custirsen during the period between the execution of the Collaboration Agreement and the Closing Date, but excluding the AFFINITY study. The parties' indemnity obligations cover, among other things, third-party claims brought by current or former patients in the relevant studies and patient product liability claims.

Revenue for the year ended December 31, 2016 was $5.1 million, which consists of recognition of deferred collaboration revenue representing our efforts in the development of custirsen. As of June 30, 2016, the full amount of the advanced reimbursement payment was recognized into collaboration revenue. The advanced reimbursement payment made by Teva, as part of the Termination Agreement, was deferred and recognized as collaboration revenue on a dollar for dollar basis as costs were incurred as part of the continuing research and development activities related to custirsen.

Ionis and UBC License Agreements

In January 2017, we discontinued further development of OGX-225. We provided a notice of discontinuance to Ionis, notifying them that we have discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. We intend to also terminate the UBC license agreement related to OGX-225 provided that Ionis does not exercise its reversion rights within 90 days of the notice of discontinuance. If Ionis exercises its reversion rights related to OGX-225, we believe Ionis will assume the rights and obligations under the UBC license agreement.

In November 2016, we provided a notice of discontinuance to Ionis, or the Notice of Discontinuance, and a letter of termination to UBC, or the Letter of Termination, notifying the parties that we have discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. We believe that all financial obligations, other than continuing mutual indemnification obligations and our requirement to pay for out-of-pocket patent expenses incurred up to the date of termination and for abandoning the custirsen patents and patent applications, under all agreements with Ionis and UBC, including the Ionis settlement agreement, are no longer owed and no further payments are due.

Under the license agreements with Ionis and UBC, we were required to pay royalties to each of Ionis and UBC based on a percentage of net sales. We did not make any royalty payments to either Ionis or UBC in 2016. In

addition, pursuant to the terms of the agreements with Ionis, we were required to pay to Ionis up to 20% of all non-royalty revenue (defined to mean revenue not based on net sales of products) we receive from third parties.

In May and November 2015, we received communications from Ionis requesting payment of 30% of the $23.2 million paid by Teva under the Termination Agreement, as well as 30% of any amounts paid by Teva upon release of the $3.0 million holdback amount. In January 2016, Ionis filed a lawsuit and claimed that we were in breach of the license agreement for failing to pay Ionis a share of the advance reimbursement payment from Teva and other non-monetary consideration received from Teva in connection with the termination of the Collaboration Agreement. Ionis sought damages and a declaratory judgment that, based on our alleged breach, Ionis has the right to terminate the license agreement.

In August 2016, we and Ionis settled this lawsuit. Pursuant to the settlement, we paid to Ionis a $1.4 million upfront payment. In addition, under the settlement agreement, we were required to pay to Ionis additional success-based payments of up to an amount that does not exceed $5.0 million based on, (i) an additional 5% royalty on net sales of custirsen and (ii) 50% of any money we receive related to the sale, license or any other commercial transaction involving custirsen, subject to certain limitations. As a result of the Notice of Discontinuance, we believe that all financial obligations under the settlement agreement are no longer owed and no further payments are due.

5. FAIR VALUE MEASUREMENTS

Assets and liabilities recorded at fair value in the balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair value. For certain of our financial instruments including amounts receivable and accounts payable the carrying values approximate fair value due to their short-term nature.

ASC 820 “Fair Value Measurements and Disclosures,” specifies a hierarchy of valuation techniques based on whether the inputs to those valuation techniques are observable or unobservable. In accordance with ASC 820, these inputs are summarized in the three broad level listed below:

- Level 1—Quoted prices in active markets for identical securities.
- Level 2—Other significant inputs that are observable through corroboration with market data (including quoted prices in active markets for similar securities).
- Level 3—Significant unobservable inputs that reflect management’s best estimate of what market participants would use in pricing the asset or liability.

As quoted prices in active markets are not readily available for certain financial instruments, we obtain estimates for the fair value of financial instruments through third-party pricing service providers.

In determining the appropriate levels, we performed a detailed analysis of the assets and liabilities that are subject to ASC 820.

We invest our excess cash in accordance with investment guidelines that limit the credit exposure to any one financial institution other than securities issued by the U.S. Government. These securities are not collateralized and mature within one year.

A description of the valuation techniques applied to our financial instruments measured at fair value on a recurring basis follows.

Financial Instruments

Cash

Significant amounts of cash are held on deposit with large well established U.S. and Canadian financial institutions.

U.S. Government and Agency Securities

U.S. Government Securities. U.S. government securities are valued using quoted market prices. Valuation adjustments are not applied. Accordingly, U.S. government securities are categorized in Level 1 of the fair value hierarchy.

U.S. Agency Securities. U.S. agency securities are comprised of two main categories consisting of callable and non-callable agency issued debt securities. Non-callable agency issued debt securities are generally valued using quoted market prices. Callable agency issued debt securities are valued by benchmarking model-derived prices to quoted market prices and trade data for identical or comparable securities. Actively traded non-callable agency issued debt securities are categorized in Level 1 of the fair value hierarchy. Callable agency issued debt securities are categorized in Level 2 of the fair value hierarchy.

Corporate and Other Debt

Corporate Bonds and Commercial Paper. The fair value of corporate bonds and commercial paper is estimated using recently executed transactions, market price quotations (where observable), bond spreads or credit default swap spreads adjusted for any basis difference between cash and derivative instruments. The spread data used are for the same maturity as the bond. If the spread data does not reference the issuer, then data that reference a comparable issuer are used. When observable price quotations are not available, fair value is determined based on cash flow models with yield curves, bond or single name credit default swap spreads and recovery rates based on collateral values as significant inputs. Corporate bonds and commercial paper are generally categorized in Level 2 of the fair value hierarchy; in instances where prices, spreads or any of the other aforementioned key inputs are unobservable, they are categorized in Level 3 of the hierarchy.

Warrants

As of December 31, 2016, we recorded a $0.2 million warrant liability. We reassess the fair value of the common stock warrants classified as liabilities at each reporting date utilizing a Black-Scholes pricing model. Inputs used in the pricing model include estimates of stock price volatility, expected warrant life and risk-free interest rate. The computation of expected volatility is based on the historical volatility of shares of our common stock for a period that coincides with the expected life of the warrants that are classified as liabilities. Warrants that are classified as liabilities are categorized in Level 3 of the fair value hierarchy. A small change in the estimates used may have a relatively large change in the estimated valuation. Warrants that are classified as equity are not considered liabilities and therefore are not reassessed for their fair values at each reporting date.

The following table presents the changes in fair value of our total Level 3 financial liabilities for the year ended December 31, 2016. During the twelve months ended December 31, 2016, no common stock warrants were issued that were classified as liabilities (in thousands):

	Liability at December 31, 2015	Issuance of Warrants	Unrealized Gain on warrants	Liability at December 31, 2016
Warrant liability	$ 1,105	$ —	$ (873)	$ 232

The following table presents information about our assets and liabilities that are measured at fair value on a recurring basis, and indicates the fair value hierarchy of the valuation techniques we utilized to determine such fair value (in thousands):

December 31, 2016	Level 1	Level 2	Level 3	Total
Assets				
Cash	$ 1,800	$ —	$ —	$ 1,800
Money market securities (cash equivalents)	11,931	—	—	11,931
Corporate bonds and commercial paper (cash equivalents)	1,502	—	—	1,502
Government securities	2,000	—	—	2,000
Restricted cash (Note 12)	272	—	—	272
Corporate bonds and commercial paper (short term investments)	—	8,230	—	8,230
Total assets	**$17,505**	**$8,230**	**$ —**	**$25,735**
Liabilities				
Warrants	$ —	$ —	$ 232	$ 232

December 31, 2015	Level 1	Level 2	Level 3	Total
Assets				
Cash	$ 14,034	$ —	$ —	$ 14,034
Money market securities (cash equivalents)	20,276	—	—	20,276
Restricted cash (Note 12)	272	—	—	272
Corporate bonds and commercial paper	—	20,876	—	20,876
Total assets	$ 34,582	$ 20,876	$ —	$ 55,458
Liabilities				
Warrants	$ —	$ —	$ 1,105	$ 1,105

Cash and cash equivalents and short term investments (in thousands):

December 31, 2016	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Cash	$ 1,800	$ —	$ —	$ 1,800
Money market securities	11,931	—	—	11,931
Corporate bonds and commercial paper	1,502	—	—	1,502
Total cash and cash equivalents	$ 15,233	$ —	$ —	$ 15,233
Money market securities (restricted cash)	272	—	—	272
Total restricted cash	$ 272	$ —	$ —	$ 272
Corporate bonds and commercial paper	8,231	—	(1)	8,230
Government securities	2,000	—	—	2,000
Total short-term investments	$ 10,231	$ —	$ (1)	$ 10,230

December 31, 2015	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Cash	$ 14,034	$ —	$ —	$ 14,034
Money market securities	20,276	—	—	20,276
Total cash and cash equivalents	$ 34,310	$ —	$ —	$ 34,310
Money market securities (restricted cash)	272	—	—	272
Total restricted cash	$ 272	$ —	$ —	$ 272
Corporate bonds and commercial paper	20,885	—	(9)	20,876
Total short-term investments	$ 20,885	$ —	$ (9)	$ 20,876

Our gross realized gains and losses on sales of available-for-sale securities were not material for the years ended December 31, 2016 and 2015.

All securities included in cash and cash equivalents have maturities of 90 days or less at the time of purchase. All securities included in short-term investments have maturities of within one year of the balance sheet date. The cost of securities sold is based on the specific identification method.

We only invest in A (or equivalent) rated securities with maturities of one year or less. We do not believe that there are any other than temporary impairments related to our investment in marketable securities at December 31, 2016, given the quality of the investment portfolio, its short-term nature, and subsequent proceeds collected on sale of securities that reached maturity.

6. PROPERTY AND EQUIPMENT

Property and equipment consisted of the following (in thousands):

	Cost	Accumulated Depreciation	Net Book Value
December 31, 2016			
Computer equipment	$ 657	$ 567	$ 90
Furniture and fixtures	172	167	5
Machinery and equipment	—	—	—
Leasehold improvements	262	167	95
Computer software	502	439	63
Equipment under capital lease	114	109	5
Total property and equipment	$1,707	$ 1,449	$ 258
December 31, 2015			
Computer equipment	$ 628	$ 490	$ 138
Furniture and fixtures	172	163	9
Machinery and equipment	218	1	217
Leasehold improvements	257	99	158
Computer software	494	425	69
Equipment under capital lease	114	103	11
Total property and equipment	$1,883	$ 1,281	$ 602

Impairment of Long-Lived Assets

We review long-lived assets for impairment whenever events or changes in circumstances indicate that the asset's carrying amount may not be recoverable. We conduct our long-lived asset impairment analyses in accordance with ASC 360-10-15, "Impairment or Disposal of Long-Lived Assets." ASC 360-10-15 requires us to

group assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities and evaluate the asset group against the sum of the undiscounted future cash flows. If the undiscounted cash flows do not indicate the carrying amount of the asset is recoverable, an impairment charge is measured as the amount by which the carrying amount of the asset group exceeds its fair value based on discounted cash flow analysis or appraisals.

In the fourth quarter of 2016, we concluded that we had a triggering event requiring assessment of impairment for certain of our long-lived assets in conjunction with our restructuring actions announced in October 2016. As a result, we reviewed our long-lived assets for impairment and recorded a $0.2 million impairment charge, representing the entire amount of the then carrying value of the machinery and equipment, on our statement of loss. The full amount of the impairment charge related to drug product manufacturing equipment.

7. EXCESS LEASE LIABILITY

On August 21, 2008, Sonus Pharmaceuticals, Inc., or Sonus, completed a transaction ("the Arrangement") with OncoGenex Technologies Inc., or OncoGenex Technologies, whereby Sonus acquired all of the outstanding preferred shares, common shares and convertible debentures of OncoGenex Technologies. Sonus then changed its name to OncoGenex Pharmaceuticals, Inc. Prior to the Arrangement, Sonus entered into a non-cancellable lease arrangement for office space located in Bothell, Washington, which is considered to be in excess of our current requirements. The liability was computed as the present value of the difference between the remaining lease payments due less the estimate of net sublease income and expenses and had been accounted for in accordance with ASC 805-20, "Business Combinations -Identifiable Assets and Liabilities, and Any Non-controlling Interest." Effective 2014, we entered into a Lease Termination Agreement with the landlord for the office space in Bothell such that the lease terminated effective March 1, 2015. Under the Lease Termination Agreement, we paid BMR- 217TH Place LLC ("BMR") a $2.0 million termination fee on the Termination Date. We agreed to pay BMR an additional termination fee of $1.3 million within 30 days after we (i) meet the primary endpoint for our phase 3 clinical trial for the treatment of second line metastatic CRPC with custirsen and (ii) close a transaction or transactions pursuant to which we receive funding in an aggregate amount of at least $20.0 million. As a result of the Lease Termination Agreement, we have recorded the lease termination fees and have made an adjustment to remove the excess lease liability. We re-assessed that the likelihood of meeting both contingent events is no longer possible due to not achieving the primary endpoint on our AFFINITY trial. As a result, we have reversed the $1.3 million in lease termination liability on our balance sheet during the third quarter of 2016 and recognized a recovery on our statement of loss.

8. OTHER ASSETS

Other assets include prepaid amounts related to clinical trials that will not be utilized in the next 12 months and deposits paid for office space in accordance with the terms of the operating lease agreements.

9. INCOME TAX

[a] The reconciliation of income tax attributable to operations computed at the statutory tax rate to income tax expense is as follows. OncoGenex Technologies, a Canadian corporation, which is subject to combined Canadian federal and provincial statutory tax rates for December 31, 2016, 2015, and 2014 of 26.0%, 26.0%, and 26.0%, respectively. Following the reverse takeover by OncoGenex Technologies of Sonus Pharmaceuticals, Inc. (which subsequently changed its name to OncoGenex Pharmaceuticals, Inc.) in 2008, OncoGenex Technologies became a wholly owned subsidiary of OncoGenex Pharmaceuticals, which is a Delaware incorporated company subject to US Federal Statutory rates of 34% for all three years presented.

For the purposes of estimating the tax rate in effect at the time that deferred tax assets and liabilities are expected to reverse, we used the furthest out available future tax rate in the applicable jurisdictions. For the years ended

December 31, 2016, 2015 and 2014 the future Canadian enacted rates we used were 26%, 26%, and 26%, respectively, while for the US the future enacted rate we used was 34% for all three periods presented.

[b] At December 31, 2016, we have investment tax credits of $2.6 million (2015—$2.3 million) available to reduce future Canadian income taxes otherwise payable. We also have non-capital loss carryforwards of $115.9 million (2015—$100.4 million) available to offset future taxable income in Canada and federal net operating loss carryforwards of $158.4 million (2015—$151.9 million) to offset future taxable income in the United States.

Under Section 382 of the Internal Revenue Code of 1986, substantial changes in our ownership may limit the amount of net operating loss carryforwards and development tax credit carryforwards that could be utilized annually in the future to offset taxable income. Any such annual limitation may significantly reduce the utilization of the net operating losses and tax credits before they expire. A preliminary 382 limitation review has been undertaken but a formal study has never been completed. The results of any future study could indicate that the U.S. losses may be materially limited; however, the amount of such limitation cannot be reasonably quantified at this time, but may be significant. In each period since our inception, we have recorded a valuation allowance for the full amount of our deferred tax asset, as the realization of the deferred tax asset is uncertain.

(In thousands)	2016	2015	2014
Income taxes at statutory rates (at a rate of 34% for all periods presented)	$(6,844)	$(5,712)	$(8,922)
Expenses not deducted for tax purposes	(67)	(14)	(452)
Effect of tax rate changes on deferred tax assets and liabilities	(3)	(13)	(9)
Rate differential on foreign earnings	972	689	1,445
Reduction (increase) in benefit of operating losses	196	(32)	441
Reduction in the benefit of other tax attributes	—	—	—
Investment tax credits	(252)	(297)	(357)
Change in valuation allowance	6,203	5,114	7,854
Book to tax return adjustments	(205)	265	—
Other		—	—
Income tax expense	$ —	$ —	$ —

As a result, we have not recognized any federal or state income tax benefit in our statement of operations. The initial public offering of common stock by us in 1995 caused an ownership change pursuant to applicable regulations in effect under the Internal Revenue Code of 1986. Therefore, our use of losses incurred through the date of ownership change will be limited during the carryforward period and may result in the expiration of net operating loss carryforwards in the United States before utilization.

The investment tax credits and non-capital losses and net operating losses for income tax purposes expire as follows (in thousands):

	Investment Tax Credits	Net Operating Losses	Non-capital Losses
2016	—	—	—
2017	—	—	—
2018	150	10,795	—
2019	102	32	—
2020	76	2,745	—
2021	69	400	—
2022	105	11,766	—
2023	96	10,785	—
2024	111	16,814	—
2025	144	2,062	—
2026	400	27,157	7,335
2027	173	22,225	4,949
2028	390	12,648	8,020
2029	317	4,358	(9)
2030	346	5,034	6,288
2031	608	6,200	12,121
2032	505	8,418	17,278
2033	411	2,366	23,240
2034	492	2,609	17,077
2035	328	5,342	3,120
2036	286	6,635	16,531
	$ 5,109	$ 158,391	$115,950

In addition, we have unclaimed tax deductions of approximately $14.6 million related to scientific research and experimental development expenditures available to carry forward indefinitely to reduce Canadian taxable income of future years. We also have research and development tax credits of $2.4 million available to reduce future taxes payable in the United States. The research and development tax credits expire between 2018 and 2036.

[c] Significant components of our deferred tax assets as of December 31 are shown below (in thousands):

The potential income tax benefits relating to these deferred tax assets have not been recognized in the accounts as their realization did not meet the requirements of “more likely than not” under the liability method of tax allocation. Accordingly, a valuation allowance has been recorded and no deferred tax assets have been recognized as at December 31, 2016 and 2015.

	2016	2015
Deferred tax assets:		
Tax basis in excess of book value of assets	$ 6,483	$ 6,308
Non-capital loss carryforwards	84,358	77,746
Research and development deductions and credits	7,969	7,484
Stock options	3,743	3,448
Restructuring liability	624	474
Other	112	1,627
Total deferred tax assets	103,289	97,087
Valuation allowance	$ (103,289)	$ (97,087)
Net deferred tax assets	—	—

[d] Under ASC 740, the benefit of an uncertain tax position that is more likely than not of being sustained upon audit by the relevant taxing authority must be recognized at the largest amount that is more likely than not to be sustained. No portion of the benefit of an uncertain tax position may be recognized if the position has less than a 50% likelihood of being sustained.

A reconciliation of the unrecognized tax benefits of uncertain tax positions for the year ended December 31, 2016 is as follows (in thousands):

	Year ended December 31,		
	2016	2015	2014
Balance at January 1	$2,055	$ 2,039	$2,007
Additions based on tax positions related to the current year	16	16	32
Additions based on tax positions related to prior years	—	—	—
Balance at December 31	$2,071	$ 2,055	$2,039

As of December 31, 2016, unrecognized benefits of approximately $2.0 million, if recognized, would affect our effective tax rate, and would reduce our deferred tax assets.

Our accounting policy is to treat interest and penalties relating to unrecognized tax benefits as a component of income taxes. As of December 31, 2016 and December 31, 2015 we had no accrued interest and penalties related to income taxes.

We are subject to taxes in Canada and the U.S. until the applicable statute of limitations expires. Tax audits by their very nature are often complex and can require several years to complete.

Tax Jurisdiction	Years open to examination
Canada	2008 to 2016
US	2013 to 2016

10. COMMON STOCK

[a] Authorized

75,000,000 authorized common voting share, par value of $0.001, and 5,000,000 preferred shares, par value of $0.001.

[b] Issued and outstanding shares

At-The-Market Issuance Sales Agreement

In June 2013, we entered into an At-the-Market Issuance Sales Agreement, or Sales Agreement, with MLV & Co. LLC, or MLV, under which we may offer and sell shares of our common stock having aggregate sales proceeds of up to $25 million from time to time through MLV as our sales agent. Sales of our common stock through MLV, if any, will be made by any method permitted that is deemed an “at the market” offering as defined in Rule 415 under the Securities Act of 1933, as amended, including by means of ordinary brokers’ transactions on The NASDAQ Capital Market or otherwise at market prices prevailing at the time of sale, in block transactions, or as otherwise agreed upon by us and MLV. MLV will use commercially reasonable efforts to sell our common stock from time to time, based upon instructions from us (including any price, time or size limits or other customary parameters or conditions we may impose). We will pay MLV a commission of up to 3.0% of the gross sales proceeds of any shares of common stock sold through MLV under the Sales Agreement.

We are not obligated to make any sales of common stock under the Sales Agreement. The offering of our shares of common stock pursuant to the Sales Agreement will terminate upon the earlier of (i) the sale of all common stock subject to the Sales Agreement or (ii) termination of the Sales Agreement in accordance with its terms.

On April 27, 2015, we and MLV terminated the Sales Agreement. We were not subject to any termination penalties related to termination of the Sales Agreement. Under the Sales Agreement, we offered and sold 809,214 shares of our common stock with MLV & Co. LLC. These sales resulted in gross proceeds to us of approximately $3.0 million and offering expenses of $0.1 million.

July 2014 Registered Offering

On July 2, 2014, we completed an underwritten registered offering pursuant to which we sold 5,559,866 Series A units at a price per unit of $3.48 and 1,340,538 Series B units at a price per unit of $3.47.

Each Series A unit consisted of one share of common stock and a Series A warrant to purchase up to one-half of one share of common stock at an initial exercise price of $4.00 per share. Each Series A warrant is exercisable at any time on or after the date of issuance until the fifth anniversary of the issuance of the Series A warrants.

Each Series B unit consisted of a Pre-Funded Series B warrant to purchase up to one share of common stock at an initial exercise price of $0.01 per share and a Series B warrant to purchase up to one-half of one share of common stock at an initial exercise price of $4.00 per share. Each Pre-Funded Series B warrant and Series B warrant is exercisable at any time on or after the date of issuance until the fifth anniversary of the issuance of the Pre-Funded Series B warrants and Series B warrants, respectively.

We received net proceeds of approximately $22.4 million, after deducting underwriting discounts and commissions and offering expenses. Gross proceeds of $24.0 million and underwriting discounts and commissions and offering expenses of $1.6 million were allocated as follows:

	Common Stock	Series B Pre-funded Common Stock Warrants	Series A Common Stock Warrants	Series B Common Stock Warrants
Units Issued	5,559,866	1,340,538	2,779,933	670,269
Gross Proceeds (in thousands)	$ 14,084	$ 3,387	$ 5,261	$ 1,268
Underwriting discount and offering expense (in thousands)	$ 885	$ 213	$ 428	$ 103

The Series A and Series B common stock warrants are classified as liabilities. The underwriting discount and offering expenses allocated to the Series A and Series B common stock warrants have been expensed in the Consolidated Statement of Loss.

The common stock and Series B prefunded common stock warrants are classified as equity. The underwriting discount and offering expenses allocated to the common stock and Series B prefunded common stock warrants have been charged against the allocated gross proceeds.

Purchase Agreement and Financing with Lincoln Park Capital

On April 30, 2015, we and Lincoln Park Capital Fund, LLC, or LPC, entered into a share and unit purchase agreement, or Purchase Agreement, pursuant to which we have the right to sell to LPC up to $18.0 million in shares of our common stock, par value $0.001 per share, subject to certain limitations and conditions set forth in the Purchase Agreement.

Pursuant to the Purchase Agreement, LPC initially purchased 956,938 Series A-1 Units at a purchase price of $2.09 per unit, with each Series A-1 Unit consisting of (a) one share of Common Stock and (b) one warrant to purchase one-quarter of a share of Common Stock at an exercise price of $2.40 per share, or Series A-1

Warrant. Each Series A-1 Warrant is exercisable six months following the issuance date until the date that is five years and six months after the issuance date and is subject to customary adjustments. The Series A-1 Warrants were issued only as part of the Series A-1 Units in the initial purchase of $2.0 million and no warrants were issued in connection with any other purchases of common stock under the Purchase Agreement.

After the initial purchase, as often as every business day over the 24-month term of the Purchase Agreement, and up to an aggregate amount of an additional $16.0 million (subject to certain limitations) of shares of common stock, we had the right, from time to time, in our sole discretion and subject to certain conditions to direct LPC to purchase up to 125,000 shares of common stock with such amounts increasing as the closing sale price of our common stock as reported on The NASDAQ Capital Market increased. The purchase price of shares of common stock pursuant to the Purchase Agreement was based on prevailing market prices of common stock at the time of sales without any fixed discount, and we controlled the timing and amount of common stock sold to LPC. In addition, we had the right to direct LPC to purchase additional amounts as accelerated purchases if on the date of a regular purchase the closing sale price of the common stock is not below $1.50 per share. As consideration for entering into the Purchase Agreement, we issued to LPC 126,582 shares of common stock; no cash proceeds were received from the issuance of these shares.

From April 30, 2015 through August 13, 2015, we offered and sold 6,814,980 shares of our common stock pursuant to our Purchase Agreement with LPC. These sales resulted in gross proceeds to us of approximately $18.0 million and offering expenses of $0.4 million. As of August 13, 2015, no further amounts remained available for sale under this offering program

Stock Option Exercises

During the year ended December 31, 2016, we did not issue any shares of common stock to satisfy stock option exercises and issued 217,296 shares of common stock to satisfy and restricted stock unit settlements, respectively, compared with the issuance of 5,359 and 269,401 shares of common to satisfy stock option exercises and restricted stock unit settlements, respectively, for the years ended December 31, 2015. For the year ended December 31, 2014, we issued 10,000 and 203,148 shares of common stock to satisfy stock option exercises and restricted stock unit settlements, respectively.

[c] Stock options

As at December 31, 2016 we had reserved, pursuant to our 2010 Performance Incentive Plan, 3,634,058 common shares for issuance upon exercise of stock options and settlement of restricted stock units by employees, directors, officers and consultants of ours, of which 1,378,805 are reserved for options currently outstanding, 253,221 are reserved for restricted stock units currently outstanding and 2,002,032 are available for future equity award grants under our 2010 Performance Incentive Plan. As of December 31, 2015 3,876,151 shares were available for equity award grants under our 2010 Performance Incentive Plan.

2010 Performance Incentive Plan

At our 2013 Annual Meeting of Stockholders held on May 24, 2013, our stockholders approved an amendment to our 2010 Performance Incentive Plan, or the 2010 Plan. As a result of this amendment, the 2010 Plan was further amended to provide for an increase in the total shares of common stock available for issuance under the 2010 Plan from 1,050,000 to 2,050,000. At our 2014 Annual Meeting of Stockholders held on May 29, 2014, our stockholders approved an amendment to our 2010 Performance Incentive Plan. As a result of this amendment, the 2010 Plan was amended to provide for an increase in the total shares of common stock available for issuance under the 2010 Plan from 2,050,000 to 2,800,000. At our 2015 Annual Meeting of Stockholders held on May 21, 2015, our stockholders approved an amendment to our 2010 Performance Incentive Plan. As a result of this amendment, the 2010 Plan was amended to provide for an increase in the total shares of common stock available for issuance under the 2010 Plan from 2,800,000 to 4,300,000.

Under the plan, we may grant options to purchase common shares or restricted stock units to our employees, directors, officers and consultants. The exercise price of the options is determined by our board of directors but will be at least equal to the fair value of the common shares at the grant date. The options vest in accordance with terms as determined by our board of directors, typically over three to four years for options issued to employees and consultants, and over one to three years for members of our board of directors. The expiry date for each option is set by our board of directors with a maximum expiry date of ten years from the date of grant. In addition, the 2010 Plan allows for accelerated vesting of outstanding equity awards in the event of a change in control. The terms for accelerated vesting, in the event of a change in control, is determined at our discretion and defined under the employment agreements for our officers and certain of our employees.

Options remain outstanding under a number of share option plans that had been approved by shareholders prior to the approval of the 2010 Performance Incentive Plan: (a) the 2007 Performance Incentive Plan (2007 Plan).

ASC 718 Compensation—Stock Compensation

We recognize expense related to the fair value of our stock-based compensation awards using the provisions of ASC 718. We use the Black-Scholes option pricing model as the most appropriate fair value method for our stock options and recognize compensation expense for stock options on a straight-line basis over the requisite service period. In valuing our stock options using the Black-Scholes option pricing model, we make assumptions about risk-free interest rates, dividend yields, volatility and weighted average expected lives, including estimated forfeiture rates of the options.

The expected life was calculated based on the simplified method as permitted by the SEC's Staff Accounting Bulletin 110, Share-Based Payment. We consider the use of the simplified method appropriate because we believe our historical stock option exercise activity may not be indicative of future stock option exercise activity based upon the structural changes to our business that may occur as a result of merger with Achieve Life Science, Inc. and the potential impact on future stock option exercise activity. The expected volatility of options granted was calculated based on the historical volatility of the shares of our common stock. The risk-free interest rate is based on a U.S. Treasury instrument whose term is consistent with the expected life of the stock options. In addition to the assumptions above, as required under ASC 718, management made an estimate of expected forfeitures and is recognizing compensation costs only for those equity awards expected to vest. Forfeiture rates are estimated using historical actual forfeiture rates. These rates are adjusted on a quarterly basis and any change in compensation expense is recognized in the period of the change. We have never paid or declared cash dividends on our common stock and do not expect to pay cash dividends in the foreseeable future.

The estimated fair value of stock options granted in the respective periods was determined using the Black-Scholes option pricing model using the following weighted average assumptions:

	2016	2015	2014
Risk-free interest rates	1.51%	1.76%	1.83%
Expected dividend yield	0%	0%	0%
Expected life	5.3 years	5.8 years	5.9 years
Expected volatility	72%	63%	82%

The weighted average fair value of stock options granted during the year ended December 31, 2016, 2015 and 2014 was $0.53, $1.10 and $6.52 per share, respectively.

The results for the periods set forth below included stock-based compensation expense in the following expense categories of the consolidated statements of loss (in thousands):

	Years ended December 31,		
	2016	2015	2014
Research and development	$ 803	$1,111	$1,893
General and administrative	846	1,217	1,967
Total stock-based compensation	$1,649	$2,328	$3,860

Options vest in accordance with terms as determined by our board of directors, typically over three or four years for employee and consultant grants and over one or three years for board of director option grants. The expiry date for each option is set by our board of directors with, which is typically seven to ten years. The exercise price of the options is determined by our board of directors but is at least equal to the fair value of the share at the grant date.

Stock option transactions and the number of stock options outstanding are summarized below:

	Number of Optioned Common Shares	Weighted Average Exercise Price
Balance, January 1, 2014	**1,007,491**	**$ 11.39**
Granted	382,097	8.97
Expired	(12,169)	18.93
Exercised	(10,000)	3.00
Forfeited	(84,000)	12.14
Balance, December 31, 2014	**1,283,419**	**$ 10.55**
Granted	502,047	1.91
Expired	(247,766)	2.96
Exercised	(5,359)	2.69
Forfeited	(53,120)	14.37
Balance, December 31, 2015	**1,479,221**	**$ 8.78**
Granted	1,635,250	0.86
Expired	(994,059)	1.00
Exercised	—	—
Forfeited	(741,607)	1.96
Balance, December 31, 2016	**1,378,805**	**$ 8.62**

The following table summarizes information about stock options outstanding at December 31, 2016 regarding the number of ordinary shares issuable upon: (1) outstanding options and (2) vested options.

(1) Number of common shares issuable upon exercise of outstanding options:

Exercise Prices	Number of Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (in years)
$1.00 - $1.54	122,010	$ 1.00	9.36
$1.55 - $1.88	337,298	1.86	7.96
$1.89 - $3.40	118,874	2.62	6.98
$3.41 - $11.70	78,447	7.70	5.72
$11.71 - $11.86	185,105	11.79	6.66
$11.87 - $11.99	144,699	11.95	5.64
$12.00 - $13.08	132,650	12.88	4.97
$13.09 - $16.40	135,576	15.64	3.54
$16.41 - $21.67	63,446	17.74	3.56
$21.68 - $22.28	60,700	22.28	2.67
	1,378,805	**$ 8.62**	**6.30**

(2) Number common shares issuable upon exercise of vested options:

Exercise Prices	Number of Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (in years)
$1.00 - $1.54	510	$ 1.21	0.42
$1.55 - $1.88	184,008	1.86	7.74
$1.89 - $3.40	90,275	2.51	6.76
$3.41 - $11.70	75,217	7.69	5.78
$11.71 - $11.86	140,269	11.79	6.58
$11.87 - $11.99	141,951	11.95	5.64
$12.00 - $13.08	132,650	12.88	4.97
$13.09 - $16.40	135,503	15.64	3.54
$16.41 - $21.67	63,446	17.74	3.56
$21.68 - $22.28	60,700	22.28	2.67
	1,024,529	**$ 10.54**	**5.58**

As at December 31, 2016, the total unrecognized compensation expense related to stock options granted was $0.6 million, which is expected to be recognized into expense over a period of approximately 1.3 years.

The estimated grant date fair value of stock options vested during the years ended December 31, 2016, 2015 and 2014 was $1.0 million, $1.3 million and $1.9 million, respectively.

The aggregate intrinsic value of options exercised was calculated as the difference between the exercise price of the stock options and the fair value of the underlying common stock as of the date of exercise. The aggregate intrinsic value of options exercised for the years ended December 31, 2016, 2015 and 2014 was zero, $2,787 and $51,100, respectively. At December 31, 2016, the aggregate intrinsic value of the outstanding options was zero and the aggregate intrinsic value of the exercisable options was zero.

[d] Restricted Stock Unit Awards

We grant restricted stock unit awards that generally vest and are expensed over a four year period. We also grant restricted stock unit awards that vest in conjunction with certain performance conditions to certain executive officers and key employees. At each reporting date, we are required to evaluate whether achievement of the performance conditions is probable. Compensation expense is recorded over the appropriate service period based upon our assessment of accomplishing each performance provision. For the years ended December 31, 2016, 2015 and 2014, $0.7 million, $1.1 million and $2.2 million, respectively, of stock based compensation expense was recognized related to these awards.

The following table summarizes our restricted stock unit award activity during the years ended December 31, 2016, 2015 and 2014:

	Number of Shares	Weighted Average Grant Date Fair Value
Balance, January 1, 2014	**356,589**	**$ 12.06**
Granted	814,800	6.48
Vested	(199,887)	7.00
Forfeited or expired	(291,301)	10.93
Balance, December 31, 2014	**680,201**	**$ 7.34**
Granted	249,775	1.92
Vested	(269,401)	8.08
Forfeited or expired	(19,816)	7.27
Balance, December 31, 2015	**640,759**	**$ 4.92**
Granted	—	—
Vested	(217,296)	5.23
Forfeited or expired	(170,242)	5.07
Balance, December 31, 2016	**253,221**	**$ 4.56**

As of December 31, 2016, we had approximately $0.8 million in total unrecognized compensation expense related to our restricted stock unit awards which is to be recognized over a weighted-average period of approximately 1.4 years.

[e] Stock Warrants

The following is a summary of outstanding warrants to purchase common stock at December 31, 2016:

	Total Outstanding and Exercisable	Exercise price per Share	Expiration Date
(1) Series A Warrants issued in July 2014 financing	2,779,933	4.00	July 2019
(2) Series B Warrants issued in July 2014 financing	670,269	4.00	July 2019
(3) Series A-1 Warrants issued in April 2015 financing	239,234	2.40	October 2020

No warrants were exercised for the year ended December 31, 2016. For the year ended December 31, 2015, all the Pre-Funded Series B warrants were exercised at a per unit price of $0.01, a total of 1,340,538 shares of common stock were issued for proceeds of $13,405. No Series A and Series B warrants from the July 2014 financing were exercised in 2015.

The Series A and Series B warrants issued in the July 2014 financing are classified as liabilities. The estimated fair value of warrants issued and classified as liabilities is reassessed at each reporting date using the Black-Scholes option pricing model. The Series A-1 Warrants issued in the April 2015 financing are classified as equity

and are not reassessed for their fair value at the end of each reporting date. The following assumptions were used to value the warrants that are classified as liabilities on the following reporting dates:

	As of December 31,	
Series A and Series B Warrant Valuation Assumptions	**2016**	**2015**
Risk-free interest rates	1.33%	1.42%
Expected dividend yield	0%	0%
Expected life	2.50 years	3.50 years
Expected volatility	95%	77%

[f] 401(k) Plan

We maintain a 401(k) plan. Following the Arrangement, the Board of Directors of OncoGenex amended and restated the 401(k) plan whereas our securities are no longer offered as an investment option. This amendment prohibits the inclusion of our shares in the 401(k) plan, as well as any match of our shares to employee contributions.

[g] Loss per common share

The following table presents the computation of basic and diluted net loss attributable to common stockholders per share (in thousands, except per share and share amounts):

	Years ended December 31,		
	2016	**2015**	**2014**
Numerator			
Net loss	$ (20,129)	$ (16,801)	$ (26,240)
Denominator			
Weighted average number of common shares outstanding	29,949,432	26,147,344	18,098,799
Basic and diluted net loss per common share	**$ (0.67)**	**$ (0.64)**	**$ (1.45)**

As of December 31, 2016, 2015 and 2014 a total of 5.3 million, 5.8 million and 7.0 million options, restricted stock units and warrants, respectively, have not been included in the calculation of potential common shares as their effect on diluted per share amounts would have been anti-dilutive.

11. RELATED PARTY TRANSACTIONS

In January 2016, Scott Cormack, our Chief Executive Officer, married Michelle Griffin, a consultant to us. For the twelve months ended December 31, 2016, we paid Ms. Griffin approximately $0.5 million for consulting services pursuant to a consulting agreement entered into in 2013 and amended thereafter. We also granted Ms. Griffin options to purchase 135,000 shares of common stock in 2016. In addition, pursuant to the consulting agreement with Ms. Griffin, as at December 31, 2016, we had an accrued termination liability of approximately $0.4 million.

12. COMMITMENTS AND CONTINGENCIES

The following table summarizes our contractual obligations as of December 31, 2016 (in thousands):

	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Bothell office operating lease	$376	$ 281	$ 95	$ —	$ —
Vancouver office operating lease	$ 68	$ 68	$ —	$ —	$ —
UBC license maintenance fees	$ 26	$ 4	$ 9	$ 9	$ 4
Leased equipment	$ 22	$ 19	$ 3	$ —	$ —
Total	$492	$ 372	$ 107	$ 9	$ 4

Teva Pharmaceutical Industries Ltd.

In December 2009, we, through our wholly-owned subsidiary, OncoGenex Technologies, entered into a Collaboration Agreement with Teva for the development and global commercialization of custirsen (and related compounds). In December 2014, we and Teva agreed to terminate the Collaboration Agreement upon entry into a Termination Agreement. In April 2015, we and Teva entered into the Termination Agreement, pursuant to which the Collaboration Agreement was terminated and we regained rights to custirsen. Pursuant to the Termination Agreement, Teva paid to us, as advanced reimbursement for certain continuing research and development activities related to custirsen, an amount equal to $27.0 million less approximately $3.8 million, which reduction represented a hold-back amount of $3.0 million and $0.8 million for certain third-party custirsen-related development expenses incurred by Teva between January 1, 2015 and the Closing Date. Pursuant to the Termination Agreement, we received a nominal amount from the remaining hold-back after deductions by Teva for certain costs incurred after the Closing Date. We do not expect to receive any additional amounts from Teva.

All licenses granted by us to Teva under the Collaboration Agreement were terminated as of the Closing Date.

In accordance with the Termination Agreement, Teva transferred certain third-party agreements for the ENSPIRIT study and custirsen development activities to us on the Closing Date. If any additional historical third-party agreements are discovered after the Closing Date and are used to conduct the ENSPIRIT study, then Teva will use commercially reasonable effort to assign such agreements to us and will be responsible for any costs invoiced under such agreements in excess of an aggregate of $0.1 million. We will be responsible for the initial $0.1 million of costs under such agreements.

Prior to the termination of the Collaboration Agreement, Teva made upfront payments in the aggregate amount of $50.0 million. Teva also acquired $10.0 million of our common stock at a premium under a separate Stock Purchase Agreement. We were required to contribute $30.0 million in direct and indirect costs towards the clinical development plan. We fulfilled our obligation to contribute $30.0 million towards the development of custirsen. Teva was required to and did fund all additional expenses under the clinical development plan through December 31, 2014, after which date we took over responsibility for future costs following termination of our Collaboration Agreement. We do not owe, to Teva, any development milestone payments or royalty payments on sales of custirsen, if any.

Ionis Pharmaceuticals Inc. and University of British Columbia

Custirsen

In November 2016, we provided the Notice of Discontinuance to Ionis and the Letter of Termination to UBC, notifying the parties that we have discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. We believe that all financial obligations, other than continuing mutual indemnification obligations and our requirement to pay for out-of-pocket patent expenses incurred up to the date

of termination and for abandoning the custirsen patents and patent applications, under all agreements with Ionis and UBC, including the Ionis settlement agreement, are no longer owed and no further payments are due.

Under the license agreements with Ionis and UBC, we were required to pay royalties to each of Ionis and UBC based on a percentage of net sales. We did not make any royalty payments to either Ionis or UBC in the nine months ended September 30, 2016. In addition, pursuant to the terms of the agreements with Ionis, we were required to pay to Ionis up to 20% of all non-royalty revenue (defined to mean revenue not based on net sales of products) we receive from third parties.

In May and November 2015, we received communications from Ionis requesting payment of 30% of the $23.2 million paid by Teva under the Termination Agreement, as well as 30% of any amounts paid by Teva upon release of the $3.0 million holdback amount. In January 2016, Ionis filed a lawsuit and claimed that we were in breach of the license agreement for failing to pay Ionis a share of the advance reimbursement payment from Teva and other non-monetary consideration received from Teva in connection with the termination of the Collaboration Agreement. Ionis sought damages and a declaratory judgment that, based on our alleged breach, Ionis has the right to terminate the license agreement.

In August 2016, we and Ionis settled this lawsuit. Pursuant to the settlement, we paid to Ionis a $1.4 million upfront payment. In addition, under the settlement agreement, we were required to pay to Ionis additional success-based payments of up to an amount that does not exceed $5.0 million based on, (i) an additional 5% royalty on net sales of custirsen and (ii) 50% of any money we receive related to the sale, license or any other commercial transaction involving custirsen, subject to certain limitations. As a result of the Notice of Discontinuance, we believe that all financial obligations under the settlement agreement are no longer owed and no further payments are due.

Apatorsen and OGX-225

We are obligated to pay milestone payments of up to CAD $1.6 million and $7.75 million pursuant to license agreements with UBC and Ionis, respectively, upon the achievement of specified product development milestones related to apatorsen and OGX-225 and low to mid-single digit royalties on future product sales.

Unless otherwise terminated, the Ionis agreements for apatorsen will continue until the later of 10 years after the date of the first commercial product sale, or the expiration of the last to expire of any patents required to be licensed in order to use or sell the product, unless we discontinue apatorsen and Ionis does not elect to unilaterally continue development. The Ionis agreement for OGX-225 will continue into perpetuity unless we discontinue development of the product and Ionis does not elect to unilaterally continue development.

Lease Arrangements

We have an operating lease agreement for office space being used in Vancouver, Canada, which expires in September 2017. Pursuant to the operating lease agreement, we have the option to terminate the lease early without penalty at any time after January 1, 2017 so long as we provide three months prior written notice to the landlord.

The future minimum annual lease payments under the Vancouver lease is $68,000 in 2017.

In February 2015, we entered into an office lease with Grosvenor International (Atlantic Freeholds) Limited, or Landlord, pursuant to which we leased approximately 11,526 square feet located at 19820 North Creek Parkway, Bothell, Washington, 98011, commencing on February 15, 2015. The initial term of this lease will expire on April 30, 2018, with an option to extend the term for one approximately three-year period. Our monthly base rent for the premises will start at approximately $18,000 commencing on May 1, 2015 and will increase on an annual basis up to approximately $20,000. We received a construction allowance, for leasehold improvements that we made, of approximately $0.1 million. We will be responsible for 17% of taxes levied upon the building during each calendar year of the term. We delivered to the Landlord a letter of credit in the amount of $0.2 million, in

accordance with the terms if the lease, which the Landlord may draw upon for base rent or other damages in the event of our default under this lease. In August 2015 we exercised our expansion option for an additional 2,245 square feet of office space, which commenced on August 1, 2015.

The remaining future minimum annual lease payments under the terminated Bothell lease are as follows (in thousands):

2017	281
2018	95
Total	**$376**

Consolidated rent and operating expense relating to both the Vancouver, Canada and Bothell, Washington offices for years ended December 31, 2016, 2015 and 2014 was $0.6 million, $0.9 million and $2.8 million, respectively.

In February 2015, we entered into a Lease Termination Agreement with BMR pursuant to which we and BMR agreed to terminate our lease, dated November 21, 2006, as amended, for the premises located at 1522 217th Place S.E. in Bothell, Washington, or Terminated Lease, effective March 1, 2015. Under the Lease Termination Agreement, we paid BMR a $2.0 million termination fee. BMR drew approximately $0.1 million on our letter of credit with respect to its payment of deferred state sales tax and terminated the remaining balance of $0.2 million. BMR returned to us the security deposit under the Terminated Lease, less amounts deducted in accordance with the terms of the Terminated Lease, of $0.5 million.

Pursuant to the Lease Termination Agreement, an additional termination fee of $1.3 million would have been payable to BMR if we had (i) met the primary endpoint for our phase 3 clinical trial for the treatment of second line metastatic castrate resistant prostate cancer, or CRPC, with custirsen, or the AFFINITY Trial, and if we had (ii) closed a transaction or transactions pursuant to which we received funding in an aggregate amount of at least $20.0 million. As at December 31, 2014 and subsequent annual and interim reporting periods up to June 30, 2016, we had assessed that the likelihood of meeting both contingent events was probable and as a result, recognized the $1.3 million in lease termination liability on our balance sheet as at the end of those reporting periods. In August 2016, final survival results of our AFFINITY trial did not meet the primary endpoint of a statistically significant improvement in overall survival in men with metastatic CRPC. As at September 30, 2016, we had re-assessed that the likelihood of meeting both contingent events is no longer possible due to not achieving the primary endpoint on our AFFINITY trial. As a result, we have reversed the $1.3 million in lease termination liability on our balance sheet as at September 30, 2016 and recognized a recovery on our statement of loss.

Change in Control and Severance Agreements

Our officers and certain employees have agreements which provide for payouts in the event that we consummate a change in control. In addition, our officers and certain employees are also entitled to full vesting of their outstanding equity awards. These agreements also provide for customary severance compensation. As of December 31, 2016 and 2015 we did not consummate any change in control transaction. See also Note 13.

Guarantees and Indemnifications

We indemnify our officers, directors and certain consultants for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at its request in such capacity. The term of the indemnification period is equal to the officer's or director's lifetime.

The maximum amount of potential future indemnification is unlimited; however, we have obtained director and officer insurance that limits our exposure and may enable us to recover a portion of any future amounts paid. We believe that the fair value of these indemnification obligations is minimal. Accordingly, we have not recognized any liabilities relating to these obligations as of December 31, 2016.

We have certain agreements with certain organizations with which it does business that contain indemnification provisions pursuant to which it typically agrees to indemnify the party against certain types of third-party claims. We accrue for known indemnification issues when a loss is probable and can be reasonably estimated. There were no accruals for or expenses related to indemnification issues for any period presented.

Material Changes in Financial Condition

	December 31,	
(in thousands)	**2016**	**2015**
Total Assets	$ 27,470	$ 58,209
Total Liabilities	8,504	20,769
Total Equity	18,966	37,440

The decrease in assets at December 31, 2016 compared with December 31, 2015 was due to a decrease in cash and cash equivalents as these assets have been used to fund operations and a decrease in prepaid assets related to the drawdown of our escrow payments to our clinical research organization vendors. The decrease in liabilities at December 31, 2016 compared with December 31, 2015 was due to a decrease in clinical trial accruals associated with patient treatment costs in the AFFINITY trial, ENSPIRIT trial and our investigator sponsored trials evaluating apatorsen, lower deferred revenue as these amounts were recognized into collaboration revenue on a dollar for dollar basis as costs were incurred as part of the continuing research and development activities related to custirsen, the reversal of the lease termination liability and decrease in accrued compensation liabilities. This was partially offset by higher accrued liabilities other as a result of the severance associated with the restructurings announced in fiscal 2016.

13. RESTRUCTURE

Restructure

In February 2016, we committed to a plan to reduce operating expenses, which included a workforce reduction of 11 employees, representing approximately 27% of our employees prior to the reduction. We incurred approximately $0.4 million in expenses as a result of the workforce reduction, substantially all of which were severance costs.

In October 2016, we committed to a restructuring of an additional portion of our workforce in order to preserve our resources as we determine future strategic plans. As part of this restructuring, we eliminated 14 positions, representing approximately 48% of our workforce. We expect the restructuring to be substantially complete in the first quarter of 2017. As of December 31, 2016, we incurred approximately $1.1 million in restructuring costs, substantially all of which related to severance costs.

In November 2016, we committed to a further reduction in our workforce. We eliminated five positions and incurred approximately $0.7 million in expenses as a result of the workforce reduction, substantially all of which were severance costs.

	Total estimated costs	**Amounts settled to date**	**Accrued at December 31, 2016**
Restructuring Costs	$ 2,206	$ (708)	$ 1,498

14. QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

The following table summarizes the unaudited statements of operations for each quarter of 2016 and 2015 (in thousands, except per share amounts):

	March 31	June 30	September 30	December 31
2016				
Collaboration revenue	$ 2,940	$ 2,122	$ —	$ —
Research and development	4,642	4,662	3,782	1,702
General and administrative	2,299	2,475	1,864	2,295
Restructuring costs (recovery)	431	(8)	(31)	1,814
Recovery of lease termination loss	—	—	(1,250)	—
Litigation settlement	—	1,375	—	—
Asset impairment charge	—	—	—	202
Total expenses	7,372	8,504	4,365	6,013
Other income	725	(507)	675	170
Net loss	(3,707)	(6,889)	(3,690)	(5,843)
Basic and diluted net loss per share	$ (0.12)	$ (0.23)	$ (0.12)	$ (0.19)
2015				
Collaboration revenue	$ 1,374	$ 4,025	$ 6,737	$ 6,024
Research and development	3,673	6,545	8,303	6,587
General and administrative	2,698	3,067	3,125	2,915
Total expenses	6,371	9,612	11,428	9,502
Other income	480	(423)	141	1,756
Net loss	(4,517)	(6,010)	(4,550)	(1,722)
Basic and diluted net loss per share	$ 0.20	$ 0.26	$ 0.16	$ 0.06

15. SUBSEQUENT EVENTS

On January 5, 2017, we and Achieve entered into the Merger Agreement, pursuant to which Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of ours will merge with and into Achieve, or the First Merger, with Achieve becoming a wholly owned subsidiary of ours and the surviving company of the First Merger, or the Initial Surviving Corporation. Promptly following the First Merger, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc., or Merger Sub 2, a Delaware corporation and a wholly owned subsidiary of ours, with Merger Sub 2 continuing as the surviving entity as a direct wholly owned subsidiary of ours. The two mergers taken together, are intended to qualify as a "reorganization" within the meaning of Section 368(a)(2)(D) of the Internal Revenue Code of 1986, as amended. The surviving company is expected to be renamed Achieve Life Sciences, Inc. and is referred to herein as the "combined company." The Merger is expected to close mid-2017.

Subject to the terms and conditions of the Merger Agreement, at the closing of the First Merger, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of our common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's fully-diluted capitalization, as well as the payment of cash in lieu of fractional shares. Immediately following the effective time of the merger, our equityholders are expected to own approximately 25% of the outstanding capital stock of the combined company on a fully diluted basis, and the Achieve stockholders are expected to own approximately 75% of the outstanding capital stock of the combined company on a fully diluted basis.

Consummation of the merger is subject to certain closing conditions, including, among other things, approval by the stockholders of us and Achieve. The Merger Agreement contains certain termination rights for both us and

Achieve, and further provides that, upon termination of the Merger Agreement under specified circumstances, either party may be required to pay the other party a termination fee of $0.5 million. In addition, the Merger Agreement provides that if either party breaches certain covenants regarding alternative transactions to those contemplated by the Merger Agreement, the breaching party may be required to pay the other party a termination fee of $1.0 million. In connection with certain terminations of the Merger Agreement, either party may be required to pay the other party's third party expenses up to $0.5 million.

At the effective time of the First Merger, our Board of Directors is expected to consist of seven members, three of whom will be designated by us and four of whom will be designated by Achieve. We are expected to designate Scott Cormack, Stewart Parker and Martin Mattingly. Achieve is expected to designate Richard Stewart, Anthony Clarke and two other independent directors that have yet to be determined. Additionally, at the effective time of the First Merger, Richard Stewart, the current Chairman of Achieve, is expected to be the Chairman and Chief Executive Officer of the combined company; Anthony Clarke, the current Chief Scientific Officer of Achieve, is expected to be the Chief Scientific Officer of the combined company; and John Bencich, our Chief Financial Officer and Cindy Jacobs, our Chief Medical Officer, are expected to continue to serve the combined company in their respective roles.

In accordance with the terms of the Merger Agreement, (i) certain of our officers and directors, who collectively hold approximately 1.2 percent of the outstanding shares of our capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with Achieve, or the OncoGenex Support Agreements, and (ii) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with us, or the Achieve Support Agreements, and together with the OncoGenex Support Agreements, the Support Agreements. The Support Agreements include covenants as to the voting of such shares in favor of approving the transactions contemplated by the Merger Agreement and against actions that could adversely affect the consummation of the Merger.

The Support Agreements will terminate upon the earlier of the consummation of the First Merger or the termination of the Merger Agreement by its terms.

Concurrently and in connection with the execution of the Merger Agreement, (i) certain of our officers and directors, who collectively hold approximately 1.2 percent of the outstanding shares of our capital stock as of the close of business on January 4, 2017 and (ii) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into lock-up agreements with us, pursuant to which, subject to certain exceptions, each stockholder will be subject to a 180-day, or the Lock-Up Period, lock-up on the sale of shares of our capital stock, which Lock-Up Period shall begin upon the consummation of the First Merger.

We expect to issue contingent value rights, or each, a CVR and collectively, the CVRs, to our existing stockholders prior to the completion of the First Merger. One CVR will be issued for each share of our common stock outstanding as of the record date for such issuance. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the First Merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to our product candidate apatorsen, or the Milestones, upon the terms and subject to the conditions set forth in a contingent value rights agreement to be entered into between us, Achieve and an as of yet unidentified third party, as rights agent, or the CVR Agreement. The aggregate consideration to be distributed to the holders of the CVRs, if any, will be equal to 80% of the consideration received by the combined company as a result of the achievement of the Milestones less certain agreed to offsets, as determined pursuant to the CVR Agreement. Under the CVR Agreement, for a period of six months beginning in February 2017, we will use certain defined efforts to enter into an agreement with a third party regarding the development and/or commercialization of apatorsen. At the expiration of this six-month period, if a third party has not entered

into a term sheet for the development or commercialization of apatorsen, the combined company will no longer be contractually required to pursue an agreement regarding apatorsen and no consideration will be payable to the holders of CVRs.

We also entered into a letter agreement with Achieve, whereby we would pay, on behalf of Achieve, for transactions costs associated with the merger. In the event that the Merger Agreement is terminated and as a result of such termination we are required to pay to Achieve one or more termination fees, the total amount of termination fees we would owe is reduced by the amount of the transaction costs we would have paid on behalf of Achieve.

In January 2017, we discontinued further development of OGX-225. We provided a notice of discontinuance to Ionis, notifying them that we have discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. We intend to also terminate the UBC license agreement related to OGX-225 provided that Ionis does not exercise its reversion rights within 90 days of the notice of discontinuance.

Achieve Life Science, Inc.

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Years Ended December 31, 2016 and 2015

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Report of Independent Auditors

To the Board of Directors of
Achieve Life Science, Inc.

We have audited the accompanying consolidated financial statements of Achieve Life Science, Inc. and its subsidiaries (the Company), which comprise the consolidated balance sheets as of December 31, 2016 and December 31, 2015, and the related consolidated statements of loss and comprehensive loss, stockholders' equity, and cash flows and the related notes, which comprise a summary of significant accounting policies and other explanatory information for the year ended December 31, 2016 and the period from May 12, 2015 (the date of inception) to December 31, 2015.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Company's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Achieve Life Science, Inc. and its subsidiaries as of December 31, 2016 and December 31, 2015, and the results of its operations and its cash flows for the year ended December 31, 2016 and the period from May 12, 2015 (the date of inception) to December 31, 2015 in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

The accompanying consolidated financial statements have been prepared assuming the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has negative working capital and cash outflows from operating activities that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty. Our opinion is not modified with respect to this matter.

/s/ PricewaterhouseCoopers LLP

Vancouver, British Columbia
March 27, 2017

Achieve Life Science, Inc.

Consolidated Balance Sheets

(In thousands)

	December 31, 2016	2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 15	$ 67
Prepaid expenses	3	—
Total current assets	**18**	**67**
License agreement *[notes 3,4]*	2,755	2,977
Goodwill *[note 4]*	1,034	1,034
Total assets	**$ 3,807**	**$ 4,078**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 95	$ 72
Accrued liabilities *[note 7]*	1,121	452
Salaries payable *[note 7]*	1,028	404
Stockholder loans with related parties *[note 7]*	829	683
Total current liabilities	**3,073**	**1,611**
Deferred tax liability *[note 5]*	124	627
Total liabilities	**3,197**	**2,238**
Stockholders' equity:		
Common stock, $0.01 par value, 30,000 shares authorized, 21,230 issued and outstanding at December 31, 2016 and December 31, 2015, respectively	—	—
Additional paid-in capital	2,667	2,667
Accumulated deficit	(2,062)	(828)
Accumulated other comprehensive income	5	1
Total stockholders' equity	**610**	**1,840**
Total liabilities and stockholders' equity	**$ 3,807**	**$ 4,078**
Subsequent events *[note 9]*		
Liquidity and Going Concern Uncertainty *[note 1]*		

See accompanying notes.

Achieve Life Science, Inc.

Consolidated Statements of Loss and Comprehensive Loss

(In thousands)

	2016	2015
EXPENSES		
Research and development	$ 286	$ 107
General and administrative *[Note 7]*	1,428	1,116
Total operating expenses	1,714	1,223
OTHER INCOME (EXPENSE)		
Other expense	(24)	(12)
Net loss before income taxes	(1,738)	(1,235)
Recovery of deferred income taxes *[Note 5]*	(504)	(407)
Net loss	$(1,234)	$ (828)
OTHER COMPREHENSIVE INCOME		
Net unrealized gain on foreign exchange	4	1
Comprehensive loss	$(1,230)	$ (827)

See accompanying notes.

Achieve Life Science, Inc.

Consolidated Statements of Stockholders' Equity

(In thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total, Stockholders Equity
	Shares	Amount				
Balance, May 12, 2015 (date of incorporation)						
Common stock issued	11,730	$ —	$ —	$ —	$ —	$ —
Conversion of common stock held by Extab Corporation stockholders into common stock *[Note 6]*	5,000	—	667	—	—	667
Conversion of note payable into common stock*[Note 6]*	4,500	—	2,000	—	—	2,000
Net loss	—	—	—	—	(828)	(828)
Other comprehensive income	—	—	—	1	—	1
Balance, December 31, 2015	21,230	—	2,667	1	(828)	1,840
Net loss	—	—	—	—	(1,234)	(1,234)
Other comprehensive income	—	—	—	4	—	4
Balance, December 31, 2016	21,230	$ —	$ 2,667	$ 5	$ (2,062)	$ 610

See accompanying notes.

Achieve Life Science, Inc.

Consolidated Statements of Cash Flows

(In thousands)

	2016	2015
Operating Activities:		
Net loss	$(1,234)	$ (828)
Adjustments to reconcile net loss to net cash used in operating activities:		
Amortization *[note 3]*	223	140
Deferred income tax (recovery)	(504)	(407)
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	(2)	—
Accounts payable	22	57
Accrued liabilities	670	284
Salaries payable	623	404
Net cash used in operating activities	(202)	(350)
Investing Activities:		
Purchase of Extab Corporation common stock *[Note 4]*	—	(2,000)
Net cash used in investing activities	—	(2,000)
Financing Activities:		
Payments on loan	—	(272)
Stockholder loans *[Note 7]*	150	2,683
Net cash provided by financing activities	150	2,411
Net increase (decrease) in cash and cash equivalents	(52)	61
Cash and cash equivalents at beginning of year	67	6
Cash and cash equivalents at end of year	$ 15	$ 67
Supplemental Disclosure of Cash Flow Information:		
Interest expense accrued but not yet paid	$ 26	$ 11

See accompanying notes.

Achieve Life Science, Inc.

Notes to Consolidated Financial Statements

1. NATURE OF BUSINESS AND BASIS OF PRESENTATION

Achieve Life Science, Inc. (referred to as "Achieve" or "the Company") was incorporated in the State of Delaware on May 12, 2015, or inception date. Achieve is a pharmaceutical company developing cytisine. Cytisine is a smoking cessation treatment that has been approved and marketed in Central and Eastern Europe for more than 15 years. Since inception, Achieve has been primarily engaged in research and development, raising capital, building its management team and seeking additional patent approvals.

Basis of Presentation

The consolidated financial statements and accompanying notes are prepared in accordance with accounting principles generally accepted in the United States of America, or U.S. GAAP.

The consolidated financial statements include the accounts of Achieve, and two wholly owned subsidiaries Extab Corporation, or Extab, was incorporated in the State of Delaware on November 6, 2008 and Achieve Pharma U.K. Ltd., or Achieve Pharma, was incorporated in the United Kingdom, or U.K., on November 17, 2008. All intercompany balances and transactions have been eliminated.

Liquidity and Going Concern Uncertainty

Achieve has historically experienced recurring losses from operations that have generated an accumulated deficit of $2.1 million through December 31, 2016.

The accompanying financial statements have been prepared assuming Achieve will continue to operate as a going concern, which contemplates the realization of assets and liabilities and commitments in the normal course of business.

During the year ended December 31, 2016, Achieve incurred a net loss of $1.2 million and negative cash flows of $0.1 million. As of December 31, 2016, Achieve had a cash balance of $15,000, an accumulated deficit of $2.1 million, and a negative working capital balance of $3.1 million.

Substantial doubt exists as to the ability of Achieve to continue as a going concern. Achieve's ability to continue as a going concern is uncertain and dependent on Achieve's ability to consummate the pending merger agreement with OncoGenex Pharmaceuticals, Inc., or OncoGenex, announced on January 5, 2017 (Note 9), and/or obtain additional financing from alternative sources. There is no assurance that Achieve will consummate the pending merger agreement with OncoGenex or obtain financing from other sources. Management has, thus far, financed the operations through stockholder loans and debt financing (Note 7).

Management believes that if the OncoGenex merger does not occur, existing shareholders have sufficient capital available to contribute to operate Achieve through December 31, 2017, and intends to raise additional financing from alternative sources.

The consolidated financial statements do not include any adjustments to the amounts and classification of assets and liabilities that might be necessary should Achieve be unable to continue as a going concern. Such adjustments could be material.

2. ACCOUNTING POLICIES

Significant Accounting Policies

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and notes thereto. Actual results could differ from these estimates. Estimates and assumptions principally relate to estimates of the fair value of Achieve's intangible asset, taxes, contingent considerations, fair value, research and development accruals and business combination estimates.

Cash and Cash Equivalents

Cash and cash equivalents include all cash balances and highly liquid investments. Achieve considers all highly liquid investments with an original maturity of three months or less to be cash equivalents.

Fair Value of Assets and Liabilities

The Company uses a three-level hierarchy, which prioritizes, within the measurement of fair value, the use of market-based information over entity-specific information for fair value measurements based on the nature of inputs used in the valuation of an asset or liability as of the measurement date. Fair value focuses on an exit price and is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The inputs or methodology used for valuing financial instruments are not necessarily an indication of the risk associated with those financial instruments.

The three-level hierarchy for fair value measurements is defined as follows:

Level I:	Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
Level II:	Inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
Level III:	Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

An asset's or liability's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

Intangible Assets

Achieve's intangible assets are subject to amortization and are amortized using the straight-line method over their estimated period of benefit. Achieve evaluates the carrying amount of intangible assets periodically by taking into account events or circumstances that may warrant revised estimates of useful lives or that indicate the asset may be impaired.

Accounting for Impairment of Long-Lived Assets

Achieve reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the asset's carrying amount may not be recoverable, and conducts the long-lived asset impairment analyses in accordance with ASC 360-10-15, "Impairment or Disposal of Long-Lived Assets." ASC 360-10-15 requires Achieve to group assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities and evaluate the asset group against the sum of the undiscounted future cash flows. If the undiscounted cash flows do not indicate the carrying amount of the asset is recoverable, an impairment charge is measured as the amount by which the carrying amount of the asset group exceeds its fair value based on discounted cash flow analysis or appraisals.

Goodwill

Goodwill acquired in a business combination is assigned to the reporting unit that is expected to benefit from the combination as of the acquisition date. Goodwill is tested for impairment on an annual basis or, more frequently, if an event occurs or circumstances change that would more likely than not reduce the fair value of the reporting unit.

Revenue Recognition

Achieve has not recorded any revenues since its inception. However, in the future, Achieve may enter into agreements under which Achieve could be eligible to receive upfront payments for licenses or options to obtain licenses in the future, milestone payments that are generated from defined development events, as well as amounts for other research and development services under strategic alliance and collaboration agreements. In accordance with the SEC's Staff Accounting Bulletin Topic 13, revenue is recognized when all four of the following criteria are met: (i) persuasive evidence of an arrangement exists; (ii) products have been delivered or services rendered; (iii) the selling price is fixed or determinable; and (iv) collectability is reasonably assured. Multiple element arrangements are examined to determine whether the deliverables can be separated or must be accounted for as a single unit of accounting. A typical Achieve collaboration agreement would, for example, include a combination of upfront license fees, payments for research and development activities, milestone payments and royalties that are evaluated to determine whether each deliverable under the agreement has value to the customer on a stand-alone basis and whether reliable evidence of fair value for the deliverable exists. Deliverables in an arrangement that do not meet these separation criteria are treated as a single unit of accounting, generally applying applicable revenue recognition guidance for the final deliverable to the combined unit of accounting. Achieve will recognize revenue from non-refundable upfront license fees over the term of performance under any future collaboration agreement. When the performance period is not specified, Achieve will estimate the performance period based upon provisions contained within the agreement, such as the duration of the research or development term, the existence, or likelihood of achievement of development commitments and any other significant commitments. These advance payments are deferred and recorded as deferred revenue upon receipt, pending recognition, and are classified as a short-term or long-term liability in the accompanying consolidated balance sheets. Expected performance periods are reviewed periodically and, if applicable, the amortization period is adjusted which, Achieve may accelerate or decelerate revenue recognition. The timing of revenue recognition, specifically as it relates to the amortization of upfront license fees, is significantly influenced by Achieve's estimates.

Research and Development Costs

Research and development costs are expensed as incurred and include and are expected to include compensation and related benefits, stock-based compensation, license fees, facilities, and overhead costs. Achieve expects to make nonrefundable advance payments for goods and services that will be used in future research and development activities. These payments will be capitalized and recorded as expense in the period that Achieve receives the goods or when the services are performed.

Achieve will record and pay upfront and milestone payments to acquire contractual rights to licensed technology as research and development expenses when incurred if there is uncertainty in Achieve receiving future economic benefit from the acquired contractual rights. Achieve considers future economic benefits from acquired contractual rights to licensed technology to be uncertain until such a drug candidate is approved by the FDA or when other significant risk factors are abated.

Achieve makes estimates of its accrued expenses as of each balance sheet date in Achieve's consolidated financial statements based on certain facts and circumstances at that time. Accrued expenses for pre-clinical studies and clinical trials are based on estimates of costs incurred for services provided by consultants, CROs, manufacturing organizations, and for other trial related activities. Payments under agreements with external service providers will depend on a number of factors such as site initiation, patient screening, enrollment, delivery of reports, and other events. In accruing for these activities, Achieve will obtain information from various sources and estimates level of effort or expense allocated to each period. Adjustments to Achieve's research and development expenses may be necessary in future periods as its estimates change. As these activities are expected to be material to Achieve's overall financial statements, subsequent changes in estimates may result in a material change in its accruals. To date, Achieve has made no accrual for clinical trial or preclinical study costs.

Income Taxes

Income taxes are accounted for under the asset and liability method. Under this method, deferred income tax assets and liabilities are recorded based on the estimated future tax effects of differences between the financial statement and income tax basis of existing assets and liabilities. Deferred income taxes are classified as current or non-current, based on the classifications of the related assets and liabilities giving rise to the temporary differences. A valuation allowance is provided against the deferred income tax assets when realization is not reasonably assured.

Comprehensive Income (Loss)

Comprehensive income (loss) is comprised of net income (loss) and other comprehensive income (loss). In consolidating subsidiaries with a foreign functional currency, unrealized foreign currency translation adjustments are recorded as a component of other comprehensive income. Achieve reports the components of comprehensive loss in the statement of stockholders' equity.

Foreign Currency Translation

The reporting currency is the United States, or U.S., dollar. The functional currency of each entity is the US dollar with the exception of Achieve Pharma, a wholly owned subsidiary located in the U.K. that has a functional currency of British Pounds. Expenses denominated in other than U.S. dollars are translated at average annual rates.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2014-09,*Revenue from Contracts with Customers*, or ASU No. 2014-09, an updated standard on revenue recognition. ASU No. 2014-09 provides enhancements to the quality and consistency of how revenue is reported by companies while also improving comparability in the financial statements of companies reporting using International Financial Reporting Standards or U.S. GAAP. The main purpose of the new standard is for companies to recognize revenue to depict the transfer of goods or services to customers in amounts that reflect the consideration to which a company expects to be entitled in exchange for those goods or services. The new standard also will result in enhanced disclosures about revenue, provide guidance for transactions that were not previously addressed comprehensively and improve guidance for multiple-element arrangements. In July 2015, the FASB voted to approve a one-year deferral of the effective date of ASU No. 2014-09, which will be effective for Achieve in the first quarter of fiscal year 2018 and may be applied on a full retrospective or modified retrospective approach. Achieve is currently evaluating the impact of implementation and transition approach of ASU 2014 on its financial statements and related disclosures.

In March 2016, the FASB issued ASU No. 2016-08,*Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations*, or ASU No. 2016-08. The purpose of ASU No. 2016-08 is to clarify the implementation of guidance on principal versus agent considerations. For public entities, the amendments in ASU No. 2016-08 are effective for interim and annual reporting periods beginning after December 15, 2017. Achieve is currently evaluating the impact of ASU No. 2016-08 on its financial statements and related disclosures.

In November 2015, the FASB issued ASU No. 2015-17,*Balance Sheet Classification of Deferred Taxes*, or ASU No. 2015-17. ASU No. 2015-17 requires that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. ASU No. 2015-17 is effective for financial statements issued for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. Achieve currently does not believe the impact of adopting ASU No. 2014-15 will have a material impact on its financial statements and related disclosures.

In January 2016, the FASB issued ASU No. 2016-01,*Recognition and Measurement of Financial Assets and Financial Liabilities*, or ASU No. 2016-01. ASU No. 2016-01 requires equity investments to be measured at fair value with changes in fair value recognized in net income; simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment; eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet; requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes; requires an entity to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments; requires separate presentation of financial assets and financial liabilities by measurement category and form of financial assets on the balance sheet or the accompanying notes to the financial statements and clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets. ASU No. 2016-01 is effective for financial statements issued for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. Achieve is currently evaluating the impact of ASU No. 2016-01 on its financial statements and related disclosures.

In February 2016, the FASB issued ASU No. 2016-02,*Leases (Topic 842)*, or ASU 2016-02, which supersedes FASB Accounting Standards Codification, or ASC, Topic 840, Leases (Topic 840) and provides principles for the recognition, measurement, presentation and disclosure of leases for both lessees and lessors. The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease, respectively. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than twelve months regardless of classification. Leases with a term of twelve months or less will be accounted for similar to existing guidance for operating leases. The standard is effective for annual and interim periods beginning after December 15, 2018, with early adoption permitted upon issuance. Achieve is currently evaluating the impact of ASU 2016-02 on its financial statements and related disclosures.

In April 2016, the FASB issued ASU No. 2016-10,*Revenue from Contracts with Customer*, or ASU No. 2016-10. The new guidance is an update to ASC 606 and provides clarity on: identifying performance obligations and licensing implementation. For public companies, ASU No. 2016-10 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2016. Achieve is currently evaluating the impact of ASU No. 2016-10 on its financial statements and related disclosures.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments, or ASU 2016-13. ASU 2016-13 requires that expected credit losses relating to financial assets measured on an amortized cost basis and available-for-sale debt securities be recorded through an allowance for credit losses. ASU 2016-13 limits the amount of credit losses to be recognized for available-for- sale debt securities to the amount by which carrying value exceeds fair value and also requires the reversal of previously recognized credit losses if fair value increases. The new standard will be effective for Achieve on January 1, 2020. Early adoption will be available on January 1, 2019. Achieve is currently evaluating the impact of ASU 2016-13 on its financial statements and related disclosures.

Recently Adopted Accounting Policies

In August 2014, the FASB issued ASU No. 2014-15,*Presentation of Financial Statements-Going Concern*, or ASU No. 2014-15, which defines management's responsibility to assess an entity's ability to continue as a going concern, and requires related footnote disclosures if there is substantial doubt about its ability to

continue as a going concern. ASU No. 2014-15 is effective for Achieve for the fiscal year ending December 31, 2016, with early adoption permitted. The adoption of this standard by Achieve required additional disclosures regarding its ability to continue as a going concern (Note 1).

In March 2016, the FASB issued ASU No. 2016-09, Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, or ASU No. 2016-09. The amendment is to simplify several aspects of the accounting for stock-based payment transactions including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The amendments in ASU No. 2016-09 are effective for interim and annual reporting periods beginning after December 15, 2016. The adoption of this standard did not have a significant impact on Achieve's financial position or results of operations.

3. INTANGIBLE ASSETS

All of Achieve's intangible assets are subject to amortization and are amortized using the straight-line method over their estimated useful life. Achieve acquired license and supply agreements upon the acquisition of Extab on May 18, 2015 (Note 4). The agreements were determined to have a fair value of $3.1 million with an estimated useful life of 14 years (Note 4).

The components of intangible assets were as follows (in thousands):

	December 31, 2016			December 31, 2015		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
License agreements	$ 3,117	$ (362)	$ 2,755	$ 3,117	$ (140)	$ 2,977

As of December 31, 2016 and 2015 we recorded license agreement amortization expense of $0.2 million and $0.1 million, respectively. The following table outlines the estimated future amortization expense related to intangible assets held as of December 31, 2016 (in thousands):

Year Ending December 31,	
2017	$ 223
2018	223
2019	223
2020	223
2021	223
Thereafter	1,640
Total	$2,755

Achieve evaluates the carrying amount of intangible assets periodically by taking into account events or circumstances that may warrant revised estimates of useful life or that indicate the asset may be impaired. Achieve conducted an impairment analysis for long lived assets for 2016 and 2015, including the license and supply agreements for the active pharmaceutical ingredient cytisine, and concluded no impairment has occurred as of December 31, 2016 and 2015, respectively.

4. ACQUISITIONS

On May 14, 2015, Achieve entered into a Share Purchase Agreement with Sopharma, AD, or Sopharma, a privately held pharmaceutical company located in Bulgaria, to acquire 75% of the outstanding shares of Extab, a privately held operating company incorporated in the State of Delaware. Extab is a pharmaceutical company developing cytisine as a smoking cessation aid and which holds certain license and supply agreements for its distribution with Sopharma.

Pursuant to the Share Purchase Agreement, Achieve acquired a 75% controlling interest in Extab from Sopharma for $2.0 million in cash and $2.0 million in a deferred payment, contingent on regulatory approval of cytisine by the Food and Drug Administration, or FDA, or the European Medicines Agency, or EMA. In addition, as part of and in conjunction with the Share Purchase Agreement, Achieve amended Extab's license and supply agreements with Sopharma, extending their terms by five years and reducing the royalty rate payable by Achieve. Subsequent to the acquisition, Achieve paid to Sopharma $0.3 million to retire the balance of Extab's outstanding loans with Sopharma.

The acquisition was accounted for using the acquisition method under ASC 805 business combinations. Results of operations have been included in the financial statements from the date of acquisition May 18, 2015, the date Achieve assumed control of Extab. The fair value of the business combination was determined using level 3 inputs.

The purchase price of Achieve's 75% controlling interest in Extab was as follows (in thousands):

	Fair Value
Cash consideration	$2,000
Contingent consideration	—
Purchase price	$2,000

As of the date of acquisition and for the subsequent periods ending December 31, 2016 and 2015, Achieve assessed the likelihood of meeting the contingent event as unlikely and as a result have estimated its fair value at zero. Achieve considers the best indicator of the fair value of net assets acquired to be the $2.0 million cash consideration paid to acquire Achieve's 75% controlling interest plus the $0.7 million fair value attributable to the non-controlling interest, or NCI, calculated on a proportionate basis.

Under the acquisition method of accounting, the total purchase price is allocated to the acquired tangible and intangible assets and assumed liabilities of Extab based on their estimated fair values as of the transaction closing date. The allocation of the purchase price based on the estimated fair values is as follows (in thousands):

	Fair Value
Cash	$ 6
License agreements	3,117
Goodwill	1,034
Other current liabilities	(456)
Deferred tax liability (Note 5)	(1,034)
Non-controlling interest	(667)
	$ 2,000

Extab's license agreement expires May 26, 2029. As of the acquisition date, Achieve estimated its useful life to be the same as the remaining 14 year contractual life. Achieve also elected to amortize intangible assets on a straight line basis over its useful life, since there is no pattern of successful economic benefits available at the time to reliably determine a different amortization.

Transaction costs incurred by Achieve for the acquisition of Extab were $0.2 million. Transaction costs were primarily fees for legal counsel and were recorded to general and administrative expense for the period ended December 31, 2015.

Subsequent to acquiring control of Extab, on June 22, 2015, Achieve entered into an agreement with the NCI stockholder of Extab to convert their shares in Extab into shares of Achieve's common stock at a conversion rate commensurate with retaining 25% interest in Achieve. As of September 30, 2015, all of the NCI had converted their shares in Extab into shares of Achieve's common stock resulting in elimination of the Extab non-controlling interest and Extab becoming a wholly-owned subsidiary of Achieve (Note 6).

5. INCOME TAXES

For the years ended December 31, 2016 and 2015 Achieve's net losses before recovery for income taxes consisted of the following (in thousands):

	December 31,	
	2016	2015
United States	(1,732)	(1,211)
International	(6)	(10)
Total	(1,738)	(1,221)

Federal, state, and international income tax provision (recovery) is summarized as follows (in thousands):

	December 31,	
	2016	2015
Deferred:		
Federal	(504)	(407)
State	—	—
International	—	—
Total Deferred Taxes	(504)	(407)
Total Tax Expense	(504)	(407)

The reconciliation of income tax attributable to operations computed at the statutory tax rate to income tax expense is as follows. Achieve Pharma, a British corporation, is subject to British federal statutory tax rates for December 31, 2016 and 2015 of 20.0%, and 20.0%, respectively. Achieve, incorporated in Delaware, is subject to US Federal Statutory rates of 34% for each of the two years presented.

As of December 31, 2016 and 2015, Achieve has non-capital loss carryforwards of $0.3 million and $0.3 million, respectively, available to offset future taxable income in the U.K. and federal net operating loss carryforwards of $1.3 million and $0.7 million, respectively, to offset future taxable income in the United States, or U.S.

Under Section 382 of the Internal Revenue Code of 1986, substantial changes in Achieve's ownership may limit the amount of net operating loss carryforwards that could be utilized annually in the future to offset taxable income. Any such annual limitation may significantly reduce the utilization of the net operating losses before they expire. A section 382 limitation study has not been undertaken. The results of any future study could indicate that the U.S. losses may be materially limited; however, the amount of such limitation cannot be reasonably quantified at this time, but may be significant.

	December 31, 2016	2015
Income taxes at statutory rates (at a rate of 34% for all periods presented)	(590)	(415)
Expenses not deducted for tax purposes	84	5
Rate differential on foreign earnings	1	1
Change in valuation allowance	9	2
Translation adjustment	(8)	—
Income tax expense (recovery)	(504)	(407)

The net operating losses for income tax purposes expire as follows (in thousands):

	Net Operating Losses
2016 thru 2028	—
2029	9
2030	5
2031	15
2032	17
2033	2
2034	3
2035	651
2036	611
Total	1,313

Purchase Accounting resulting from the Stock Acquisition of Extab Corporation by the Company created a deferred tax liability, or DTL, resulting from the increase in U.S. GAAP basis to a definite-lived intangible, with no corresponding tax basis increase. The result was an initial gross DTL of $3.1 million. Subsequent to the acquisition, the Company's U.S. DTLs exceeded its U.S. deferred tax assets, or DTA, and no valuation allowance was recorded for the U.S. DTAs.

As the definite-lived intangible is amortized annually, creating U.S. GAAP expense with no corresponding tax deduction, the size of the DTL decreases, creating deferred income tax recovery of $0.5 million in 2016, and $0.4 million in 2015.

The potential income tax benefits relating to our U.K. deferred tax assets have not been recognized in the accounts as their realization did not meet the requirements of "more likely than not" under the liability method of tax allocation. Accordingly, a full valuation allowance has been recorded, and no deferred tax assets have been recognized at December 31, 2016 and December 31, 2015

Significant components of our deferred tax assets as of December 31 are shown below:

	December 31, 2016	2015
Deferred tax assets:	—	—
Tax basis in excess of book value of assets	—	—
Non-capital loss carryforwards	496	298
Research and development deductions and credits	—	—
Accrued expenses	363	142
Total deferred tax assets	859	440
Valuation allowance	(46)	(55)
Net deferred tax assets	813	385
Deferred tax liabilities:		
Intangible assets	(937)	(1,012)
Total deferred tax liabilities:	(937)	(1,012)
Total deferred tax assets (liabilities)	(124)	(627)

Under ASC 740, the benefit of an uncertain tax position that is more likely than not of being sustained upon audit by the relevant taxing authority must be recognized at the largest amount that is more likely than not to be sustained. No portion of the benefit of an uncertain tax position may be recognized if the position has less than a 50% likelihood of being sustained. A reconciliation of the unrecognized tax benefits of uncertain tax positions for the year ended December 31, 2016 is as follows (in thousands):

	2016	2015
Balance at January 1	178	—
Additions based on tax positions related to the current year	—	32
Additions based on tax positions related to prior years	29	146
Balance at December 31	207	178

As of December 31, 2016, unrecognized benefits of approximately $0.2 million have been recognized, and have affected our effective tax rate, resulting in a current liability on the balance sheet. Achieve's accounting policy is to treat interest and penalties relating to unrecognized tax benefits as a component of operating income. As of December 31, 2016 and December 31, 2015, Achieve had $0.2 million and $0.2 million in accrued interest and penalties related to income taxes, respectively. We are subject to taxes in the U.K. and the U.S. until the applicable statute of limitations expires. Tax audits by their very nature are often complex and can require several years to complete.

Tax Jurisdiction	Years Open to Examination
United Kingdom	2009 to 2016
United States	2009 to 2016

6. COMMON STOCK

30,000 authorized common voting share, par value of $0.01. As of December 31, 2016 and 2015, Achieve had 21,230 shares issued and outstanding.

On May 18, 2015, Achieve issued a convertible promissory note to a private lender, or Lender, in the principal amount of $2.3 million in exchange for cash. Interest is payable on the note at an annual rate of 3.5%, compounded annually. Two million dollars of the principal amount was converted automatically to

4,500 of shares of Achieve's common stock on September 30, 2015, immediately following the conversion of the 25% non-controlling interest in Extab into shares of Achieve's common stock. The remaining $0.3 million balance of the note after conversion matures one year from the issue date. Both principal and interest are payable on demand after the maturity date at the option of the Lender, accordingly it is classified as current in these financial statements. As of December 31, 2016 Achieve had not received payment notice from the Lender, who is a related party (note 7).

On June 22, 2015, Achieve entered into an Exchange Agreement with the remaining 25% of Extab's stockholders, representing the NCI. Each Extab stockholder pursuant to the Exchange agreement converted their shares of Extab into shares of Achieve's common stock at an exchange ratio, such that each 0.075 share of Extab common stock converted into one share of Achieve common stock. As of September 30, 2015, all the NCI stockholders converted their 375 shares of Extab into 5,000 shares of Achieve's common stock. Pursuant to Achieve's acquisition of Extab, Achieve allocated $0.7 million of non-cash consideration representing the fair value of the NCI shares exchanged (Note 4).

7. RELATED PARTY TRANSACTIONS

Achieve entered into a consulting agreement with Ricanto, Ltd., or Ricanto, on September 17, 2015 to provide strategic consulting and advice concerning clinical development, regulatory matters and business planning. Richard Stewart and Anthony Clarke together own 100% of Ricanto. Richard Stewart is Achieve's chairman of the board, and a principal stockholder. Anthony Clarke is a board director, officer, and a principal stockholder of Achieve. For the year ended December 31, 2016 and the period ended December 31, 2015, Achieve incurred consulting fees from Ricanto in the amount of $0.4 million and $0.2 million, respectively. As of December 31, 2016 and 2015, Achieve recorded amounts payable to Ricanto of $0.6 million and $0.2 million, respectively, and a component of accrued liabilities on the financial statements.

Achieve borrowed $2.72 million on May 18, 2015, through a convertible promissory note payable to a Lender of Achieve. The note matures and is payable upon demand one year from the date of the note. Interest accrues at a rate of 3.5%, annually. On September 30, 2015 the Lender converted $2.0 million in principal into 4,500 shares of Achieve common stock, par value $0.01, and is now a principal owner of Achieve. As of December 31, 2016 and 2015, the outstanding principal balance, included in shareholder loans with related parties, was $0.7 million and had accrued interest payable of $35,000 and $11,000, respectively.

During 2016 Achieve borrowed $0.2 million in total principal amount through two notes payable dated April 20, 2016 and December 8, 2016 from Achieve's Chairman of the Board, and a principal stockholder. The notes mature and are payable upon demand one year from the date of issuance. Interest accrues at an annual rate of 3.5%. As of December 31, 2016 the outstanding principal, included in shareholder loans with related parties, was $0.2 million and had accrued interest payable of $3,000.

Achieve entered into an employment agreement on May 11, 2015 with one of its principal stockholders to serve as its Chief Executive Officer. As of December 31, 2016, Achieve had not paid the salary of the agreed upon compensation. Salary otherwise payable for the years ended December 31, 2016 and 2015 was $0.7 million and $0.3 million, respectively.

Achieve entered into an employment agreement on August 17, 2015 with a member of management to serve as its Chief Financial Officer. As of December 31, 2016 Achieve had not paid the salary of the agreed upon compensation. Salary otherwise payable for the years ended December 31, 2016 and 2015 was $0.3 million and $0.1 million, respectively.

8. COMMITMENTS AND CONTINGENCIES

Sopharma License and Supply Agreements

In 2009, Achieve, through its subsidiary, Extab, entered into a license agreement, or the Sopharma License Agreement, and a supply agreement, or the Sopharma Supply Agreement, with Sopharma. Pursuant to the Sopharma License Agreement, Achieve was granted access to all available manufacturing, efficacy and safety data related to cytisine, as well as a granted patent in several European countries including Germany, France and Italy related to new oral dosage forms of cytisine providing enhanced stability. Additional rights granted under the Sopharma License Agreement include the exclusive use of, and the right to sublicense, the trademark Tabex in all territories —other than those mainly in Eastern Europe and parts of North Africa, where Sopharma or its affiliates and agents already market Tabex—in connection with the marketing, distribution and sale of products. Under the Sopharma License Agreement, Achieve agreed to pay a nonrefundable license fee. In addition, Achieve agreed to make certain royalty payments equal to a mid-teens percentage of all net sales of Tabex branded products in the Achieve territory during the term of the Sopharma License Agreement, including those sold by a third party pursuant to any sublicense which may be granted by Achieve. Achieve has agreed to cooperate with Sopharma in the defense against any actual or threatened infringement claims with respect to Tabex. Sopharma has the right to terminate the Sopharma License Agreement upon the termination or expiration of the Sopharma Supply Agreement. The Sopharma License Agreement will also terminate under customary termination provisions including Achieve's bankruptcy or insolvency and material breach. To date, Achieve, through a subsidiary, has paid Sopharma $10.00 pursuant to the Sopharma License Agreement.

A cross-license exists between Achieve and Sopharma whereby Achieve grants to Sopharma rights to any patents or patent applications or other intellectual property rights filed by Achieve in Sopharma territories.

On May 14, 2015, Achieve and Sopharma entered into an amendment to the Sopharma License Agreement. Among other things, the amendment to the Sopharma License Agreement reduced the royalty payments payable by Achieve to Sopharma from a percentage in the mid-teens to a percentage in the mid-single digits and extended the term of the Sopharma License Agreement until May 26, 2029.

Pursuant to the Sopharma Supply Agreement, Achieve will exclusively purchase all of its cytisine from Sopharma and Sopharma agrees to exclusively supply all such cytisine requested by Achieve. Each of Achieve and Sopharma may terminate the Sopharma Supply Agreement in the event of the other party's material breach or bankruptcy or insolvency.

Share Purchase Agreement

On May 14, 2015, Achieve entered into a Share Purchase Agreement with Sopharma, to acquire 75% of the outstanding shares of Extab for $2.0 million in cash and $2.0 million in a deferred payment, contingent on regulatory approval of cytisine by the Food and Drug Administration, or FDA, or the European Medicines Agency, or EMA.

As of the date of acquisition and for the subsequent periods ending December 31, 2016 and 2015, with respect to the contingent payment of $2.0 million, Achieve assessed the likelihood of meeting the contingent event as unlikely. As a result no contingent liability has been recognized as of December 31, 2016 and 2015.

University of Bristol License Agreement

In July 2016, Achieve entered into a license agreement with the University of Bristol, or the University of Bristol License Agreement. Under the University of Bristol License Agreement, Achieve received exclusive and nonexclusive licenses from the University of Bristol to certain patent and technology rights resulting from research activities into cytisine and its derivatives, including a number of patent applications related to novel approaches to cytisine binding at the nicotine receptor level. Any patents issued in connection with these applications would be scheduled to expire on either February 5, 2036 or August 19, 2036.

In consideration of rights granted by the University of Bristol, Achieve agreed to pay amounts of up to $3.2 million, in the aggregate, tied to a financing milestone and to specific clinical development and commercialization milestones resulting from activities covered by the University of Bristol License Agreement. Additionally, if Achieve successfully commercializes any product candidate subject to the University of Bristol License Agreement, Achieve is responsible for royalty payments in the low-single digits and payments up to a percentage in the mid-teens of any sublicense income, subject to specified exceptions, based upon net sales of such licensed products.

Unless otherwise terminated, the University of Bristol License Agreement will continue until the earlier of July 2036 or the expiration of the last patent claim subject to the University of Bristol License Agreement. Achieve may terminate the University of Bristol License Agreement for convenience upon a specified number of days' prior notice to the University of Bristol. The University of Bristol License Agreement will terminate under customary termination provisions including Achieve's bankruptcy or insolvency or its material breach of the agreement. Under the terms of the University of Bristol License Agreement, Achieve has provided 100 grams of cytisine to the University of Bristol as an initial contribution. To date, Achieve has not paid any further sums to the University of Bristol pursuant to the University of Bristol License Agreement.

9. SUBSEQUENT EVENTS

On January 5, 2017, Achieve and OncoGenex Pharmaceuticals, Inc., or OncoGenex, entered into the Merger Agreement, pursuant to which Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex will merge with and into Achieve, or the First Merger, with Achieve becoming a wholly owned subsidiary of OncoGenex and the surviving company of the First Merger, or the Initial Surviving Corporation. Promptly following the First Merger, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc., or Merger Sub 2, a Delaware corporation and a wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity as a direct wholly owned subsidiary of OncoGenex. The two mergers taken together, are intended to qualify as a "reorganization" within the meaning of Section 368(a)(2)(D) of the Internal Revenue Code of 1986, as amended. The surviving company is expected to be renamed Achieve Life Sciences, Inc. and is referred to herein as the "combined company." The Merger is expected to close mid-2017.

Subject to the terms and conditions of the Merger Agreement, at the closing of the First Merger, each outstanding share of Achieve common stock will be converted into the right to receive approximately 4,242.8904 shares of OncoGenex' common stock, subject to adjustment as provided in the Merger Agreement based on increases or decreases in Achieve's fully-diluted capitalization, as well as the payment of cash in lieu of fractional shares. Immediately following the effective time of the merger, OncoGenex equityholders are expected to own approximately 25% of the outstanding capital stock of the combined company on a fully diluted basis, and the Achieve stockholders are expected to own approximately 75% of the outstanding capital stock of the combined company on a fully diluted basis.

Consummation of the merger is subject to certain closing conditions, including, among other things, approval by the stockholders of Achieve and OncoGenex. The Merger Agreement contains certain termination rights for Achieve and OncoGenex, and further provides that, upon termination of the Merger Agreement under specified circumstances, either party may be required to pay the other party a termination fee of $0.5 million. In addition, the Merger Agreement provides that if either party breaches certain covenants regarding alternative transactions to those contemplated by the Merger Agreement, the breaching party may be required to pay the other party a termination fee of $1.0 million. In connection with certain terminations of the Merger Agreement, either party may be required to pay the other party's third party expenses up to $0.5 million.

At the effective time of the First Merger, OncoGenex's Board of Directors is expected to consist of seven members, four of whom will be designated by Achieve and three of whom will be designated by OncoGenex. Achieve is expected to designate Richard Stewart, Anthony Clark and two other independent directors that have yet to be determined. OncoGenex is expected to designate Scott Cormack, Stewart Parker and Martin Mattingly.

Additionally, at the effective time of the First Merger, Rick Stewart, the current Chairman of Achieve, is expected to be the Chairman and Chief Executive Officer of the combined company; Anthony Clarke, the current Chief Scientific Officer of Achieve, is expected to be the Chief Scientific Officer of the combined company; and John Bencich, Chief Financial Officer of OncoGenex and Cindy Jacobs, Chief Medical Officer of OncoGenex, are expected to continue to serve the combined company in their respective roles.

In accordance with the terms of the Merger Agreement, (i) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with OncoGenex, or the Achieve Support Agreements, and (ii) certain of OncoGenex's officers and directors, who collectively hold approximately 1.2 percent of the outstanding shares of OncoGenex's capital stock as of the close of business on January 4, 2017, have each entered into a support agreement with Achieve, or the OncoGenex Support Agreements, and together with the Achieve Support Agreements, the Support Agreements. The Support Agreements include covenants as to the voting of such shares in favor of approving the transactions contemplated by the Merger Agreement and against actions that could adversely affect the consummation of the Merger.

The Support Agreements will terminate upon the earlier of the consummation of the First Merger or the termination of the Merger Agreement by its terms.

Concurrently and in connection with the execution of the Merger Agreement, (i) certain officers, directors and stockholders of Achieve, who collectively hold approximately 78 percent of the outstanding shares of Achieve capital stock as of the close of business on January 4, 2017 and (ii) certain of OncoGenex's officers and directors, who collectively hold approximately 1.2 percent of the outstanding shares of OncoGenex's capital stock as of the close of business on January 4, 2017, have each entered into lock-up agreements with OncoGenex, pursuant to which, subject to certain exceptions, each stockholder will be subject to a 180-day, or the Lock-Up Period, lock-up on the sale of shares of OncoGenex's capital stock, which Lock-Up Period shall begin upon the consummation of the First Merger.

OncoGenex expects to issue contingent value rights, or each, a CVR and collectively, the CVRs, to OncoGenex's existing stockholders prior to the completion of the First Merger. One CVR will be issued for each share of OncoGenex's common stock outstanding as of the record date for such issuance. Each CVR will be a non-transferable right to potentially receive certain cash, equity or other consideration received by the combined company in the event the combined company receives any such consideration during the five-year period after consummation of the First Merger as a result of the achievement of certain clinical milestones, regulatory milestones, sales-based milestones and/or up-front payment milestones relating to OncoGenex's product candidate apatorsen, or the Milestones, upon the terms and subject to the conditions set forth in a contingent value rights agreement to be entered into between OncoGenex, Achieve and an as of yet unidentified third party, as rights agent, or the CVR Agreement. The aggregate consideration to be distributed to the holders of the CVRs, if any, will be equal to 80% of the consideration received by the combined company as a result of the achievement of the Milestones less certain agreed to offsets, as determined pursuant to the CVR Agreement. Under the CVR Agreement, for a period of six months beginning in February 2017, OncoGenex will use certain defined efforts to enter into an agreement with a third party regarding the development and/or commercialization of apatorsen. At the expiration of this six-month period, if a third party has not entered into a term sheet for the development or commercialization of apatorsen, the combined company will no longer be contractually required to pursue an agreement regarding apatorsen and no consideration will be payable to the holders of CVRs.

OncoGenex also entered into a letter agreement with Achieve, whereby OncoGenex would pay, on behalf of Achieve, for transactions costs associated with the merger. In the event that the Merger Agreement is terminated and as a result of such termination OncoGenex is required to pay to Achieve one or more termination fees, the total amount of termination fees OncoGenex would owe is reduced by the amount of the transaction costs OncoGenex would have paid on behalf of Achieve.

ANNEX A

AGREEMENT AND PLAN OF MERGER AND REORGANIZATION

by and among:

ONCOGENEX PHARMACEUTICALS, INC.,
a Delaware corporation;

ASH ACQUISITION SUB, INC.,
a Delaware corporation;

ASH ACQUISITION SUB 2, INC.,
a Delaware corporation; and

ACHIEVE LIFE SCIENCE, INC.
a Delaware corporation

Dated as of January 5, 2017

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AGREEMENT AND PLAN OF MERGER AND REORGANIZATION

THIS AGREEMENT AND PLAN OF MERGER AND REORGANIZATION (this "***Agreement***") is made and entered into as of January 5, 2017, by and among **ONCOGENEX PHARMACEUTICALS, INC.**, a Delaware corporation ("***Arrow***"), **ASH ACQUISITION SUB, INC.**, a Delaware corporation ("***Merger Sub 1***"), **ASH ACQUISITION SUB 2, INC.**, a Delaware corporation ("***Merger Sub 2***"; together with Merger Sub 1, "***Merger Subs***"), and **ACHIEVE LIFE SCIENCE, INC.**, a Delaware corporation (the "***Company***"). Certain capitalized terms used in this Agreement are defined in **Exhibit A**.

RECITALS

A. The respective Board of Directors of Arrow, Merger Sub 1, Merger Sub 2 and the Company have each determined that it is advisable and in the best interests of their respective corporations and their respective stockholders for Arrow to acquire the Company pursuant to a plan and series of integrated transactions whereby (i) Merger Sub 1 shall merge with and into the Company (the "***First Merger***") with the Company continuing as the surviving corporation in the First Merger as a direct wholly owned subsidiary of Arrow (the "***Initial Surviving Corporation***") and (ii) promptly after the First Merger, the Initial Surviving Corporation shall merge with and into Merger Sub 2 (the "***Second Merger***" and, together with the First Merger, the "***Mergers***") with Merger Sub 2 continuing as the surviving entity in the Second Merger as a direct wholly owned subsidiary of Arrow (the "***Surviving Corporation***"), upon the terms and subject to the conditions set forth herein.

B. For U.S. federal income tax purposes, the Parties intend that the First Merger and the Second Merger, taken together, qualify as a "reorganization" within the meaning of Section 368(a)(2)(D) of the Code, (ii) the First Merger and the Second Merger, taken together, constitute an integrated plan described in Rev. Rul. 2001-46, 2001-2 C.B. 321, (iii) the First Merger and the Second Merger, taken together, qualify as a "reorganization" within the meaning of Section 368(a) of the Code (clauses (i)–(iii), the "***Intended Tax Treatment***") and (iv) this Agreement be a "plan of reorganization" within the meaning of Section 368 of the Code and within the meaning of Treasury Regulation 1.368-2(g).

C. The Arrow Board (i) has determined that the Mergers and the issuance of shares of Arrow Common Stock in connection with the Mergers is fair to, advisable and in the best interests of Arrow and its stockholders, (ii) has approved this Agreement, the issuance of shares of Arrow Common Stock to the stockholders of the Company in connection with the Mergers, and the other Contemplated Transactions and (iii) has determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholders of Arrow vote to approve this Agreement and the issuance of Arrow Common Stock in the Mergers pursuant to the terms of this Agreement and thereby approve the Contemplated Transactions.

D. The Merger Sub 1 Board (i) has determined that the First Merger is fair to, advisable, and in the best interests of Merger Sub 1 and its sole stockholder, (ii) has approved this Agreement, the First Merger, and the other Contemplated Transactions and has declared this Agreement advisable and (iii) has determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the sole stockholder of Merger Sub 1 vote to adopt this Agreement and thereby approve the Contemplated Transactions.

E. The Merger Sub 2 Board (i) has determined that the Second Merger is fair to, advisable, and in the best interests of Merger Sub 2 and its sole stockholder, (ii) has approved this Agreement, the Second Merger, and the other Contemplated Transactions and has declared this Agreement advisable and (iii) has determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholder of Merger Sub 2 vote to adopt this Agreement and thereby approve the Contemplated Transactions.

F. The Company Board (i) has determined that the Mergers are fair to, advisable and in the best interests of the Company and its stockholders, (ii) has approved this Agreement, the Mergers and the other Contemplated

Transactions and has declared this Agreement advisable and (iii) has determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholders of the Company vote to adopt this Agreement and thereby approve the Contemplated Transactions.

G. It is expected that the issuance of shares of Arrow Common Stock to the stockholders of the Company pursuant to the Mergers will result in a change of control of Arrow.

H. In order to induce Arrow to enter into this Agreement and cause the Mergers to be consummated, each share of Arrow Common Stock outstanding immediately prior to the First Merger Effective Time (as defined below) shall receive, prior to the Closing, one contractual contingent value right per share of Arrow Common Stock (each, a "***CVR***") representing the right to receive contingent payments, if any, upon the achievement of certain milestones at the times and subject to the terms and conditions of the CVR agreement in substantially the form attached hereto as **Exhibit F** (the "***CVR Agreement***").

I. In order to induce Arrow to enter into this Agreement and to cause the Mergers to be consummated, the officers and directors of the Company and certain stockholders listed on Schedule 7.5 hereto are executing support agreements in favor of Arrow concurrently with the execution and delivery of this Agreement in substantially the form attached hereto as **Exhibit B** (the "***Company Stockholder Support Agreements***").

J. In order to induce the Company to enter into this Agreement and to cause the Mergers to be consummated, the officers, directors and certain stockholders of Arrow listed on Schedule 8.3 hereto are executing support agreements in favor of the Company concurrently with the execution and delivery of this Agreement in substantially the form attached hereto as **Exhibit C** (the "***Arrow Stockholder Support Agreements***").

K. In order to induce the Company to enter into this Agreement and to cause the Mergers to be consummated, the persons listed on Schedules 7.5 and 8.3 hereto are executing a copy of a Lock-up Agreement, substantially in the form attached hereto as **Exhibit E** (the "***Lock-up Agreement***"), concurrently with the execution and delivery of this Agreement.

AGREEMENT

The Parties, intending to be legally bound, agree as follows:

Section 1. DESCRIPTION OF TRANSACTIONS

1.1 The First Merger. Upon the terms and subject to the conditions of this Agreement, and in accordance with the DGCL, at the First Merger Effective Time and as part of an integrated transaction and plan of merger with the Second Merger, the First Merger shall be consummated, whereby Merger Sub 1 shall be merged with and into the Company, whereupon the separate corporate existence of Merger Sub 1 shall cease, and the Company shall continue its corporate existence as the Initial Surviving Corporation and shall continue to be governed by the laws of the State of Delaware pending consummation of the Second Merger.

1.2 The Second Merger. Promptly following the First Merger Effective Time and upon the terms and subject to the conditions of this Agreement, and in accordance with the DGCL, at the Second Merger Effective Time (as defined below), the Second Merger shall be consummated, whereby the Initial Surviving Corporation shall be merged with and into Merger Sub 2, whereupon the separate corporate existence of the Initial Surviving Corporation shall cease, and Merger Sub 2 shall continue its corporate existence as the surviving corporation in the Second Merger. There shall be no condition to the completion of the Second Merger other than the completion of the First Merger.

1.3 Effects of the Mergers.

(a) At the First Merger Effective Time, the First Merger shall have the effects set forth in this Agreement and in the applicable provisions of the DGCL. Without limiting the generality of the foregoing, from and after the First Merger Effective Time, the Company shall possess all properties, rights, privileges, powers and franchises of Merger Sub 1 and the Company, and all of the Liabilities of the Company and Merger Sub 1 shall become the Liabilities of the Company as the Initial Surviving Corporation.

(b) At the Second Merger Effective Time, the Second Merger shall have the effects set forth in this Agreement and in the applicable provisions of the DGCL. Without limiting the generality of the foregoing, from and after the Second Merger Effective Time, Merger Sub 2 shall possess all properties, rights, privileges, powers and franchises of the Initial Surviving Corporation and Merger Sub 2, and all of the Liabilities of the Initial Surviving Corporation and Merger Sub 2 shall become the Liabilities of Merger Sub 2 as the Surviving Corporation.

1.4 Closing; First Effective Time; Second Effective Time. Unless this Agreement is earlier terminated pursuant to the provisions of Section 9.1 of this Agreement, and subject to the satisfaction or waiver of the conditions set forth in Sections 6, 7 and 8 of this Agreement, the consummation of the Mergers (the "***Closing***") shall take place at the offices of Fenwick & West LLP, 1191 2nd Avenue, 10th Floor, Seattle, Washington, as promptly as practicable (but in no event later than the second Business Day following the satisfaction or waiver of the last to be satisfied or waived of the conditions set forth in Sections 6, 7 and 8, other than those conditions that by their nature are to be satisfied at the Closing, but subject to the satisfaction or waiver of each of such conditions), or at such other time, date and place as Arrow and the Company may mutually agree in writing. The date on which the Closing actually takes place is referred to as the "***Closing Date***." Subject to the terms of this Agreement, the Parties shall cause (i) the First Merger to be consummated by filing a certificate of merger (the "***First Certificate of Merger***") with the Secretary of State of the State of Delaware at the Closing in accordance with the relevant provisions of the DGCL (the time specified in the First Certificate of Merger being the "***First Merger Effective Time***") and (ii) the Second Merger to be consummated by filing a certificate of merger (the "***Second Certificate of Merger***") with the Secretary of State of the State of Delaware in accordance with the relevant provisions of the DGCL (the time specified in the Second Certificate of Merger being the "***Second Merger Effective Time***"). The Second Merger Effective Time will occur promptly following the First Merger Effective Time.

1.5 Certificate of Incorporation and Bylaws of the Initial Surviving Corporation At the First Merger Effective Time, by virtue of the First Merger and without any action on the part of Merger Sub 1 or the Company, the certificate of incorporation of the Initial Surviving Corporation shall be amended and restated to read the same as the certificate of incorporation of Merger Sub 1, as in effect immediately prior to the First Merger Effective Time, subject to Section 5.8 and to such other changes as are mutually agreeable to Arrow and the Company, except the references to Merger Sub 1's name shall be replaced by references to "Achieve Life Science, Inc.," until thereafter amended in accordance with the DGCL and such certificate of incorporation. As of the First Merger Effective Time, by virtue of the First Merger and without any action on the part of Merger Sub 1 or the Company, the bylaws of the Initial Surviving Corporation shall be amended and restated to read the same as the bylaws of Merger Sub 1, as in effect immediately prior to the First Merger Effective Time, subject to Section 5.8 and to such other changes as are mutually agreeable to Arrow and the Company, except the references to Merger Sub 1's name shall be replaced by references to "Achieve Life Science, Inc.," until thereafter amended in accordance with the DGCL, the certificate of incorporation of the Initial Surviving Corporation and such bylaws.

1.6 Certificate of Incorporation and Bylaws of the Surviving Corporation At the Second Merger Effective Time, by virtue of the Second Merger and without any action on the part of the Initial Surviving Corporation or Merger Sub 2, the certificate of incorporation of the Surviving Corporation shall be amended and restated to read the same as the certificate of incorporation of Merger Sub 2, as in effect immediately prior to the Second Merger Effective Time, subject to Section 5.8 and to such other changes as are mutually agreeable to

Arrow and the Company, except the references to Merger Sub 2's name shall be replaced by references to "Achieve Life Science, Inc.," until thereafter amended in accordance with the DGCL and such certificate of incorporation. As of the Second Merger Effective Time, by virtue of the Second Merger and without any action on the part of the Initial Surviving Corporation or Merger Sub 2, the bylaws of the Surviving Corporation shall be amended and restated to read the same as the bylaws of Merger Sub 2, as in effect immediately prior to the Second Merger Effective Time, subject to Section 5.8 and to such other changes as are mutually agreeable to Arrow and the Company, except the references to Merger Sub 2's name shall be replaced by references to "Achieve Life Science, Inc.," until thereafter amended in accordance with the DGCL, the certificate of incorporation of the Surviving Corporation and such bylaws.

1.7 Certificate of Incorporation and Bylaws of Arrow. At the Second Merger Effective Time, the certificate of incorporation of Arrow shall be the certificate of incorporation of Arrow immediately prior to the Second Merger Effective Time, until thereafter amended as provided by the DGCL and such certificate of incorporation; *provided*, *however*, that at the Second Merger Effective Time, Arrow shall file an amendment to its certificate of incorporation to change the name of Arrow to "Achieve Life Sciences, Inc." and to make such other changes as are mutually agreeable to Arrow and the Company. At the Second Merger Effective Time, the bylaws of Arrow shall be the bylaws of Arrow as in effect immediately prior to the Second Merger Effective Time.

1.8 Directors and Officers.

(a) From and after the First Merger Effective Time, the officers of the Company at the First Merger Effective Time shall be the officers of the Initial Surviving Corporation, until their respective successors are duly elected or appointed and qualified in accordance with the DGCL or their earlier death, incapacitation, retirement, resignation or removal. From and after the First Merger Effective Time, the directors of the Company at the First Merger Effective Time shall be the directors of the Initial Surviving Corporation, until their respective successors are duly elected or appointed and qualified in accordance with the DGCL or their earlier death, incapacitation, retirement, resignation or removal.

(b) From and after the Second Merger Effective Time, the officers of the Initial Surviving Corporation at the Second Merger Effective Time shall be the officers of the Surviving Corporation, until their respective successors are duly elected or appointed and qualified in accordance with DGCL or their earlier death, incapacitation, retirement, resignation or removal. From and after the Second Merger Effective Time, the directors of the Initial Surviving Corporation at the Second Merger Effective Time shall be the directors of the Surviving Corporation, until their respective successors are duly elected or appointed and qualified in accordance with the DGCL or their earlier death, incapacitation, retirement, resignation or removal.

(c) From and after the First Merger Effective Time, the officers of Arrow at the First Merger Effective Time shall be as set forth in Section 5.14, until their respective successors are duly elected or appointed and qualified in accordance with DGCL or their earlier death, incapacitation, retirement, resignation or removal. From and after the First Merger Effective Time, the directors of Arrow at the First Merger Effective Time shall be the Selected Directors, until their respective successors are duly elected or appointed and qualified in accordance with the DGCL or their earlier death, incapacitation, retirement, resignation or removal.

(d) From and after the First Merger Effective Time, the officers of OTI (as defined below) at the First Merger Effective Time shall be as determined by the Selected Directors until their respective successors are duly elected or appointed and qualified in accordance with DGCL or their earlier death, incapacitation, retirement, resignation or removal. From and after the First Merger Effective Time, the directors of OTI at the First Merger Effective Time shall be as determined by the Selected Directors until their respective successors are duly elected or appointed and qualified in accordance with the DGCL or their earlier death, incapacitation, retirement, resignation or removal.

1.9 Effect of the First Merger on the Capital Stock of the Company

(a) At the First Merger Effective Time, by virtue of the First Merger and without any further action on the part of Arrow, Merger Sub 1, the Company or any stockholder of the Company or of Merger Sub 1:

(i) any shares of Company Capital Stock held as treasury stock or held or owned by the Company or any Subsidiary of the Company immediately prior to the First Merger Effective Time shall be canceled and retired and shall cease to exist, and no consideration shall be delivered in exchange therefor; and

(ii) subject to Section 1.9(c), each share of Company Capital Stock outstanding immediately prior to the First Merger Effective Time (excluding shares to be canceled pursuant to Section 1.9(a)(i)) shall be converted solely into the right to receive a number of shares of Arrow Common Stock equal to the Exchange Ratio.

(b) If any shares of Company Common Stock outstanding immediately prior to the First Merger Effective Time are unvested or are subject to a repurchase option or the risk of forfeiture under any applicable restricted stock purchase agreement or other agreement with the Company, then the shares of Arrow Common Stock issued in exchange for such shares of Company Common Stock will, to the same extent, be unvested and subject to the same repurchase option or risk of forfeiture, and the certificates representing such shares of Arrow Common Stock shall accordingly be marked with appropriate legends. The Company shall take all actions that may be necessary to ensure that, from and after the First Merger Effective Time, Arrow is entitled to exercise any such repurchase option or other right set forth in any such restricted stock purchase agreement or other agreement.

(c) No fractional shares of Arrow Common Stock shall be issued in connection with the First Merger, and no certificates or scrip for any such fractional shares shall be issued. Any holder of Company Capital Stock who would otherwise be entitled to receive a fraction of a share of Arrow Common Stock (after aggregating all fractional shares of Arrow Common Stock issuable to such holder) shall, in lieu of such fraction of a share and upon surrender by such holder of a letter of transmittal in accordance with Section 1.12 and accompanying documents as required therein, be paid in cash the dollar amount (rounded up to the nearest whole cent), without interest, determined by multiplying such fraction by the Arrow Closing Price.

(d) At the First Merger Effective Time, by virtue of the First Merger and without any action on the part of the Company or Merger Sub 1, each share of Common Stock, $0.01 par value per share, of Merger Sub 1 ("***Merger Sub 1 Common Stock***") issued and outstanding immediately prior to the First Merger Effective Time shall be converted into and exchanged for one validly issued, fully paid and nonassessable share of common stock of the Initial Surviving Corporation. Each stock certificate of Merger Sub 1 evidencing ownership of any Merger Sub 1 Common Stock shall, as of the First Merger Effective Time, evidence ownership of such share of common stock of the Initial Surviving Corporation.

(e) If, between the date of this Agreement and the Closing, the issued or outstanding shares of Company Capital Stock or Arrow Common Stock shall have been changed into, or exchanged for, a different number of shares or a different class, by reason of any stock dividend, subdivision, reclassification, recapitalization, split, combination or exchange of shares or other like change, the Exchange Ratio, to the extent necessary, shall be equitably adjusted to reflect such change to the extent necessary to provide the parties hereto the same economic effect as contemplated by this Agreement prior to such stock dividend, subdivision, reclassification, recapitalization, split, combination or exchange of shares or other like change; *provided, however*, that nothing herein will be construed to permit the Company or Arrow to take any action with respect to Company Capital Stock or Arrow Common Stock, respectively, that is prohibited or not expressly permitted by the terms of this Agreement.

(f) Notwithstanding anything to the contrary contained herein, any Dissenting Shares shall not be converted into the right to receive the applicable number of shares of Arrow Common Stock pursuant to Section 1.9(a)(ii), but shall instead be converted into the right to receive such consideration as may be determined to be

due with respect to any such Dissenting Shares pursuant to and subject to the requirements of the DGCL. Each holder of Dissenting Shares who, pursuant to the provisions of the DGCL becomes entitled to payment thereunder for such shares shall receive payment therefor in accordance with the DGCL (but only after the value therefor shall have been agreed upon or finally determined pursuant to such provisions). If, after the First Merger Effective Time, any Dissenting Shares shall lose their status as Dissenting Shares, then any such shares shall immediately be deemed to have converted at the First Merger Effective Time into the right to receive the applicable number of shares of Arrow Common Stock pursuant to Section 1.9(a)(ii) in respect of such shares as if such shares never had been Dissenting Shares. The Company shall provide to Arrow prompt notice of any demands for appraisal or purchase received by the Company, withdrawals of such demands and any other instruments related to such demands served pursuant to the DGCL and received by the Company. Arrow shall have the right to participate, at its own expense and not subject to reimbursement by the Company, in all negotiations and proceedings with respect to such demands under the DGCL. The Company shall not, except with the prior written consent of Arrow (which consent shall not be unreasonably withheld, delayed or conditioned), or as otherwise required under the DGCL voluntarily make any payment or offer to make any payment with respect to, or settle or offer to settle, any claim or demand in respect of any Dissenting Shares. The issuance of shares of Arrow Common Stock pursuant to Section 1.9(a)(ii) (other than in respect of Dissenting Shares, which shall be treated as provided in this Section 1.9(f) and under the DGCL) shall not be affected by the exercise or potential exercise of appraisal rights or dissenters' rights under the DGCL by any holder of Company Capital Stock.

1.10 Effect of the Second Merger on the Capital Stock of the Initial Surviving Corporation At the Second Merger Effective Time, by virtue of the Second Merger and without any action on the part of the Initial Surviving Corporation or Merger Sub 2, (a) each share of common stock, par value $0.01 per share, of Merger Sub 2 issued and outstanding immediately prior to the Second Merger Effective Time shall remain outstanding as common stock, par value $0.01 per share, of the Surviving Corporation and (b) each share of common stock, par value $0.01 per share, of the Initial Surviving Corporation shall be canceled and shall not be converted into shares of common stock, par value $0.01 per share, of the Surviving Corporation. Immediately after the completion of the Second Merger, Arrow shall own all of the issued and outstanding common stock, par value $0.01 per share, of the Surviving Corporation.

1.11 Closing of the Company's Transfer Books. At the First Merger Effective Time: (a) all shares of Company Capital Stock outstanding immediately prior to the First Merger Effective Time shall be treated in accordance with Section 1.9(a), and all holders of certificates representing shares of Company Capital Stock that were outstanding immediately prior to the First Merger Effective Time shall cease to have any rights as stockholders of the Company and (b) the stock transfer books of the Company shall be closed with respect to all shares of Company Capital Stock outstanding immediately prior to the First Merger Effective Time. No further transfer of any such shares of Company Capital Stock shall be made on such stock transfer books after the First Merger Effective Time. If, after the First Merger Effective Time, a valid certificate previously representing any shares of Company Capital Stock, outstanding immediately prior to the First Merger Effective Time (a "***Company Stock Certificate***") is presented to the Exchange Agent or to the Surviving Corporation, such Company Stock Certificate shall be canceled and shall be exchanged as provided in Sections 1.9 and 1.12.

1.12 Surrender of Certificates.

(a) On or within five (5) Business Days of the Closing Date, Arrow and the Company shall agree upon and select a reputable bank, transfer agent or trust company to act as exchange agent in the First Merger (the "***Exchange Agent***"). At the First Merger Effective Time, Arrow shall deposit with the Exchange Agent: (i) certificates representing the shares of Arrow Common Stock issuable pursuant to Section 1.9(a) and (ii) cash sufficient to make payments in lieu of fractional shares in accordance with Section 1.9(c). The shares of Arrow Common Stock and cash amounts so deposited with the Exchange Agent, together with any dividends or distributions received by the Exchange Agent with respect to such shares, are referred to collectively as the "***Exchange Fund***."

(b) At or before the First Merger Effective Time, the Company will deliver to Arrow a true, complete and accurate listing of all record holders of Company Capital Stock at the First Merger Effective Time, including the number and class of shares of Company Capital Stock held by such record holder, and the number of shares of Arrow Common Stock such holder is entitled to receive pursuant to Section 1.9 (the "***Company Allocation Schedule***"). Promptly after the First Merger Effective Time, Arrow shall cause the Exchange Agent to mail to the Persons who were record holders of Company Stock Certificates immediately prior to the First Merger Effective Time: (i) a letter of transmittal in customary form and containing such provisions as Arrow may reasonably specify (including a provision confirming that delivery of Company Stock Certificates shall be effected, and risk of loss and title to Company Stock Certificates shall pass, only upon delivery of such Company Stock Certificates to the Exchange Agent) and (ii) instructions for effecting the surrender of Company Stock Certificates in exchange for certificates representing Arrow Common Stock. Upon surrender of a Company Stock Certificate to the Exchange Agent for exchange, together with a duly executed letter of transmittal and such other documents as may be reasonably required by the Exchange Agent or Arrow: (A) the holder of such Company Stock Certificate shall be entitled to receive in exchange therefor a certificate representing the number of whole shares of Arrow Common Stock that such holder has the right to receive pursuant to the provisions of Section 1.9(a) (and cash in lieu of any fractional share of Arrow Common Stock pursuant to the provisions of Section 1.9(c)) and (B) the Company Stock Certificate so surrendered shall be canceled. Until surrendered as contemplated by this Section 1.12(b), each Company Stock Certificate shall be deemed, from and after the First Merger Effective Time, to represent only the right to receive shares of Arrow Common Stock (and cash in lieu of any fractional share of Arrow Common Stock). If any Company Stock Certificate shall have been lost, stolen or destroyed, Arrow may, in its discretion and as a condition precedent to the delivery of any shares of Arrow Common Stock, require the owner of such lost, stolen or destroyed Company Stock Certificate to provide an applicable affidavit with respect to such Company Stock Certificate and post a bond indemnifying Arrow against any claim suffered by Arrow related to the lost, stolen or destroyed Company Stock Certificate or any Arrow Common Stock issued in exchange therefor as Arrow may reasonably request.

(c) No dividends or other distributions declared or made with respect to Arrow Common Stock with a record date after the First Merger Effective Time shall be paid to the holder of any unsurrendered Company Stock Certificate with respect to the shares of Arrow Common Stock that such holder has the right to receive in the First Merger until such holder surrenders such Company Stock Certificate or an affidavit of loss or destruction in lieu thereof in accordance with this Section 1.12 (at which time such holder shall be entitled, subject to the effect of applicable abandoned property, escheat or similar laws, to receive all such dividends and distributions, without interest).

(d) Any portion of the Exchange Fund that remains undistributed to holders of Company Stock Certificates as of the date 12 months after the Closing Date shall be delivered to Arrow upon demand, and any holders of Company Stock Certificates who have not theretofore surrendered their Company Stock Certificates in accordance with this Section 1.12 shall thereafter look only to Arrow for satisfaction of their claims for Arrow Common Stock, cash in lieu of fractional shares of Arrow Common Stock and any dividends or distributions with respect to shares of Arrow Common Stock.

(e) Each of the Exchange Agent, Arrow, the Initial Surviving Corporation, and the Surviving Corporation shall be entitled to deduct and withhold from any consideration deliverable pursuant to this Agreement to any holder of any Company Capital Stock such amounts as are required to be deducted or withheld from such consideration under the Code or under any other applicable Legal Requirement; provided, however, that prior to making any such deduction or withholding, the applicable withholding agent shall provide notice to the affected recipient of the amounts subject to withholding and a reasonable opportunity for such recipient to provide forms or other evidence that would exempt such amounts from withholding tax. Such applicable withholding agent shall be entitled to request any reasonably appropriate Tax forms, including Form W-9 (or the appropriate Form W-8, as applicable) from any recipient of payments hereunder. To the extent such amounts are so deducted or withheld, and remitted to the appropriate taxing authority, such amounts shall be treated for all

purposes under this Agreement as having been paid to the Person to whom such amounts would otherwise have been paid.

(f) No party to this Agreement shall be liable to any holder of any Company Capital Stock or to any other Person with respect to any shares of Arrow Common Stock (or dividends or distributions with respect thereto) or for any cash amounts delivered to any public official pursuant to any applicable abandoned property law, escheat law or similar Legal Requirement.

1.13 Further Action. If, at any time after the First Merger Effective Time, any further action is determined by the Initial Surviving Corporation to be necessary or desirable to carry out the purposes of this Agreement or to vest the Initial Surviving Corporation with full right, title and possession of and to all rights and property of the Company, then the officers and directors of the Initial Surviving Corporation shall be fully authorized, and shall use their and its commercially reasonable efforts (in the name of the Company, in the name of Merger Sub 1, in the name of the Initial Surviving Corporation and otherwise) to take such action. If, at any time after the Second Merger Effective Time, any further action is determined by the Surviving Corporation to be necessary or desirable to carry out the purposes of this Agreement or to vest the Surviving Corporation with full right, title and possession of and to all rights and property of the Initial Surviving Corporation, then the officers and directors of the Surviving Corporation shall be fully authorized, and shall use their and its commercially reasonable efforts (in the name of the Initial Surviving Corporation and otherwise) to take such action.

Section 2. REPRESENTATIONS AND WARRANTIES OF THE COMPANY

Subject to Section 10.13(h), except as set forth in set forth in the written disclosure schedule delivered by the Company to Arrow (the "***Company Disclosure Schedule***"), the Company represents and warrants to Arrow and Merger Subs:

2.1 Due Organization; Subsidiaries; Etc.

(a) Each of the Company and its Subsidiaries is a corporation or other legal entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization and has all necessary power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own and use its assets in the manner in which its assets are currently owned and used and (iii) to perform its obligations under all Contracts by which it is bound.

(b) Each of the Company and its Subsidiaries is duly licensed or qualified to do business, and is in good standing, under the laws of all jurisdictions where the nature of its business requires such licensing or qualification other than in jurisdictions where the failure to be so qualified individually or in the aggregate would not be reasonably expected to have a Company Material Adverse Effect.

(c) Part 2.1(c) of the Company Disclosure Schedule identifies each Subsidiary of Company and indicates its jurisdiction of organization. Neither the Company nor any of the Entities identified in Part 2.1(c) of the Company Disclosure Schedule owns any capital stock of, or any equity interest of any nature in, any other Entity, other than the Entities identified in Part 2.1(c) of the Company Disclosure Schedule. Neither the Company nor any of its Subsidiaries has agreed nor is obligated to make, nor is bound by any Contract under which it may become obligated to make, any future investment in or capital contribution to any other Entity. Neither the Company nor any of its Subsidiaries has, at any time, been a general partner of, or has otherwise been liable for any of the debts or other obligations of, any general partnership, limited partnership or other Entity.

2.2 Certificate of Incorporation; Bylaws; Charters and Codes of Conduct. The Company has made available to Arrow accurate and complete copies of the Organizational Documents of the Company and each of its Subsidiaries. Part 2.2 of the Company Disclosure Schedule lists, and the Company has made available to Arrow, accurate and complete copies of: (a) the charters of all committees of the Company Board and (b) any

code of conduct or similar policy adopted by the Company or by the Company Board, or any committee thereof. Neither the Company nor any of its Subsidiaries has taken any action in breach or violation of any of the provisions of its Organizational Documents nor is in breach or violation of any of the material provisions of their respective Organizational Documents, except as would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect.

2.3 Authority; Binding Nature of Agreement. The Company and each of its Subsidiaries have all necessary corporate power and authority to enter into and to perform its obligations under this Agreement (subject to, in the case of the First Merger, the Required Company Stockholder Vote). The Company Board (at one or more meetings duly called and held and, as of the date of this Agreement, not subsequently rescinded or modified in any way), has as of the date of this Agreement: (a) determined that the Mergers is fair to, advisable and in the best interests of the Company and its stockholders; (b) approved this Agreement, the Mergers and the Contemplated Transactions and has declared this Agreement advisable and (c) determined to recommend, upon the terms and subject to the conditions of this Agreement, that the stockholders of the Company vote to adopt this Agreement and thereby approve the Contemplated Transactions. This Agreement has been duly executed and delivered by the Company and assuming the due authorization, execution and delivery by Arrow, constitutes the legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to the Enforceability Exceptions. Prior to the execution of the Company Stockholder Support Agreements, the Company Board approved the Company Stockholder Support Agreements and the transactions contemplated thereby.

2.4 Vote Required. The affirmative vote (or written consent) of the holders of a majority of the shares of Company Common Stock outstanding on the record date and entitled to vote thereon, voting as a single class (the "***Required Company Stockholder Vote***"), is the only vote (or consent) of the holders of any class or series of Company Capital Stock necessary to adopt or approve this Agreement and approve the First Merger and the matters set forth in Section 5.2(a).

2.5 Non-Contravention; Consents. Subject to obtaining the Required Company Stockholder Vote, the filing of the First Certificate of Merger and the Second Certificate of Merger as required by the DGCL, neither (x) the execution, delivery or performance of this Agreement by the Company, nor (y) the consummation of the Mergers or any of the Contemplated Transactions, will directly or indirectly (with or without notice or lapse of time):

(a) contravene, conflict with or result in a violation of (i) any of the provisions of the Company's Organizational Documents or (ii) any resolution adopted by the stockholders, the Company Board or any committee thereof;

(b) contravene, conflict with or result in a material violation of, or to the Knowledge of the Company, give any Governmental Body or other Person the right to challenge the Mergers or the Contemplated Transactions or to exercise any remedy or obtain any relief under, any Legal Requirement or any order, writ, injunction, judgment or decree to which the Company or its Subsidiaries, or any of the assets owned or used by the Company or its Subsidiaries, is subject except as would not be material to the Company, its Subsidiaries or their respective businesses;

(c) contravene, conflict with or result in a material violation of any of the terms or requirements of, or give any Governmental Body the right to revoke, withdraw, suspend, cancel, terminate or modify, any Governmental Authorization that is held by the Company or its Subsidiaries except as would not be material to the Company, its Subsidiaries or their respective businesses;

(d) contravene, conflict with or result in a material violation or breach of, or result in a default under, any provision of any Company Material Contract, or to the Knowledge of the Company, give any Person the right to: (i) declare a default or exercise any remedy under any Company Material Contract; (ii) any material

payment, rebate, chargeback, penalty or change in delivery schedule under any such Company Material Contract; (iii) accelerate the maturity or performance of any Company Material Contract; or (iv) cancel, terminate or modify any term of any Company Material Contract, except, in the case of any breach, default, penalty or modification, which would not, individually or in the aggregate, have a Company Material Adverse Effect; or

(e) result in the imposition or creation of any material Encumbrance upon or with respect to any asset owned or used by the Company or its Subsidiaries (except for Permitted Encumbrances). Except for (i) the Required Company Stockholder Vote, (ii) the filing of the First Certificate of Merger with the Secretary of State of the State of Delaware pursuant to the DGCL, (iii) any required filings under the HSR Act and any foreign antitrust Legal Requirement and (iv) such consents, waivers, approvals, orders, authorizations, registrations, declarations and filings as may be required under applicable federal and state securities laws, neither the Company nor any of its Subsidiaries was, is, or will be required to make any filing with or give any notice to, or to obtain any Consent from, any Person in connection with (x) the execution, delivery or performance of this Agreement, or (y) the consummation of the Mergers or any of the Contemplated Transactions. The Company Board has taken and will take all actions necessary to ensure that the restrictions applicable to business combinations contained in Section 203 of the DGCL are, and will be, inapplicable to the execution, delivery and performance of this Agreement and the Company Stockholder Support Agreements and to the consummation of the Mergers and the Contemplated Transactions. No other state takeover statute or similar Legal Requirement applies or purports to apply to the Mergers, this Agreement, the Company Stockholder Support Agreements or any of the other Contemplated Transactions.

2.6 Capitalization, Etc.

(a) The authorized capital stock of the Company as of the date of this Agreement consists solely of 30,000 shares of Company Common Stock, par value $0.01 per share, of which 21,230 shares have been issued and are outstanding as of the date of this Agreement. The Company does not hold any shares of its capital stock in its treasury. All of the outstanding shares of Company Common Stock have been duly authorized and validly issued, and are fully paid and nonassessable. Except as set forth in Part 2.6(a) of the Company Disclosure Schedule, none of the outstanding shares of Company Common Stock is entitled or subject to any preemptive right, right of participation, right of maintenance or any similar right and none of the outstanding shares of Company Common Stock is subject to any right of first refusal in favor of the Company. Except as set forth in Part 2.6(a) there are no outstanding bonds, debentures, notes or other indebtedness of the Company having a right to vote on any matters on which the Company stockholders have a right to vote. Except as contemplated herein or as set forth in Part 2.6(a) of the Company Disclosure Schedule, there is no Company Contract relating to the voting or registration of, or restricting any Person from purchasing, selling, pledging or otherwise disposing of (or granting any option or similar right with respect to), any shares of Company Common Stock. The Company is not under any obligation, nor is it bound by any Contract pursuant to which it may become obligated, to repurchase, redeem or otherwise acquire any outstanding shares of Company Common Stock or other securities. Part 2.6(a) of the Company Disclosure Schedule accurately and completely lists all repurchase and forfeiture rights held by the Company with respect to shares of Company Common Stock and specifies each holder of Company Common Stock, the date of purchase of such Company Common Stock, the number of shares of Company Common Stock subject to such repurchase rights, the purchase price paid by such holder, and the vesting schedule under which such repurchase rights lapse.

(b) The Company does not have, and has never had, any stock option plan or any other plan, program, agreement or arrangement providing for any equity-based compensation for any Person.

(c) There is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of the Company or any of its Subsidiaries; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of the Company or any of its Subsidiaries; (iii) stockholder rights plan (or similar plan commonly referred to as a “poison pill”) or Contract under which the

Company or any of its Subsidiaries is or may become obligated to sell or otherwise issue any shares of its capital stock or any other securities or (iv) condition or circumstance that may give rise to or provide a basis for the assertion of a claim by any Person to the effect that such Person is entitled to acquire or receive any shares of capital stock or other securities of the Company or any of its Subsidiaries. There are no outstanding or authorized stock appreciation, phantom stock, profit participation or other similar rights with respect to the Company or any of its Subsidiaries.

(d) All outstanding shares of Company Common Stock, options and other securities of the Company have been issued and granted in material compliance with (i) all applicable securities laws and other applicable Legal Requirements, and (ii) all requirements set forth in applicable Contracts.

(e) The Company has not declared, made or paid any dividends or distributions on any shares of Company Capital Stock.

2.7 Financial Statements; Bank Accounts.

(a) Part 2.7(a) of the Company Disclosure Schedule includes true and complete copies of (i) the Company's unaudited consolidated balance sheets at December 31, 2014 and December 31, 2015, (ii) the Company Interim Balance Sheet, (iii) the Company's unaudited consolidated statements of income, cash flow and stockholders' equity for the years ended December 31, 2014 and December 31, 2015 and (iv) the Company's unaudited statements of income, cash flow and stockholders' equity for the eleven months ended November 30, 2016 (collectively, the "***Company Financials***"). The Company Financials (1) were prepared in accordance with United States generally accepted accounting principles ("***GAAP***") (except as may be indicated in the footnotes to such Company Financials and that unaudited financial statements may not have notes thereto and other presentation items that may be required by GAAP and are subject to normal and recurring year-end adjustments that are not reasonably expected to be material in amount) applied on a consistent basis unless otherwise noted therein throughout the periods indicated and (2) fairly present, in all material respects, the financial condition and operating results of the Company and its consolidated Subsidiaries as of the dates and for the periods indicated therein.

(b) Each of the Company and its Subsidiaries maintains accurate books and records reflecting their assets and liabilities.

(c) Neither the Company nor any of its Subsidiaries is a party to, nor does it have any commitment to become a party to, any off-balance sheet joint-venture, off-balance sheet partnership or any other "off-balance sheet arrangements" (as defined in Item 303(a) of Regulation S-K).

(d) Part 2.7(d) of the Company Disclosure Schedule provides accurate information with respect to each account maintained by or for the benefit of the Company or any of its Subsidiaries at any bank or other financial institution, including the name of the bank or financial institution, the account number, the balance as of the date of this Agreement and the names of all individuals authorized to draw on or make withdrawals from such accounts.

(e) The Company and its Subsidiaries have no existing accounts receivable.

(f) Since May 12, 2015, there have been no formal internal investigations regarding financial reporting or accounting policies and practices discussed with, reviewed by or initiated at the direction of an executive officer of the Company, the Company Board or any committee thereof. Since May 12, 2015, the Company has not identified (i) any significant deficiency or material weakness in the design or operation of the system of internal accounting controls utilized by the Company and its Subsidiaries that could reasonably be expected to adversely affect the Company's or any of its Subsidiaries' ability to initiate, authorize, record, process, or report external financial data such that there is more than a remote likelihood that a misstatement of

the financial statements that is more than inconsequential will not be prevented or detected, (ii) any fraud, whether or not material, that involves the Company, any of its Subsidiaries, the Company's management or other employees who have a role in the preparation of financial statements or the internal accounting controls utilized by the Company and its Subsidiaries or (iii) any claim or allegation regarding any of the foregoing.

2.8 Absence of Changes. Except as set forth on Part 2.8 of the Company Disclosure Schedule, between September 30, 2016 and the date of this Agreement:

(a) there has not been any Company Material Adverse Effect or an event or development that would, individually or in the aggregate, reasonably be expected to have a Company Material Adverse Effect;

(b) there has not been any material loss, damage or destruction to, or any material interruption in the use of, any of the assets or business of the Company or any of its Subsidiaries (whether or not covered by insurance);

(c) the Company has not: (i) declared, accrued, set aside or paid any dividend or made any other distribution in respect of any shares of capital stock; or (ii) repurchased, redeemed or otherwise reacquired any shares of capital stock or other securities except for the repurchase or reacquisition of shares pursuant to the Company's rights arising upon an individual's termination as an employee, director or consultant;

(d) the Company has not sold, issued or granted, or authorized the issuance of: (i) any capital stock or other security; or (ii) any instrument convertible into or exchangeable for any capital stock or other security;

(e) there has been no amendment to any of the Organizational Documents of the Company or any of its Subsidiaries, and neither the Company nor any of its Subsidiaries has effected or been a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction;

(f) neither the Company nor any of its Subsidiaries has formed any Subsidiary or acquired any equity interest or other interest in any other Entity;

(g) neither the Company nor any of its Subsidiaries has: (i) lent money to any Person; (ii) incurred or guaranteed any indebtedness; (iii) issued or sold any debt securities or options, warrants, calls or other rights to acquire any debt securities; (iv) guaranteed any debt securities of others; or (v) made any capital expenditure or commitment outside the Ordinary Course of Business;

(h) neither the Company nor any of its Subsidiaries has changed any of its accounting methods, principles or practices;

(i) in each case for purposes of this clause (i), other than as required by law, neither the Company nor any of its Subsidiaries has made, changed or revoked any material Tax election, filed any material amendment to any Tax Return, adopted or changed any accounting method in respect of Taxes, changed any annual Tax accounting period, entered into any Tax allocation agreement, Tax sharing agreement or Tax indemnity agreement, other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers or landlords, entered into any closing agreement with respect to any Tax, settled or compromised any claim, notice, audit report or assessment in respect of material Taxes, applied for or entered into any ruling from any Tax authority with respect to Taxes, surrendered any right to claim a material Tax refund, or consented to any extension or waiver of the statute of limitations period applicable to any material Tax claim or assessment;

(j) neither the Company nor any of its Subsidiaries has commenced or settled any Legal Proceeding;

(k) neither the Company nor any of its Subsidiaries has entered into any material transaction outside the Ordinary Course of Business;

(l) neither the Company nor any of its Subsidiaries has acquired any material assets nor sold, leased or otherwise irrevocably disposed of any of its material assets or properties, nor has any Encumbrance been granted with respect to such assets or properties, except in the Ordinary Course of Business;

(m) there has been no entry into, amendment or termination of any Company Material Contract;

(n) there has been no (i) material change in pricing or royalties or other payments set or charged by the Company or any of its Subsidiaries to its customers or licensees, (ii) agreement by the Company or any of its Subsidiaries to change pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to the Company or any of its Subsidiaries or (iii) material change in pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to the Company or any of its Subsidiaries; and

(o) neither the Company nor any of its Subsidiaries has negotiated, agreed or committed to take any of the actions referred to in clauses "(c)" through "(n)" above (other than negotiations between the Parties to enter into this Agreement).

2.9 Absence of Undisclosed Liabilities. As of the date hereof, neither the Company nor any of its Subsidiaries has any Liability, individually or in the aggregate, except for: (a) Liabilities reflected on the face of the Company Interim Balance Sheet; (b) normal and recurring current Liabilities that have been incurred by the Company or its Subsidiaries since the date of the Company Interim Balance Sheet in the Ordinary Course of Business and which are not in excess of $50,000 in the aggregate; (c) Liabilities for performance of obligations of the Company or any of its Subsidiaries under Company Contracts; (d) Liabilities incurred in connection with this Agreement and (e) Liabilities listed in Part 2.9 of the Company Disclosure Schedule.

2.10 Title to Assets. Each of the Company and its Subsidiaries owns, and has good and valid title to, or, in the case of leased properties and assets, valid leasehold interests in, all tangible properties or assets and equipment used or held for use in its business or operations or purported to be owned by it, including: (a) all assets reflected on the Company Interim Balance Sheet and (b) all other assets reflected in the books and records of the Company or any of its Subsidiaries as being owned by the Company or such Subsidiary. All of said assets are owned by the Company or any of its Subsidiaries free and clear of any Encumbrances, except for any Permitted Encumbrances.

2.11 Real Property; Leasehold. Neither the Company nor any of its Subsidiaries owns or has ever owned any real property. The Company has made available to Arrow (i) an accurate and complete list of all real properties with respect to which the Company directly or indirectly holds a valid leasehold interest as well as any other real estate that is in the possession of or leased by the Company and its Subsidiaries and (ii) copies of all leases under which any such real property is possessed (the "***Company Real Estate Leases***"). Part 2.11 of the Company Disclosure Schedule sets forth a complete and accurate list of all Company Real Estate Leases. Neither the Company nor any of its Subsidiaries is in default under any of the Company Real Estate Leases, except where such defaults have not had and would not be reasonably expected to have, individually or in the aggregate, a Company Material Adverse Effect, and to the Knowledge of the Company, there is no default by any of the lessors thereunder.

2.12 Intellectual Property.

(a) The Company, directly or through any of its Subsidiaries, owns, or has the right to use, and has the right to bring actions for the infringement of, all Company IP Rights, except for any failure to own or has the right to use, or has the right to bring actions for, that would not reasonably be expected to have a Company Material Adverse Effect.

(b) Part 2.12(b) of the Company Disclosure Schedule is a true and complete listing of all Company Registered IP, setting forth in each case, as applicable, the jurisdictions in which such Company Registered IP

has been issued and applications that have been filed, along with the respective application, registration or filing number or subsequent registration activity thereof. The Company and its Subsidiaries solely own all right, title and interest in and to, or have the valid and enforceable right to use, each item of Company Registered IP, free and clear of any Encumbrances, except for Permitted Encumbrances.

(c) Part 2.12(c) of the Company Disclosure Schedule identifies all material Company IP Rights Agreements pursuant to which Company IP Rights are licensed to the Company or any of its Subsidiaries (other than (I) any non-customized software that (A) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (B) is not incorporated into, or material to the development, manufacturing, or distribution of, any of the Company's or any of its Subsidiaries' products or services, (II) any generally available (i.e., "off the shelf") third party licenses of Intellectual Property, and (III) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials).

(d) Part 2.12(d)(i) of the Company Disclosure Schedule identifies all material Company IP Rights Agreements pursuant to which any Person has been granted any license under, or otherwise has received or acquired any right (whether or not currently exercisable) or interest in, any material Company IP Rights. Except as identified in Part 2.12(d)(ii) of the Company Disclosure Schedule, the Company is not bound by, and no Company IP Rights are subject to, any Company IP Rights Agreement containing any covenant or other provision that limits or restricts the ability of the Company or any of its Subsidiaries to use, exploit, assert, or enforce any Company IP Rights anywhere in the world in each case as would materially limit the business of the Company as currently conducted or planned to be conducted.

(e) To the Knowledge of the Company and its Subsidiaries, the Company or one of its Subsidiaries exclusively owns all right, title, and interest to and in material Company IP Rights (other than Company IP Rights (i) exclusively or non-exclusively licensed to the Company or one of its Subsidiaries as identified in Part 2.12(c) of the Company Disclosure Schedule and (ii) (I) any non-customized software that (A) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (B) is not incorporated into, or material to the development, manufacturing, or distribution of, any of the Company's or any of its Subsidiaries' products or services, (II) any generally available (i.e., "off the shelf") third party licenses of Intellectual Property, and (III) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials) free and clear of any Encumbrances (other than Permitted Encumbrances). Without limiting the generality of the foregoing:

(i) Since May 12, 2015, each Person who is or was an employee or contractor of the Company or any of its Subsidiaries and who is or was involved in the creation or development of any material Company IP Rights has signed a valid, enforceable agreement containing an assignment of such Intellectual Property to the Company or such Subsidiary and confidentiality provisions protecting trade secrets and confidential information of the Company and its Subsidiaries. To the Knowledge of the Company and its Subsidiaries, no current or former stockholder, officer, director, or employee of the Company or any of its Subsidiaries has any claim, right (whether or not currently exercisable), or interest to or in any material Company IP Rights. To the Knowledge of the Company and its Subsidiaries, no employee of the Company or any of its Subsidiaries is (a) bound by or otherwise subject to any Contract restricting him or her from performing his or her duties for the Company or such Subsidiary or (b) in breach of any Contract with any former employer or other Person concerning material Company IP Rights or confidentiality provisions protecting trade secrets and confidential information comprising material Company IP Rights.

(ii) No funding, facilities, or personnel of any Governmental Body were used to develop or create, in whole or in part, any material Company IP Rights in which the Company or any of its Subsidiaries has an ownership interest.

(iii) The Company and each of its Subsidiaries has taken reasonable steps to maintain the confidentiality of and otherwise protect and enforce its rights in all proprietary information that the Company or such Subsidiary holds, or purports to hold, as a Trade Secret.

(iv) To the Knowledge of the Company and its Subsidiaries, the Company IP Rights constitute all Intellectual Property material to and necessary for the Company and its Subsidiaries to conduct its business as currently conducted.

(f) The Company has delivered, or made available to Arrow, a complete and accurate copy of all material Company IP Rights Agreements. Neither the Company nor any of its Subsidiaries is a party to any Contract (A) pursuant to which the execution, delivery and performance of this Agreement and the consummation of the Contemplated Transactions will constitute a material breach or (B) as a result of such execution, delivery and performance of this Agreement and the consummation of the Contemplated Transactions will cause the forfeiture or termination of or Encumbrance upon, or the grant of any license or other right to, or give rise to a right of forfeiture or termination of or Encumbrance upon, any Company IP Rights or impair the right of the Company or the Surviving Corporation and its Subsidiaries to use, sell or license any Company IP Rights or portion thereof except for the occurrence of any such breach, forfeiture, termination, Encumbrance, grant or impairment that would not, individually or in the aggregate, be reasonably expected to result in a Company Material Adverse Effect. With respect to each of the Company IP Rights Agreements: (i) each such agreement is valid and binding on the Company or its Subsidiaries, as applicable, and in full force and effect; (ii) the Company has not received any written notice of termination or cancellation under such agreement, or received any written notice of breach or default under such agreement, which breach has not been cured or waived and (iii) neither the Company nor its Subsidiaries, and to the Knowledge of the Company, no other party to any such agreement, is in breach or default thereof in any material respect.

(g) The Company and its Subsidiaries have no material Liability for violation of any Company IP Rights Agreement, or, for infringement or misappropriation of any valid Intellectual Property right of any other party, which violation, infringement or misappropriation would reasonably be expected to have a Company Material Adverse Effect. To the Knowledge of the Company and its Subsidiaries, (i) no third party is infringing upon, or violating any license or agreement with the Company or its Subsidiaries relating to any material Company IP Rights and (ii) there is no current or pending challenge, claim or Legal Proceeding (including, but not limited to, opposition, interference or other proceeding in any patent or other government office) contesting the validity, ownership or right to use, sell, license or dispose of any material Company IP Rights, nor has the Company or any of its Subsidiaries received any written notice asserting that any material Company IP Rights or the proposed use, sale, license or disposition thereof conflicts with or infringes or misappropriates or will conflict with or infringe or misappropriate the rights of any other Person.

(h) Each item of Company Registered IP is and at all times has been filed and maintained in compliance with all applicable Legal Requirements and all filings, payments, and other actions required to be made or taken to maintain such item of Company Registered IP in full force and effect have been made by the applicable deadline.

(i) None of the goodwill associated with or inherent in any Trademark (whether registered or unregistered) in which the Company or any of its Subsidiaries has or purports to have an ownership interest has been impaired as determined by the Company or any of its Subsidiaries in accordance with GAAP.

(j) Except as set forth in Part 2.12(j) of the Company Disclosure Schedule, (i) neither the Company nor any of its Subsidiaries is bound by any Contract to indemnify, defend, hold harmless, or reimburse any other Person with respect to any Intellectual Property infringement, misappropriation, or similar claim and (ii) neither the Company nor any of its Subsidiaries has ever assumed, or agreed to discharge or otherwise take responsibility for, any existing or potential liability of another Person for infringement, misappropriation, or violation of any Intellectual Property right, which assumption, agreement or responsibility remains in force as of the date of this Agreement.

(k) The Company is, and has at all times since May 12, 2015 been, in material compliance with all Legal Requirements applicable to the Company regarding the protection, storage, use and disclosure of Personal Data collected and retained by the Company.

2.13 Agreements, Contracts and Commitments. Part 2.13 of the Company Disclosure Schedule identifies each Company Contract to which the Company is a party and to which the Company has any currently effective binding obligations or by which any of its assets are currently bound:

(a) relating to any agreement of indemnification or guaranty not entered into in the Ordinary Course of Business other than indemnification agreements between the Company and any of its officers or directors;

(b) containing any covenant limiting the freedom of the Company, its Subsidiaries or the Surviving Corporation to engage in any line of business or compete with any Person;

(c) relating to capital expenditures and involving obligations after the date of this Agreement in excess of $25,000 and not cancelable without penalty;

(d) relating to the disposition or acquisition of material assets or any ownership interest in any Entity;

(e) relating to any mortgages, indentures, loans, notes or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit in excess of $25,000 or creating any material Encumbrances with respect to any assets of the Company or any of its Subsidiaries or any loans or debt obligations with officers or directors of the Company;

(f) relating to (i) any distribution agreement currently in force (identifying any that contain exclusivity provisions); (ii) any agreement currently in force for the conduct of research, pre-clinical or clinical studies regarding the products under development by the Company or its Subsidiaries; (iii) any dealer, distributor, joint marketing, alliance, joint venture, cooperation, development or other agreement currently in force under which the Company or its Subsidiaries has continuing obligations to develop, market, or supply any product, technology or service, or any agreement pursuant to which the Company or its Subsidiaries has continuing obligations to develop any Intellectual Property that will not be owned, in whole or in part, by the Company or such Subsidiary or (iv) any Contract currently in force to license any third party to manufacture or produce any Company product, service or technology or any Contract currently in force to sell, distribute or commercialize any Company products or service except agreements with distributors or sales representatives in the Ordinary Course of Business;

(g) with any Person, including any financial advisor, broker, finder, investment banker or other Person, providing advisory services to the Company in connection with the Contemplated Transactions;

(h) with any manufacturer, vendor, or other Person for the supply of materials or performance of services by such third party to Company in relation to the manufacture of the Company's products or Company Product Candidates;

(i) that would reasonably be expected to have a material effect on the ability of the Company to perform any of its material obligations under this Agreement, or to consummate any of the Contemplated Transactions;

(j) (i) which involves payment or receipt by the Company or its Subsidiaries under any such agreement, contract or commitment of $50,000 or more in the aggregate or obligations after the date of this Agreement in excess of $50,000 in the aggregate, or (ii) that is material to the business or operations of the Company and its Subsidiaries; or

(k) is a Company IP Right Agreement.

The Company has made available to Arrow accurate and complete copies of all Contracts to which the Company or its Subsidiaries is a party or by which it is bound of the type described in clauses (a) through (k) above (any such Contract, a "***Company Material Contract***"), including all amendments thereto. There are no Company Material Contracts that are not in written form. Except as set forth on Part 2.13 of the Company Disclosure Schedule, neither the Company nor any of its Subsidiaries has, nor to the Company's Knowledge, as of the date of this Agreement has any other party to a Company Material Contract, breached, violated or defaulted under, or received notice that it has breached, violated or defaulted under any Company Material Contract in such manner as would permit any other party to cancel or terminate any such Company Material Contract, or would permit any other party to seek damages. As to the Company and its Subsidiaries, as of the date of this Agreement, each Company Material Contract is valid, binding, enforceable and in full force and effect, subject to the Enforceability Exceptions. To the Knowledge of the Company, no Person is renegotiating any material amount paid or payable to the Company under any Company Material Contract or any other material term or provision of any Company Material Contract.

2.14 Compliance; Permits; Restrictions.

(a) The Company and each of its Subsidiaries are, and since May 12, 2015 have been, in compliance in all material respects with all material Legal Requirements. No investigation, claim, suit, proceeding, audit or other action by any Governmental Body or Governmental Authority is pending or, to the Knowledge of the Company, threatened against the Company or any of its Subsidiaries, nor has any Governmental Body or Governmental Authority indicated to the Company in writing an intention to conduct the same. There is no agreement, judgment, injunction, order or decree binding upon the Company or any of its Subsidiaries which (i) has or would reasonably be expected to have the effect of prohibiting or materially impairing any business practice of the Company or any of its Subsidiaries, any acquisition of material property by the Company or any of its Subsidiaries or the conduct of business by the Company or any of its Subsidiaries as currently conducted, (ii) would reasonably be expected to have an adverse effect on the Company's ability to comply with or perform any covenant or obligation under this Agreement or (iii) would reasonably be expected to have the effect of preventing, materially delaying, making illegal or otherwise interfering with the Mergers or any of the Contemplated Transactions.

(b) Neither the Company nor its Subsidiaries holds any Governmental Authorization in connection with the operation of their businesses as currently conducted.

(c) There are no proceedings pending or, to the Knowledge of the Company, threatened with respect to an alleged violation by the Company or any of its Subsidiaries of the Federal Food, Drug, and Cosmetic Act ("***FDCA***"), Food and Drug Administration ("***FDA***") regulations adopted thereunder, the Controlled Substance Act or any other similar Legal Requirements promulgated by the FDA or other comparable Governmental Body, including the European Medicines Agency ("***EMA***"), responsible for regulation of the development, clinical testing, manufacturing, sale, marketing, distribution and importation or exportation of drug products ("***Drug Regulatory Agency***").

(d) The Company and each of its Subsidiaries holds all required Governmental Authorizations issuable by any Drug Regulatory Agency necessary for the conduct of the business of the Company or such Subsidiary as currently conducted, and development, clinical testing, manufacturing, marketing, distribution and importation or exportation, as currently conducted, of any of its products or product candidates (the "***Company Product Candidates***") (collectively, the "***Company Regulatory Permits***") and no such Company Regulatory Permit has been (i) revoked, withdrawn, suspended, canceled or terminated or (ii) modified in any materially adverse manner. The Company and each of its Subsidiaries has not received any written notice or other written communication from any Drug Regulatory Agency regarding any revocation, withdrawal, suspension, cancellation, termination or material modification of any Company Regulatory Permit. Except for information regarding Cytisine contained in publicly available sources, the Company has made available to Arrow all

information requested by Arrow in the Company's or its Subsidiaries' possession or control relating to the Company Product Candidates in the territories in which the Company and its Subsidiaries has the right to develop and otherwise commercialize such Company Product Candidates and the development, clinical testing, manufacturing, importation and exportation of the Company Product Candidates, including complete copies of the following (to the extent there are any): (x) adverse event reports; clinical study reports and material study data; and inspection reports, notices of adverse findings, warning letters, filings and letters and other written correspondence to and from any Drug Regulatory Agency; and meeting minutes with any Drug Regulatory Agency; and (y) similar reports, material study data, notices, letters, filings, correspondence and meeting minutes with any other Governmental Authority.

(e) All clinical, pre-clinical and other studies and tests conducted by or on behalf of, or sponsored by, the Company or its Subsidiaries with respect to their respective current products or product candidates, including the Company Product Candidates, were and, if still pending, are being conducted in all material respects in accordance with standard medical and scientific research procedures and in compliance with the applicable regulations of the Drug Regulatory Agencies and other applicable Legal Requirements, including 21 C.F.R. Parts 50, 54, 56, 58 and 312. Since May 12, 2015, neither the Company nor any of its Subsidiaries has received any written notices, correspondence, or other communications from any Drug Regulatory Agency requiring, or to the Knowledge of the Company, threatening to initiate, the termination or suspension of any clinical studies conducted by or on behalf of, or sponsored by, the Company or any of its Subsidiaries or in which the Company or any of its Subsidiaries or their respective current products or product candidates, including the Company Product Candidates, have participated.

(f) Neither the Company nor any of its Subsidiaries is the subject of any pending, or to the Knowledge of the Company or its Subsidiaries, threatened investigation in respect of its business or products by the FDA pursuant to its "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto. To the Knowledge of the Company or any of its Subsidiaries, neither the Company nor any of its Subsidiaries has committed any acts, made any statement, or failed to make any statement, in each case in respect of its business or products that would violate the FDA's "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy, and any amendments thereto. None of the Company, any of its Subsidiaries or any of their respective officers, employees or agents has been convicted of any crime or engaged in any conduct that could result in a debarment or exclusion under (i) 21 U.S.C. Section 335a or (ii) any similar applicable Legal Requirement. To the Knowledge of the Company, no debarment or exclusionary claims, actions, proceedings or investigations in respect of their business or products are pending or threatened against the Company, any of its Subsidiaries or any of their respective officers, employees or agents.

(g) The Company has filed with the FDA, EMA, any other Governmental Body, and any institutional review board or comparable body, all required notices, supplemental applications, and annual or other reports, including adverse experience reports, with respect to each investigational new drug application or any comparable foreign regulatory application, related to the manufacture, testing, study, or sale of any of its products or product candidates, as applicable.

2.15 Legal Proceedings; Orders.

(a) There is no pending Legal Proceeding, and, to the Knowledge of the Company, no Person has threatened in writing to commence any Legal Proceeding: (i) that involves the Company or any of its Subsidiaries, any Company Associate (in his or her capacity as such) or any of the material assets owned by the Company or its Subsidiaries or (ii) that challenges, or that may have the effect of preventing, delaying, making illegal or otherwise interfering with, the Mergers or the Contemplated Transactions. With regard to any Legal Proceeding set forth on Part 2.15 of the Company Disclosure Schedule, the Company has made available to Arrow or its counsel all pleadings and material written correspondence related to such Legal Proceeding (if any), and all insurance policies and material written correspondence with brokers and insurers related to such Legal

Proceedings. The Company has materially complied with the requirements of its insurance policy or policies to obtain coverage with respect to such Legal Proceeding (if any) under such insurance policy or policies.

(b) There is no order, writ, injunction, judgment or decree to which the Company or any of its Subsidiaries, or any of the material assets owned or used by the Company or any of its Subsidiaries is subject. To the Knowledge of the Company, no officer or other Key Employee of the Company or any of its Subsidiaries is subject to any order, writ, injunction, judgment or decree that prohibits such officer or other employee from engaging in or continuing any conduct, activity or practice relating to the business of the Company or any of its Subsidiaries or to any material assets owned or used by the Company or any of its Subsidiaries.

2.16 Tax Matters.

(a) Except as set forth on Part 2.16(a) of the Company Disclosure Schedule, the Company and each of its Subsidiaries have timely filed all federal income Tax Returns and other material Tax Returns that they were required to file under applicable Legal Requirements. All such Tax Returns were true, correct and complete in all material respects and have been prepared in material compliance with all applicable Legal Requirements.

(b) Except as set forth on Part 2.16(b) of the Company Disclosure Schedule, all material Taxes due and owing by the Company or any of its Subsidiaries on or before the date hereof (whether or not shown on any Tax Return) have been paid. The unpaid Taxes (if any) of the Company and any of its Subsidiaries will be reserved in accordance with GAAP. Since the date of the Company Interim Balance Sheet, neither the Company nor any of its Subsidiaries has incurred any material Liability for Taxes outside the Ordinary Course of Business or otherwise inconsistent with past custom and practice.

(c) The Company and each of its Subsidiaries have withheld and paid all material Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, stockholder, or other third party.

(d) There are no Encumbrances for a material amount of Taxes (other than Taxes not yet due and payable or Taxes that are being contested in good faith and for which adequate reserves have been made on the Company's Unaudited Interim Balance Sheet in accordance with GAAP) upon any of the assets of the Company or any of its Subsidiaries.

(e) No deficiencies for a material amount of Taxes with respect to the Company or any of its Subsidiaries have been claimed, proposed or assessed by any Governmental Body in writing. There are no pending (or, based on written notice, threatened) audits, assessments or other actions for or relating to any liability in respect of a material amount of Taxes of the Company or any of its Subsidiaries. No issues relating to Taxes of the Company or any of its Subsidiaries were raised by the relevant Tax authority in any completed audit or examination that would reasonably be expected to result in a material amount of Taxes in a later taxable period. Except as set forth on Part 2.16(e) of the Company Disclosure Schedule, the Company has delivered or made available to Arrow complete and accurate copies of all federal income Tax and all other material Tax Returns of the Company and each of its Subsidiaries (and predecessors of each) for all taxable years remaining open under the applicable statute of limitations, and complete and accurate copies of all examination reports and statements of deficiencies assessed against or agreed to by the Company and each of its Subsidiaries (and predecessors of each), with respect to federal income Tax and all other material Taxes. Except as set forth on Part 2.16(e) of the Company Disclosure Schedule, neither the Company nor any of its Subsidiaries (or any of their predecessors) has waived any statute of limitations in respect of Taxes or agreed to any extension of time with respect to a material Tax assessment or deficiency, nor has any request been made in writing for any such extension or waiver.

(f) All material elections with respect to Taxes affecting the Company or any of its Subsidiaries as of the date hereof, to the extent such elections are not shown on or in the Tax Returns that have been delivered or made available to Arrow, are set forth on Part 2.16(f) of the Company Disclosure Schedule. Neither the Company nor any of its Subsidiaries has agreed, or is required, to make any adjustment under Section 481(a) of

the Code by reason of a change in accounting method or otherwise or has elected at any time to be treated as an S corporation within the meaning of Sections 1361 or 1362 of the Code.

(g) Neither the Company nor any of its Subsidiaries has been a United States real property holding corporation within the meaning of Section 897(c)(2) of the Code during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(h) Neither the Company nor any of its Subsidiaries is a party to any Tax allocation, Tax sharing or similar agreement (including indemnity arrangements), other than commercial contracts entered into in the Ordinary Course of Business.

(i) Neither the Company nor any of its Subsidiaries has ever been a member of an affiliated group filing a consolidated, combined or unitary Tax Return (other than a group the common parent of which is the Company) for federal, state, local or foreign Tax purposes. Neither the Company nor any of its Subsidiaries has any Liability for the Taxes of any Person (other than the Company and any of its Subsidiaries) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or foreign law), as a transferee or successor, by Contract, or otherwise.

(j) Neither the Company nor any of its Subsidiaries has distributed stock of another Person, or has had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Section 355 of the Code or Section 361 of the Code (or any similar provision of state, local or foreign law).

(k) Neither the Company nor any of its Subsidiaries will be required to include any item of income in, or exclude any item of deduction from, taxable income for any period (or any portion thereof) ending after the Closing Date as a result of any (i) installment sale or other open transaction disposition made on or prior to the Closing Date, (ii) agreement with any Tax authority (including any closing agreement described in Section 7121 of the Code or any similar provision of state, local or foreign law) made or entered into on or prior to the Closing Date, (iii) a change in method of accounting occurring prior to the Closing Date, (iv) a prepaid amount received, or paid, prior to the Closing Date or (v) deferred gains arising prior to the Closing Date.

(l) Except as set forth on Part 2.16(l) of the Company Disclosure Schedule to the Knowledge of the Company, after reasonable inquiry, the Company does not own any interest in any controlled foreign corporation (as defined in Section 957 of the Code), passive foreign investment company (as defined in Section 1297 of the Code), or other entity the income of which is required to be included in the income of the Company.

(m) Neither the Company nor any of its Subsidiaries is a partner for Tax purposes with respect to any joint venture, partnership, or, to the Knowledge of the Company, other arrangement or contract which is treated as a partnership for Tax purposes who receives or has previously received a Schedule K-1 or a comparable form under foreign law.

(n) Neither the Company nor any of its Subsidiaries has entered into any transaction identified as a "listed transaction" for purposes of Treasury Regulations Sections 1.6011-4(b)(2) or 301.6111-2(b)(2).

(o) Except as set forth on Part 2.16(o) of the Company Disclosure Schedule, neither the Company nor any of its Subsidiaries has reported having a permanent establishment in any country other than the United States, as defined in any applicable Tax treaty between the United States and such other country.

(p) Neither the Company nor any of its Subsidiaries has taken any action, or has any knowledge of any fact or circumstance, that could reasonably be expected to prevent the transactions contemplated hereby, including the Mergers, from qualifying for the Intended Tax Treatment.

2.17 Employee and Labor Matters; Benefit Plans.

(a) The employment of each of the Company's and any of its Subsidiaries' employees is terminable by the Company or the applicable Subsidiary at will (or otherwise in accordance with general principles of wrongful termination law) (except for employees of the Company located in a jurisdiction that does not recognize the "at will" employment concept). The Company has made available to Arrow accurate and complete copies of all employee manuals and handbooks, disclosure materials, policy statements and other materials relating to the employment of Company Associates to the extent currently effective and material.

(b) To the Knowledge of the Company, no officer or Key Employee of the Company or any of its Subsidiaries intends to terminate his or her employment with the Company or the applicable Subsidiary, nor has any such officer or Key Employee threatened or expressed in writing any intention to do so.

(c) Neither the Company nor any of its Subsidiaries is a party to, bound by, nor has a duty to bargain under, any collective bargaining agreement or other Contract with a labor organization representing any of its employees, and there are no labor organizations representing, purporting to represent or, to the Knowledge of the Company, seeking to represent any employees of the Company or any of its Subsidiaries.

(d) There has never been, nor has there been any threat of, any strike, slowdown, work stoppage, lockout, job action, union, organizing activity, question concerning representation or any similar union activity or dispute, affecting the Company or any of its Subsidiaries.

(e) To the Knowledge of the Company, neither the Company nor any of its Subsidiaries is or has been engaged in any unfair labor practice within the meaning of the National Labor Relations Act. There is no Legal Proceeding, claim, labor dispute or grievance pending or, to the Knowledge of the Company, threatened or reasonably anticipated relating to any employment contract, privacy right, labor dispute, wages and hours, leave of absence, plant closing notification, workers' compensation policy, long-term disability policy, harassment, retaliation, immigration, employment statute or regulation, safety or discrimination matter involving any Company Associate, including charges of unfair labor practices or discrimination complaints. Part 2.17(e) of the Company Disclosure Schedule lists all material written and all non-written employee benefit plans (as defined in Section 3(3) of ERISA, whether or not subject to ERISA) and all material bonus, equity-based, incentive, deferred compensation, retirement or supplemental retirement, profit sharing, severance, golden parachute, vacation, cafeteria, dependent care, medical care, employee assistance program, education or tuition assistance programs and other similar fringe or employee benefit plans, programs or arrangements, including any employment or executive compensation or severance agreements, written or otherwise, which are currently in effect relating to any present or former employee or director of the Company or any of its Subsidiaries (or any trade or business (whether or not incorporated) which is a Company Affiliate) or which is maintained by, administered or contributed to by, or required to be contributed to by, the Company, any of its Subsidiaries or any Company Affiliate, or under which the Company or any of its Subsidiaries or any Company Affiliate has any current or may incur liability after the date hereof (each, a "***Company Employee Plan***").

(f) Each Company Employee Plan that is intended to be qualified under Section 401(a) of the Code has received a favorable determination with respect to such qualified status from the Internal Revenue Service. Nothing has occurred that would reasonably be expected to adversely affect the qualified status of any such Company Employee Plan or the exempt status of any related trust.

(g) Each Company Employee Plan has been maintained in compliance in all respects with its terms and, both as to form and operation, with all applicable Legal Requirements, including the Code and ERISA.

(h) Neither the Company nor any of its Subsidiaries has engaged in any transaction in violation of Sections 404 or 406 of ERISA or any "prohibited transaction," as defined in Section 4975(c)(1) of the Code, for which no exemption exists under Section 408 of ERISA or Section 4975(c)(2) or (d) of the Code, or has otherwise violated the provisions of Part 4 of Title I, Subtitle B of ERISA. Neither the Company nor any of its

Subsidiaries has knowingly participated in a violation of Part 4 of Title I, Subtitle B of ERISA by any plan fiduciary of any Company Employee Plan subject to ERISA and neither the Company nor any of its Subsidiaries has been assessed any civil penalty under Section 502(l) of ERISA. Neither the Company nor any of its Subsidiaries, or to the Knowledge of the Company, any of its agents or any fiduciary other than the Company, has been in material breach of any contractual or fiduciary obligation with respect to the administration of the Company Employee Plans or trusts or other funding media related thereto.

(i) No Company Employee Plan is subject to Title IV or Section 302 of ERISA or Section 412 of the Code, and neither the Company nor any of its Subsidiaries or Company Affiliate has ever maintained, contributed to or partially or completely withdrawn from, or incurred any obligation or liability with respect to, any such plan. No Company Employee Plan is a Multiemployer Plan, and neither the Company nor any of its Subsidiaries or Company Affiliate has ever contributed to or had an obligation to contribute, or incurred any liability in respect of a contribution, to any Multiemployer Plan. No Company Employee Plan is a Multiple Employer Plan.

(j) No Company Employee Plan provides for medical or death benefits beyond termination of service or retirement, other than (i) pursuant to COBRA or an analogous state law requirement or (ii) death or retirement benefits under a Company Employee Plan qualified under Section 401(a) of the Code.

(k) The Company and each of its Subsidiaries has complied, in all material respects, with all state and federal laws applicable to employees, including but not limited to COBRA, FMLA, CFRA, HIPAA, the Women's Health and Cancer Rights Act of 1998, the Newborn's and Mothers' Health Protection Act of 1996, and any similar provisions of state law applicable to its employees. To the extent required under HIPAA and the regulations issued thereunder, the Company and each of its Subsidiaries has, prior to the Closing Date, performed all material obligations under the medical privacy rules of HIPAA (45 C.F.R. Parts 160 and 164), the electronic data interchange requirements of HIPAA (45 C.F.R. Parts 160 and 162), and the security requirements of HIPAA (45 C.F.R. Part 142). Neither the Company nor any of its Subsidiaries has any unsatisfied obligations to any employees or qualified beneficiaries pursuant to COBRA, HIPAA or any state law governing health care coverage or extension.

(l) The Company and each of its Subsidiaries is in material compliance with all applicable foreign, federal, state and local laws, rules and regulations respecting employment, employment practices, terms and conditions of employment, worker classification, tax withholding, prohibited discrimination, equal employment, fair employment practices, meal and rest periods, immigration status, employee safety and health, wages (including overtime wages), compensation, and hours of work, and in each case, with respect to employees: (i) has withheld and reported all material amounts required by law or by agreement to be withheld and reported with respect to wages, salaries and other payments to employees, (ii) is not liable for any arrears of wages, severance pay or any Taxes or any penalty for failure to comply with any of the foregoing and (iii) is not liable for any material payment to any trust or other fund governed by or maintained by or on behalf of any governmental authority, with respect to unemployment compensation benefits, social security or other benefits or obligations for employees (other than routine payments to be made in the normal course of business and consistent with past practice). There are no actions, suits, claims or administrative matters pending, threatened or reasonably anticipated against the Company or any of its Subsidiaries relating to any employee, employment agreement or Company Employee Plan. There are no pending or, to the Knowledge of the Company, threatened or reasonably anticipated claims or actions against the Company, any of its Subsidiaries, any Company trustee or any trustee of any Subsidiary under any worker's compensation policy or long-term disability policy. Neither the Company nor any Subsidiary thereof is party to a conciliation agreement, consent decree or other agreement or order with any federal, state, or local agency or governmental authority with respect to employment practices. Part 2.17(l) of the Company Disclosure Schedule lists all liabilities of the Company or any of its Subsidiaries to any of their respective employees that result from the termination by the Company or any of its Subsidiaries of such employee's employment or provision of services, a change of control of the Company, or a combination thereof. Neither the Company nor any of its Subsidiaries has any material liability with respect to any misclassification of: (a) any Person as an independent contractor rather than as an employee, (b) any employee leased from another employer or (c) any employee currently or formerly classified as exempt from overtime wages. Neither the

Company nor any of its Subsidiaries has taken any action which would constitute a "plant closing" or "mass layoff" within the meaning of the WARN Act or similar state or local law, issued any notification of a plant closing or mass layoff required by the WARN Act or similar state or local law, or incurred any liability or obligation under WARN or any similar state or local law that remains unsatisfied. No terminations of employees of the Company or any of its Subsidiaries prior to the Closing would trigger any notice or other obligations under the WARN Act or similar state or local law.

(m) Part 2.17(m) of the Company Disclosure Schedule lists all liabilities of the Company or any of its Subsidiaries to any employee, that result from the termination by the Company or any of its Subsidiaries of such employee's employment or provision of services, a change of control of the Company, or a combination thereof. Neither the Company nor any of its Subsidiaries has any material liability with respect to any misclassification of: (a) any Person as an independent contractor rather than as an employee, (b) any employee leased from another employer or (c) any employee currently or formerly classified as exempt from overtime wages.

(n) The Company has obtained a Form I-9 with respect to all of its current and former employees for whom such a form is required by law. Every Person who requires a visa, employment pass or other required permit to work in the country in which he is employed has produced a current employment pass or such other required permit to the Company and possesses all necessary permission to remain in such country and perform services in that country.

(o) With respect to each Company Employee Plan, the Company has made available to Arrow a true and complete copy of, to the extent applicable, (i) such Company Employee Plan, (ii) the most recent annual report (Form 5500) as filed with the Internal Revenue Service, if any (iii) each currently effective trust agreement related to such Company Employee Plan, (iv) the most recent summary plan description for each Company Employee Plan for which such description is required, along with all summaries of material modifications, amendments, resolutions and all other material plan documentation related thereto in the possession of the Company and (v) the most recent Internal Revenue Service determination or opinion letter or analogous ruling under foreign law issued with respect to any Company Employee Plan.

(p) To the Knowledge of the Company, each "nonqualified deferred compensation plan" (as such term is defined under Section 409A(d)(1) of the Code and the guidance thereunder) under which the Company makes, is obligated to make or promises to make, payments (each, a "***Company 409A Plan***") complies in all material respects, in both form and operation, with the requirements of Code Section 409A and the guidance thereunder. No payment to be made under any Company 409A Plan is, or to the Knowledge of the Company will be, subject to the penalties of Code Section 409A(a)(1).

(q) All contributions or premiums required to be made by the Company or its Subsidiaries under the terms of each Company Employee Plan, any collective bargaining agreement or by law have been made in a timely fashion in all material respects in accordance with applicable law and the terms of the Company Employee Plans and any applicable collective bargaining agreement, and the Company does not have, and as of the Closing will not have, any actual or potential unfunded liabilities (other than liabilities accruing after Closing) with respect to any of the Company Employee Plans.

2.18 Environmental Matters. To the Knowledge of the Company, the Company and each of its Subsidiaries has complied in all material respects with all applicable Environmental Laws, which compliance includes the possession by the Company of all permits and other Governmental Authorizations required under applicable Environmental Laws and compliance with the terms and conditions thereof, except where such failure to comply would not reasonably be expected to have a Company Material Adverse Effect.

2.19 Insurance.

(a) Except as set forth on Part 2.19(a) of the Company Disclosure Schedule, the Company has made available to Arrow accurate and complete copies of all material insurance policies relating to the business, assets,

liabilities and operations of the Company and each of its Subsidiaries. Each of such insurance policies is in full force and effect and the Company and each of its Subsidiaries are in material compliance with the terms thereof. Other than customary end of policy notifications from insurance carriers, since May 12, 2015, neither the Company nor any of its Subsidiaries has received any written notice regarding any actual or possible: (i) cancellation or invalidation of any insurance policy; (ii) refusal or denial of any coverage, reservation of rights or rejection of any material claim under any insurance policy or (iii) material adjustment in the amount of the premiums payable with respect to any insurance policy. There is no pending workers' compensation or other claim under or based upon any insurance policy of the Company or any of its Subsidiaries.

(b) The Company does not have existing policies (primary and excess) of directors' and officers' liability insurance maintained by the Company and each of its Subsidiaries as of the date of this Agreement.

2.20 No Financial Advisor. No broker, finder or investment banker is entitled to any brokerage fee, finder's fee, opinion fee, success fee, transaction fee or other fee or commission in connection with the Mergers or the Contemplated Transactions based upon arrangements made by or on behalf of the Company or any of its Subsidiaries.

2.21 Registration Statement. The information supplied by the Company and each of its Subsidiaries for inclusion in the Registration Statement (including any the Company Financials) will not, as of the date of the Registration Statement or as of the date such information is prepared or presented, (i) contain any statement that is inaccurate or misleading with respect to any material facts or (ii) omit to state any material fact necessary in order to make such information, in the light of the circumstances under which such information will be provided, not false or misleading.

2.22 Disclosure. To the Knowledge of the Company, no representation or warranty made by the Company in this Section 2, including the Company Disclosure Schedule, contains any untrue statement of a material fact or omits to state any material fact necessary to make any of them, in light of the circumstances under which they were made, not misleading.

Section 3. REPRESENTATIONS AND WARRANTIES OF ARROW AND MERGER SUBS

Subject to Section 10.13(h), except (i) as set forth in the written disclosure schedule delivered by Arrow to the Company (the "***Arrow Disclosure Schedule***") or (ii) as disclosed in the Arrow SEC Documents filed with the SEC prior to the date hereof and publicly available on the SEC's Electronic Data Gathering Analysis and Retrieval System (but (A) without giving effect to any amendment thereof filed with, or furnished to the SEC on or after the date hereof and (B) excluding any disclosures contained under the heading "Risk Factors" and any disclosure of risks included in any "forward-looking statements" disclaimer or in any other section to the extent they are forward-looking statements or cautionary, predictive or forward-looking in nature), Arrow and Merger Subs represent and warrant to the Company:

3.1 Due Organization; Subsidiaries; Etc.

(a) Each of Arrow, OncoGenex Technologies Inc., a company incorporated under the federal laws of Canada and wholly-owned Subsidiary of Arrow ("***OTI***"), and Merger Subs is a corporation duly incorporated, validly existing and in good standing under the laws of the jurisdiction of its incorporation and has all necessary power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own and use its assets in the manner in which its assets are currently owned and used and (iii) to perform its obligations under all Contracts by which it is bound. Since the date of its incorporation, each of the Merger Subs has not engaged in any activities other than in connection with or as contemplated by this Agreement.

(b) Arrow and OTI are licensed or qualified to do business, and are in good standing, under the laws of all jurisdictions where the nature of their business requires such licensing or qualification other than in jurisdictions where the failure to be so qualified individually or in the aggregate would not be reasonably expected to have an Arrow Material Adverse Effect.

(c) Arrow has no Subsidiaries, except for Merger Subs and OTI; and Arrow does not own any capital stock of, or any equity interest of any nature in, any other Entity, other than Merger Subs and OTI. Arrow has not agreed nor is obligated to make, nor is bound by any Contract under which it may become obligated to make, any future investment in or capital contribution to any other Entity. Arrow has not, at any time, been a general partner of, or has otherwise been liable for any of the debts or other obligations of, any general partnership, limited partnership or other Entity.

3.2 Certificate of Incorporation; Bylaws; Charters and Codes of Conduct. Arrow has made available to the Company accurate and complete copies of Organizational Documents of Arrow, Merger Subs and OTI, other than such documents that can be obtained on the SEC's website at www.sec.gov. Neither Arrow nor OTI have taken any action in breach or violation of any of the provisions of its Organizational Documents nor is in breach or violation of any of the material provisions of its Organizational Documents, except as would not reasonably be expected to have, individually or in the aggregate, an Arrow Material Adverse Effect.

3.3 Authority; Binding Nature of Agreement. Each of Arrow and Merger Subs has all necessary corporate power and authority to enter into and to perform its obligations under this Agreement (subject to, in the case of the First Merger, the Required Arrow Stockholder Vote). The Arrow Board (at meetings duly called and held) has, as of the date of this Agreement: (a) determined that the Mergers and the issuance of shares of Arrow Common Stock pursuant to the Mergers is fair to, advisable and in the best interests of Arrow and its stockholders; (b) approved this Agreement, the issuance of shares of Arrow Common Stock to the stockholders of the Company pursuant to the Mergers and the other Contemplated Transactions and (c) determined to recommend, upon the terms and subject to the conditions of this Agreement, that the stockholders of Arrow vote to approve the issuance of shares of Arrow Common Stock in the Mergers pursuant to the terms of this Agreement. The Merger Sub 1 Board (by unanimous written consent or at meetings duly called and held) has: (x) determined that the First Merger is fair to, advisable and in the best interests of Merger Sub 1 and its sole stockholder; (y) approved this Agreement and the Contemplated Transactions and (z) determined to recommend, upon the terms and subject to the conditions of this Agreement, that the stockholder of Merger Sub 1 vote to adopt this Agreement and thereby approve the Contemplated Transactions. The Merger Sub 2 Board (by unanimous written consent or at meetings duly called and held) has: (x) determined that the Second Merger is fair to, advisable and in the best interests of Merger Sub 2 and its sole stockholder; (y) approved this Agreement and the Contemplated Transactions and (z) determined to recommend, upon the terms and subject to the conditions of this Agreement, that the stockholder of Merger Sub 2 vote to adopt this Agreement and thereby approve the Contemplated Transactions. This Agreement has been duly executed and delivered by Arrow and Merger Subs, and assuming the due authorization, execution and delivery by the Company constitutes the legal, valid and binding obligation of Arrow or Merger Subs (as applicable), enforceable against each of Arrow and Merger Subs in accordance with its terms, subject to Enforceability Exceptions. Prior to the execution of the Arrow Stockholder Support Agreements, the Arrow Board approved the Arrow Stockholder Support Agreements and the transactions contemplated thereby.

3.4 Vote Required. The affirmative vote of the holders of a majority of the shares of Arrow Common Stock outstanding on the record date and entitled to vote thereon is the only vote of the holders of any class or series of Arrow's capital stock necessary to approve the issuance of Arrow Common Stock in the Mergers (the "***Required Arrow Stockholder Vote***").

3.5 Non-Contravention; Consents. Subject to compliance with the HSR Act and any foreign antitrust Legal Requirement, obtaining the Required Arrow Stockholder Vote and the filing of the First Certificate of Merger and the Second Certificate of Merger, each as required by the DGCL, neither (x) the execution, delivery or performance of this Agreement by Arrow or Merger Subs, nor (y) the consummation of the Merger or any of the other Contemplated Transactions, will directly or indirectly (with or without notice or lapse of time):

(a) contravene, conflict with or result in a violation of (i) any of the provisions of the Organizational Documents of Arrow, OTI, or Merger Subs or (ii) any resolution adopted by the stockholders, the Arrow Board or any committee thereof, or the Merger Subs;

(b) contravene, conflict with or result in a material violation of, or to the Knowledge of Arrow, give any Governmental Body or other Person the right to challenge the Mergers or any of the other Contemplated Transactions or to exercise any remedy or obtain any relief under, any Legal Requirement or any order, writ, injunction, judgment or decree to which Arrow or OTI or any of the assets owned or used by Arrow or OTI, is subject, except as would not be material to Arrow or OTI or its business;

(c) contravene, conflict with or result in a material violation of any of the terms or requirements of, or give any Governmental Body the right to revoke, withdraw, suspend, cancel, terminate or modify, any Governmental Authorization that is held by Arrow, except as would not be material to Arrow or its business;

(d) contravene, conflict with or result in a material violation or breach of, or result in a default under, any provision of any Arrow Material Contract, or, to the Knowledge of Arrow, give any Person the right to: (i) declare a default or exercise any remedy under any Arrow Material Contract; (ii) any material payment, rebate, chargeback, penalty or change in delivery schedule under any such Arrow Material Contract; (iii) accelerate the maturity or performance of any Arrow Material Contract; or (iv) cancel, terminate or modify any term of any Arrow Material Contract, except in the case of any breach, default, penalty or modification, which would not, individually or in the aggregate, have an Arrow Material Adverse Effect; or

(e) result in the imposition or creation of any Encumbrance upon or with respect to any material asset owned or used by Arrow or OTI (except for Permitted Encumbrances).

Except for (i) any Consent set forth on Part 3.5 of the Arrow Disclosure Schedule under any Arrow Contract, (ii) the approval of the Mergers and the issuance of shares of Arrow Common Stock in the Mergers, (iii) the filing of the First Certificate of Merger and the Second Certificate of Merger with the Secretary of State of the State of Delaware pursuant to the DGCL, (iv) any required filings under the HSR Act and any foreign antitrust Legal Requirement , (v) the filing of the Registration Statement with the SEC in accordance with the Exchange Act and (vi) such consents, waivers, approvals, orders, authorizations, registrations, declarations and filings as may be required under applicable federal and state securities laws, Arrow was not and will not be required to make any filing with or give any notice to, or to obtain any Consent from, any Person in connection with (x) the execution, delivery or performance of this Agreement or (y) the consummation of the Mergers or any of the other Contemplated Transactions. The Arrow Board, the Merger Sub 1 Board and the Merger Sub 2 Board have taken and will take all actions necessary to ensure that the restrictions applicable to business combinations contained in Section 203 of the DGCL are, and will be, inapplicable to the execution, delivery and performance of this Agreement and the Arrow Stockholder Support Agreements and to the consummation of the Mergers and the other Contemplated Transactions. No other state takeover statute or similar Legal Requirement applies or purports to apply to the Mergers, this Agreement, the Arrow Stockholder Support Agreements or any of the other Contemplated Transactions.

3.6 Capitalization, Etc.

(a) The authorized capital stock of Arrow consists of (i) 75,000,000 shares of Arrow Common Stock, par value $0.001 per share, of which 30,020,294 shares have been issued and are outstanding as of September 30, 2016 (the "***Capitalization Date***") and (ii) 5,000,000 shares of Preferred Stock, par value $0.001 per share, of which no shares have been issued and are outstanding as of the Capitalization Date. Arrow holds 33,993 shares of its capital stock in its treasury. All of the outstanding shares of Arrow Common Stock have been duly authorized and validly issued, and are fully paid and nonassessable. None of the outstanding shares of Arrow Common Stock is entitled or subject to any preemptive right, right of participation, right of maintenance or any similar right. None of the outstanding shares of Arrow Common Stock is subject to any right of first refusal in favor of Arrow. Except as contemplated herein and except as set forth in Part 3.6(a) of the Arrow Disclosure Schedule, there is no Arrow Contract relating to the voting or registration of, or restricting any Person from purchasing, selling, pledging or otherwise disposing of (or granting any option or similar right with respect to), any shares of Arrow Common Stock. Arrow is not under any obligation, nor is it bound by any Contract pursuant

to which it may become obligated, to repurchase, redeem or otherwise acquire any outstanding shares of Arrow Common Stock or other securities.

(b) Except for the 2010 Performance Incentive Plan, the 2000 Stock Incentive Plan, the 2007 Performance Incentive Plan and the OncoGenex Technologies Inc. Stock Option Plan (collectively, the "***Arrow Stock Plans***"), or except as set forth on Part 3.6(b) of the Arrow Disclosure Schedule, Arrow does not have any stock option plan or any other plan, program, agreement or arrangement providing for any equity-based compensation for any Person.

(c) Except for the outstanding Arrow Options or as set forth in Part 3.6(c) of the Arrow Disclosure Schedule, there is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of Arrow; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of Arrow; (iii) stockholder rights plan (or similar plan commonly referred to as a "poison pill") or Contract under which Arrow is or may become obligated to sell or otherwise issue any shares of its capital stock or any other securities or (iv) condition or circumstance that is reasonably likely to give rise to or provide a basis for the assertion of a claim by any Person to the effect that such Person is entitled to acquire or receive any shares of capital stock or other securities of Arrow. There are no outstanding or authorized stock appreciation, phantom stock, profit participation or other similar rights with respect to Arrow.

(d) All outstanding shares of Arrow Common Stock and options and other securities of Arrow have been issued and granted in material compliance with (i) all applicable securities laws and other applicable Legal Requirements and (ii) all requirements set forth in applicable Contracts.

3.7 SEC Filings; Financial Statements.

(a) Arrow has delivered to the Company accurate and complete copies of all registration statements, proxy statements, Certifications (as defined below) and other statements, reports, schedules, forms and other documents filed by Arrow with the SEC since January 1, 2015 (the "***Arrow SEC Documents***"), other than such documents that can be obtained on the SEC's website at www.sec.gov. Except as set forth on Part 3.7(a) of the Arrow Disclosure Schedule, all statements, reports, exhibits, schedules, forms and other documents, including amendments thereto, required to have been filed by Arrow or its officers with the SEC have been so filed on a timely basis. As of the time it was filed with the SEC (or, if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing), each of the Arrow SEC Documents complied in all material respects with the applicable requirements of the Securities Act or the Exchange Act (as the case may be) and, to Arrow's Knowledge, as of the time they were filed, none of the Arrow SEC Documents contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The certifications and statements required by (i) Rule 13a-14 under the Exchange Act and (ii) 18 U.S.C. §1350 (Section 906 of the Sarbanes-Oxley Act) relating to the Arrow SEC Documents (collectively, the "***Certifications***") are accurate and complete and comply as to form and content with all applicable Legal Requirements. As used in this Section 3.7, the term "file" and variations thereof shall be broadly construed to include any manner in which a document or information is furnished, supplied or otherwise made available to the SEC.

(b) The financial statements (including any related notes and schedules) contained or incorporated by reference in the Arrow SEC Documents: (i) complied as to form in all material respects with the published rules and regulations of the SEC applicable thereto; (ii) were prepared in accordance with GAAP (except as may be indicated in the notes to such financial statements or, in the case of unaudited financial statements, as permitted by Form 10-Q of the SEC, and except that the unaudited financial statements may not contain footnotes and are subject to normal and recurring year-end adjustments that are not reasonably expected to be material in amount) applied on a consistent basis unless otherwise noted therein throughout the periods indicated and (iii) fairly

present, in all material respects, the financial position of Arrow as of the respective dates thereof and the results of operations and cash flows of Arrow for the periods covered thereby. Other than as expressly disclosed in the Arrow SEC Documents filed prior to the date hereof, there has been no material change in Arrow's accounting methods or principles that would be required to be disclosed in Arrow's financial statements in accordance with GAAP. The books of account and other financial records of Arrow and each of its Subsidiaries are true and complete in all material respects.

(c) Arrow has established and maintains, adheres to and enforces a system of internal controls over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) which are designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with GAAP, including policies and procedures that (i) require the maintenance of records that in reasonable detail accurately and fairly reflect the material transactions and dispositions of the assets of Arrow and its Subsidiaries, (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of Arrow and its Subsidiaries are being made only in accordance with appropriate authorizations of management and the Arrow Board of Directors and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the assets of Arrow and its Subsidiaries.

(d) Neither Arrow nor any of its Subsidiaries is a party to, nor does it have any commitment to become a party to, any off-balance sheet joint-venture, off-balance sheet partnership or any other "off-balance sheet arrangements" (as defined in Item 303(a) of Regulation S-K).

(e) Arrow's auditor has at all times since the date of enactment of the Sarbanes-Oxley Act been: (i) a registered public accounting firm (as defined in Section 2(a)(12) of the Sarbanes-Oxley Act); (ii) to the knowledge of Arrow, "independent" with respect to Arrow within the meaning of Regulation S-X under the Exchange Act and (iii) to the knowledge of Arrow, in compliance with subsections (g) through (l) of Section 10A of the Exchange Act and the rules and regulations promulgated by the SEC and the Public Company Accounting Oversight Board thereunder.

(f) Arrow has not received any comment letter from the SEC or the staff thereof or any correspondence from NASDAQ or the staff thereof relating to the delisting or maintenance of listing of the Arrow Common Stock on NASDAQ. Arrow has not received any unresolved comments in the Arrow SEC Documents.

(g) Since January 1, 2013, there have been no formal internal investigations regarding financial reporting or accounting policies and practices discussed with, reviewed by or initiated at the direction of the chief executive officer, chief financial officer, or general counsel of Arrow, the Arrow Board or any committee thereof, other than ordinary course audits or reviews of accounting policies and practices or internal controls required by the Sarbanes-Oxley Act.

(h) Arrow is in compliance and has been in compliance in all material respects with the applicable provisions of the Sarbanes-Oxley Act and the applicable listing and governance rules and regulations of NASDAQ.

3.8 Absence of Changes. Except as set forth on Part 3.8 of the Arrow Disclosure Schedule, between September 30, 2016 and the date of this Agreement:

(a) there has not been any Arrow Material Adverse Effect or an event or development that would, individually or in the aggregate, reasonably be expected to have an Arrow Material Adverse Effect;

(b) there has not been any material loss, damage or destruction to, or any material interruption in the use of, any of the assets or business of Arrow or OTI (whether or not covered by insurance);

(c) Arrow has not: (i) declared, accrued, set aside or paid any dividend or made any other distribution in respect of any shares of capital stock or (ii) repurchased, redeemed or otherwise reacquired any shares of capital stock or other securities except for the repurchase or reacquisition of shares pursuant to Arrow's rights arising upon an individual's termination as an employee, director or consultant;

(d) neither Arrow nor OTI has sold, issued or granted, or authorized the issuance of: (i) any capital stock or other security (except for Arrow Common Stock issued upon the valid exercise of outstanding Arrow Options); (ii) any option, warrant or right to acquire any capital stock or any other security (except for Arrow Options identified in Part 3.6(b) of the Arrow Disclosure Schedule) or (iii) any instrument convertible into or exchangeable for any capital stock or other security;

(e) neither Arrow nor OTI has changed any of its accounting methods, principles or practices;

(f) there has been no amendment to any of the Organizational Documents of Arrow or OTI, and neither Arrow nor OTI has effected or been a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction;

(g) Arrow has not amended or waived any of its rights under, or exercised its discretion to permit the acceleration of vesting under any provision of: (i) any of the Arrow Stock Plans; (ii) any Arrow Option or any Contract evidencing or relating to any Arrow Option; (iii) any restricted stock purchase agreement or (iv) any other Contract evidencing or relating to any equity award (whether payable in cash or stock);

(h) neither Arrow nor OTI has formed any Subsidiary other than Merger Subs or acquired any equity interest or other interest in any other Entity;

(i) neither Arrow nor OTI has: (i) lent money to any Person; (ii) incurred or guaranteed any indebtedness for borrowed money; (iii) issued or sold any debt securities or options, warrants, calls or other rights to acquire any debt securities; (iv) guaranteed any debt securities of others; or (v) made any capital expenditure or commitment in excess of $50,000;

(j) Arrow has not, other than in the Ordinary Course of Business: (i) adopted, established or entered into any Arrow Employee Plan; (ii) caused or permitted any Arrow Employee Plan to be amended other than as required by law or (iii) paid any bonus or made any profit-sharing or similar payment to, or increased the amount of the wages, salary, commissions, fringe benefits or other compensation or remuneration payable to, any of its employees, directors or consultants;

(k) in each case for purposes of this clause (k), other than as required by law, none of the Buyer Parties have made, changed or revoked any material Tax election, filed any material amendment to any Tax Return, adopted or changed any accounting method in respect of Taxes, changed any annual Tax accounting period, entered into any Tax allocation agreement, Tax sharing agreement or Tax indemnity agreement, other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers or landlords, entered into any closing agreement with respect to any Tax, settled or compromised any claim, notice, audit report or assessment in respect of material Taxes, applied for or entered into any ruling from any Tax authority with respect to Taxes, surrendered any right to claim a material Tax refund, or consented to any extension or waiver of the statute of limitations period applicable to any material Tax claim or assessment;

(l) neither Arrow nor OTI has commenced or settled any Legal Proceeding;

(m) neither Arrow nor OTI has acquired any material assets nor sold, leased or otherwise irrevocably disposed of any of its material assets or properties, nor has any Encumbrance been granted with respect to such assets or properties, except in the Ordinary Course of Business consistent with past practices;

(n) there has been no entry into, amendment or termination of any Arrow Material Contract;

(o) there has been no (i) material change in pricing or royalties or other payments set or charged by Arrow or OTI to its customers or licensees, (ii) agreement by Arrow or OTI to change pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to Arrow or OTI, or (iii) material change in pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to Arrow or OTI; and

(p) neither Arrow nor OTI has negotiated, agreed or committed to take any of the actions referred to in clauses"(c)" through "(o)" above (other than negotiations between the Parties to enter into this Agreement).

3.9 Absence of Undisclosed Liabilities. As of the date hereof, neither Arrow nor any of its Subsidiaries has any liability, indebtedness, obligation, expense, claim, deficiency, guaranty or endorsement of any kind, whether accrued, absolute, contingent, matured, unmatured or other (whether or not required to be reflected in the financial statements in accordance with GAAP) (each a "***Liability***"), individually or in the aggregate, except for: (a) Liabilities reflected on the face of the Arrow Unaudited Interim Balance Sheet; (b) normal and recurring current Liabilities that have been incurred by Arrow or its Subsidiaries since the date of the Arrow Unaudited Interim Balance Sheet in the Ordinary Course of Business and which are not in excess of $50,000 in the aggregate; (c) Liabilities for performance of obligations of Arrow or any of its Subsidiaries under Arrow Contracts; (d) Liabilities incurred in connection with this Agreement; (e) Liabilities incurred in connection with the winding down of the business of Arrow and (e) Liabilities listed in Part 3.9 of the Arrow Disclosure Schedule.

3.10 Title to Assets. Arrow and OTI own, and have good and valid title to, or, in the case of leased properties and assets, valid leasehold interests in, all tangible properties or assets and equipment used or held for use in their business or operations or purported to be owned by them, including: (a) all assets reflected on the Arrow Unaudited Interim Balance Sheet and (b) all other assets reflected in the books and records of Arrow and OTI as being owned by Arrow or OTI, as applicable. All of said assets are owned by Arrow or OTI free and clear of any Encumbrances, except for any Permitted Encumbrances.

3.11 Real Property; Leasehold. Neither Arrow nor OTI own and have never owned any real property. Arrow has made available to the Company (a) an accurate and complete list of all real properties with respect to which Arrow and OTI directly or indirectly holds a valid leasehold interest as well as any other real estate that is in the possession of or leased by Arrow and OTI and (b) copies of all leases under which any such real property is possessed (the "***Arrow Real Estate Leases***"). Part 3.11 of the Arrow Disclosure Schedule sets forth a complete and accurate list of all Arrow Real Estate Leases. Neither Arrow nor OTI is in default under any of the Arrow Real Estate Leases, except where such defaults have not had and would not be reasonably expected to have, individually or in the aggregate, an Arrow Material Adverse Effect, and to the Knowledge of Arrow, there is no default by any of the lessors thereunder.

3.12 Intellectual Property.

(a) Arrow, directly or through any of its Subsidiaries, owns, or has the right to use, and has the right to bring actions for the infringement of, all Arrow IP Rights, except for any failure to own or has the right to use, or has the right to bring actions for, that would not reasonably be expected to have an Arrow Material Adverse Effect.

(b) Part 3.12(b) of the Arrow Disclosure Schedule is a true and complete listing of all Arrow Registered IP, setting forth in each case, as applicable, the jurisdictions in which such Arrow Registered IP has been issued and applications that have been filed, along with the respective application, registration or filing number or subsequent registration activity thereof. Arrow and its Subsidiaries solely own all right, title and interest in and to, or have the valid and enforceable right to use, each item of Arrow Registered IP free and clear of any Encumbrances, except for Permitted Encumbrances.

(c) Part 3.12(c) of the Arrow Disclosure Schedule identifies all Arrow IP Rights Agreements currently in force and material to the business of Arrow as currently conducted, pursuant to which Arrow IP Rights are licensed to Arrow or any of its Subsidiaries (other than (I) any non-customized software that (A) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (B) is not incorporated into, or material to the development, manufacturing, or distribution of, any of the Company's or any of its Subsidiaries' products or services, (II) any generally available (i.e., "off the shelf") third party licenses of Intellectual Property, and (III) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials).

(d) Part 3.12(d)(i) of the Arrow Disclosure Schedule identifies all Arrow IP Rights Agreements currently in force and material to the business of Arrow as currently conducted, pursuant to which any Person has been granted any license under, or otherwise has received or acquired any right (whether or not currently exercisable) or interest in, any material Arrow IP Rights. Except as identified in Part 3.12(d)(ii) of the Arrow Disclosure Schedule, Arrow is not bound by, and no Arrow IP Rights are subject to, any Arrow IP Rights Agreement containing any covenant or other provision that limits or restricts the ability of Arrow or any of its Subsidiaries to use, exploit, assert, or enforce any Arrow IP Rights anywhere in the world in each case as would materially limit the business of the Arrow as currently conducted or planned to be conducted.

(e) Except as identified in Part 3.12(f) of the Arrow Disclosure Schedule, to the Knowledge of Arrow and its Subsidiaries, Arrow or one of its Subsidiaries exclusively owns all right, title, and interest to and in any material Arrow IP Rights (other than Arrow IP Rights (i) exclusively or non-exclusively licensed to Arrow or one of its Subsidiaries, as identified in Part 3.12(c) of the Arrow Disclosure Schedule and (ii) (I) any non-customized software that (A) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (B) is not incorporated into, or material to the development, manufacturing, or distribution of, any of Arrow's or any of its Subsidiaries' products or services, (II) any generally available (i.e., "off the shelf") third party licenses of Intellectual Property, and (III) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials) free and clear of any Encumbrances (other than Permitted Encumbrances). Without limiting the generality of the foregoing:

(i) Each Person who is or was an employee or contractor of Arrow or any of its Subsidiaries and who is or was involved in the creation or development of any material Arrow IP Rights has signed a valid, enforceable agreement containing an assignment of such Intellectual Property to Arrow or such Subsidiary and confidentiality provisions protecting trade secrets and confidential information of Arrow and its Subsidiaries. To the Knowledge of Arrow and its Subsidiaries, no current or former stockholder, officer, director, or employee of Arrow or any of its Subsidiaries has any claim, right (whether or not currently exercisable), or interest to or in any material Arrow IP Rights. To the Knowledge of Arrow and its Subsidiaries, no employee of Arrow or any of its Subsidiaries is (a) bound by or otherwise subject to any Contract restricting him or her from performing his or her duties for Arrow or such Subsidiary or (b) in breach of any Contract with any former employer or other Person concerning material Arrow IP Rights or confidentiality provisions protecting trade secrets and confidential information comprising material Arrow IP Rights.

(ii) No funding, facilities, or personnel of any Governmental Body were used to develop or create, in whole or in part, any material Arrow IP Rights in which Arrow or any of its Subsidiaries has an ownership interest.

(iii) Arrow and each of its Subsidiaries has taken reasonable steps to maintain the confidentiality of and otherwise protect and enforce its rights in all proprietary information that Arrow or such Subsidiary holds, or purports to hold, as a Trade Secret.

(iv) To the Knowledge of Arrow and its Subsidiaries, the Arrow IP Rights constitute all Intellectual Property material to and necessary for Arrow and its Subsidiaries to conduct its business as currently conducted.

(f) Arrow has delivered, or made available to the Company, a complete and accurate copy of all Arrow IP Rights Agreements currently in force and material to the business of Arrow as currently conducted. Neither Arrow nor its Subsidiaries is a party to any Contract (A) pursuant to which the execution, delivery and performance of this Agreement and the consummation of the Contemplated Transactions will constitute a material breach, or (B) as a result of such execution, delivery and performance of this Agreement and the consummation of the Contemplated Transactions will (i) cause the forfeiture or termination of or Encumbrance upon, or the grant of any license or other right to, or give rise to a right of forfeiture or termination of or Encumbrance upon, any Arrow IP Rights, or (ii) impair the right of Arrow, any of its Subsidiaries, or the Surviving Corporation to use, sell, or license any Arrow IP Rights or portion thereof, except for the occurrence of any such breach, forfeiture, termination, Encumbrance, grant or impairment that would not, individually or in the aggregate, be reasonably expected to result in an Arrow Material Adverse Effect. With respect to each of the Arrow IP Rights Agreements: (i) each such agreement is valid and binding on Arrow or its Subsidiaries, as applicable, and in full force and effect; (ii) Arrow has not received any written notice of termination or cancellation under such agreement, or received any written notice of breach or default under such agreement, which breach has not been cured or waived; and (iii) neither Arrow nor its Subsidiaries, and to the Knowledge of Arrow, no other party to any such agreement, is in breach or default thereof in any material respect.

(g) Except as set forth on Part 3.12(g) of the Arrow Disclosure Schedule, Arrow and its Subsidiaries have no material Liability for violation of any license or agreement between Arrow or its Subsidiaries and any third party or, to the Knowledge of Arrow, for infringement or misappropriation of any valid Intellectual Property right of any other party, which violation, infringement or misappropriation would reasonably be expected to have an Arrow Material Adverse Effect. To the Knowledge of Arrow, (i) no third party is infringing upon, or violating any license or agreement with Arrow or its Subsidiaries or relating to any material Arrow IP Rights and (ii) there is no current or pending challenge, claim or Legal Proceeding (including, but not limited to, opposition, interference or other proceeding in any patent or other government office) contesting the validity, ownership or right to use, sell, license or dispose of any material Arrow IP Rights, nor has Arrow or its Subsidiaries received any written notice asserting that any material Arrow IP Rights or the proposed use, sale, license or disposition thereof conflicts with or infringes or misappropriates or will conflict with or infringe or misappropriate the rights of any other Person.

(h) Each item of Arrow Registered IP is and at all times has been filed and maintained in compliance with all applicable Legal Requirements and all filings, payments, and other actions required to be made or taken to maintain such item of Arrow Registered IP in full force and effect have been made by the applicable deadline.

(i) None of the goodwill associated with or inherent in any Trademark (whether registered or unregistered) in which Arrow or its Subsidiaries has or purports to have an ownership interest has been impaired as determined by Arrow or any of its Subsidiaries in accordance with GAAP.

(j) Except as may be set forth in Part 3.12(j) of the Arrow Disclosure Schedule (i) neither Arrow nor its Subsidiaries is bound by any Contract (except for clinical trial agreements, material transfer agreements, confidentiality agreements and agreements related to clinical studies that are not material to the business of Arrow as currently conducted) to indemnify, defend, hold harmless, or reimburse any other Person with respect to any Intellectual Property infringement, misappropriation, or similar claim, and (ii) neither Arrow nor its Subsidiaries has ever assumed, or agreed to discharge or otherwise take responsibility for, any existing or potential liability of another Person for infringement, misappropriation, or violation of any Intellectual Property right, which assumption, agreement or responsibility remains in force as of the date of this Agreement.

(k) Arrow and its Subsidiaries are, and have at all times since January 1, 2014 been, in material compliance with all Legal Requirements applicable to Arrow or its Subsidiaries regarding the protection, storage, use and disclosure of Personal Data collected by Arrow or its Subsidiaries.

3.13 Agreements, Contracts and Commitments. Part 3.13 of the Arrow Disclosure Schedule identifies each Arrow Contract to which Arrow is a party and to which Arrow has any currently effective binding obligations or by which any of its assets are currently bound:

(a) relating to any agreement of indemnification or guaranty not entered into in the Ordinary Course of Business other than indemnification agreements between Arrow and any of its officers or directors;

(b) containing any covenant limiting the freedom of Arrow or its Subsidiaries to engage in any line of business or compete with any Person;

(c) relating to capital expenditures and involving obligations after the date of this Agreement in excess of $50,000 and not cancelable without penalty;

(d) relating to the disposition or acquisition of material assets or any ownership interest in any Entity;

(e) relating to any mortgages, indentures, loans, notes or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit in excess of $50,000 or creating any material Encumbrances with respect to any assets of Arrow or any of its Subsidiaries or any loans or debt obligations with officers or directors of Arrow;

(f) relating to (i) any distribution agreement currently in force (identifying any that contain exclusivity provisions); (ii) any agreement currently in force for the conduct of research, pre-clinical or clinical studies regarding the products under development by Arrow or its Subsidiaries; (iii) any dealer, distributor, joint marketing, alliance, joint venture, cooperation, development or other agreement currently in force under which Arrow or its Subsidiaries has continuing obligations to develop, market, or supply any product, technology or service, or any agreement pursuant to which Arrow or its Subsidiaries has continuing obligations to develop any Intellectual Property that will not be owned, in whole or in part, by Arrow or such Subsidiary; or (iv) any Contract currently in force to license any third party to manufacture or produce any Arrow product, service or technology or any Contract currently in force to sell, distribute or commercialize any Arrow products or service except agreements with distributors or sales representatives in the Ordinary Course of Business; in each case of (i) – (iv) above whereby such Contract is material to the business or operations of Arrow and its Subsidiaries as currently conducted and involves payment or receipt by Arrow or its Subsidiaries under such Contract of $50,000 or more in the aggregate or obligations after the date of this Agreement in excess of $50,000 in the aggregate;

(g) with any Person, including any financial advisor, broker, finder, investment banker or other Person, providing advisory services to Arrow in connection with the Contemplated Transactions;

(h) with any manufacturer, vendor, or other Person for the supply of materials or performance of services by such third party to Arrow in relation to the manufacture of Arrow's products, whereby such Contract is material to the business or operations of Arrow and its Subsidiaries as currently conducted and involves payment or receipt by Arrow or its Subsidiaries under such Contract of $50,000 or more in the aggregate or obligations after the date of this Agreement in excess of $50,000 in the aggregate; or

(i) is a Contract pertaining to the Intellectual Property of Arrow or its Subsidiaries whereby such Contract is material to the business or operations of Arrow and its Subsidiaries as currently conducted and involves payment or receipt by Arrow or its Subsidiaries under such Contract of $50,000 or more in the aggregate or obligations after the date of this Agreement in excess of $50,000 in the aggregate.

Arrow has made available to the Company accurate and complete copies of all Contracts to which Arrow or its Subsidiaries is a party or by which it is bound of the type described in clauses (a) through (i) above (any such Contract, an "***Arrow Material Contract***"), including all amendments thereto. There are no Arrow Material Contracts that are not in written form. Except as set forth on Part 3.13 of the Arrow Disclosure

Schedule, neither Arrow nor any of its Subsidiaries has, nor to Arrow's Knowledge, as of the date of this Agreement has any other party to an Arrow Material Contract, breached, violated or defaulted under, or received notice that it has breached, violated or defaulted under any Arrow Material Contract in such manner as would permit any other party to cancel or terminate any such Arrow Material Contract, or would permit any other party to seek damages. As to Arrow and its Subsidiaries, as of the date of this Agreement, each Arrow Material Contract is valid, binding, enforceable and in full force and effect, subject to the Enforceability Exceptions. To the Knowledge of Arrow, no Person is renegotiating any material amount paid or payable to Arrow under any Arrow Material Contract or any other material term or provision of any Arrow Material Contract other than in the Ordinary Course of Business.

3.14 Compliance; Permits; Restrictions.

(a) Arrow and OTI are, and since January 1, 2013 have been in compliance in all material respects with all material Legal Requirements. No investigation, claim, suit, proceeding, audit or other action by any Governmental Body or Governmental Authority is pending or, to the Knowledge of Arrow, threatened against Arrow or OTI, nor has any Governmental Body or Governmental Authority indicated to Arrow or OTI in writing an intention to conduct the same. There is no agreement, judgment, injunction, order or decree binding upon Arrow or OTI which (i) has or would reasonably be expected to have the effect of prohibiting or materially impairing any business practice of Arrow or OTI, any acquisition of material property by Arrow or OTI or the conduct of business by Arrow and any Subsidiary as currently conducted, (ii) would reasonably be expected to have an adverse effect on Arrow's ability to comply with or perform any covenant or obligation under this Agreement, or (iii) would reasonably be expected to have the effect of preventing, materially delaying, making illegal or otherwise interfering with the Mergers or any of the Contemplated Transactions.

(b) Each of Arrow, OTI, and Merger Subs holds all Governmental Authorizations which are material to the operation of their businesses (collectively, the "***Arrow Permits***") as currently conducted. Part 3.14(b) of the Arrow Disclosure Schedule identifies each Arrow Permit. Each of Arrow, OTI, and Merger Subs is in material compliance with the terms of the Arrow Permits. No action, proceeding, revocation proceeding, amendment procedure, writ, injunction or claim is pending or, to the Knowledge of Arrow, threatened, which seeks to revoke, limit, suspend, or materially modify any Arrow Permit.

(c) There are no proceedings pending or, to the Knowledge of Arrow, threatened with respect to an alleged material violation by Arrow or OTI of the FDCA, FDA regulations adopted thereunder, or any other similar Legal Requirements promulgated by a Drug Regulatory Agency.

(d) Each of Arrow, OTI, and Merger Subs holds all required Governmental Authorizations issuable by any Drug Regulatory Agency necessary for the conduct of the business of Arrow, OTI, and Merger Subs as currently conducted, and, as applicable, development, clinical testing, manufacturing, marketing, distribution and importation or exportation, as currently conducted, of any of its products or product candidates (the "***Arrow Product Candidates***") (the "***Arrow Regulatory Permits***") and no such Arrow Regulatory Permit has been (i) revoked, withdrawn, suspended, cancelled or terminated or (ii) modified in any materially adverse manner. Neither Arrow nor its Subsidiaries has received any written notice or other written communication from any Drug Regulatory Agency regarding any revocation, withdrawal, suspension, cancellation, termination or material modification of any Arrow Regulatory Permit. Except for the information and files identified in Part 3.14(d) of the Arrow Disclosure Schedule, Arrow and OTI have made available to the Company all information in its or its Subsidiaries' possession or control relating to the Arrow Product Candidates and the development, clinical testing, manufacturing, importation and exportation of the Arrow Product Candidates, including complete copies of the following (to the extent there are any): (x) adverse event reports; clinical study reports and material study data; and inspection reports, notices of adverse findings, warning letters, filings and letters and other written correspondence to and from any Drug Regulatory Agency; and meeting minutes with any Drug Regulatory Agency; and (y) similar reports, material study data, notices, letters, filings, correspondence and meeting minutes with any other Governmental Authority.

(e) All clinical, pre-clinical and other studies and tests conducted by or on behalf of, or sponsored by, Arrow or OTI or in which Arrow, OTI, or their respective products or product candidates, have participated were conducted in all material respects in accordance with standard medical and scientific research procedures and in compliance with the applicable regulations of the Drug Regulatory Agencies and other applicable Legal Requirements, including 21 C.F.R. Parts 50, 54, 56, 58 and 312.

(f) Neither Arrow nor OTI is the subject of any pending, or to the Knowledge of Arrow, threatened investigation in respect of its business or products by the FDA pursuant to its "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto. To the Knowledge of Arrow, neither Arrow nor OTI has committed any acts, made any statement, or failed to make any statement, in each case in respect of its business or products that would violate FDA's "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy, and any amendments thereto. None of Arrow, any of its Subsidiaries, or any of their respective officers, employees or agents has been convicted of any crime or engaged in any conduct that could result in a material debarment or exclusion under (i) 21 U.S.C. Section 335a or (ii) any similar applicable Legal Requirement. To the Knowledge of Arrow, no material debarment or exclusionary claims, actions, proceedings or investigations in respect of their business or products are pending or threatened against Arrow, OTI, or any of their respective officers, employees or agents.

(g) Other than in connection with the winding down of its operations, Arrow has filed with the FDA, EMA, any other Governmental Body, and any institutional review board or comparable body, all required notices, supplemental applications, and annual or other reports, including adverse experience reports, with respect to each investigational new drug application or any comparable foreign regulatory application, related to the manufacture, testing, study, or sale of any of its products or product candidates, as applicable.

3.15 Legal Proceedings; Orders.

(a) Except as set forth in Part 3.15 of the Arrow Disclosure Schedule, there is no pending Legal Proceeding, and, to the Knowledge of Arrow, no Person has threatened in writing to commence any Legal Proceeding: (i) that involves Arrow, OTI, or any Arrow Associate (in his or her capacity as such) or any of the material assets owned by Arrow or OTI; or (ii) that challenges, or that may have the effect of preventing, delaying, making illegal or otherwise interfering with, the Mergers or any of the other Contemplated Transactions. With regard to any Legal Proceeding set forth on Part 3.15 of the Arrow Disclosure Schedule, Arrow has made available to the Company or its counsel all pleadings and material written correspondence related to such Legal Proceeding (if any) and all insurance policies and material written correspondence with brokers and insurers related to such Legal Proceedings (if any). Arrow has materially complied with the requirements of its insurance policy or policies to obtain coverage with respect to such Legal Proceeding under such insurance policy or policies.

(b) There is no order, writ, injunction, judgment or decree to which Arrow, OTI, or any of the material assets owned or used by Arrow or OTI is subject. To the Knowledge of Arrow, no officer or other Key Employee of Arrow or OTI is subject to any order, writ, injunction, judgment or decree that prohibits such officer or other employee from engaging in or continuing any conduct, activity or practice relating to the business of Arrow or OTI or to any material assets owned or used by Arrow or OTI.

3.16 Tax Matters.

(a) Each of the Buyer Parties have timely filed all federal income Tax Returns and other material Tax Returns that they were required to file under applicable Legal Requirements. All such Tax Returns were true, correct and complete in all material respects and have been prepared in material compliance with all applicable Legal Requirements. None of the Buyer Parties are currently the beneficiary of any extension of time within which to file any Tax Return. No claim has ever been made by an authority in a jurisdiction where the Buyer Parties do not file Tax Returns that any of the Buyer Parties are subject to taxation by that jurisdiction.

(b) All material Taxes due and owing by the Buyer Parties have on or before the date hereof (whether or not shown on any Tax Return) have been paid. The unpaid Taxes of the Buyer Parties have been reserved for on the Arrow Unaudited Interim Balance Sheet in accordance with GAAP. Since the date of the Arrow Unaudited Interim Balance Sheet, none of the Buyer Parties have incurred any material Liability for Taxes outside the Ordinary Course of Business or otherwise inconsistent with past custom and practice.

(c) Each of the Buyer Parties have withheld and paid all material Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, stockholder, or other third party.

(d) There are no Encumbrances for a material amount of Taxes (other than Taxes not yet due and payable or Taxes that are being contested in good faith and for which adequate reserves have been made in accordance with GAAP on Arrow's Unaudited Interim Balance Sheet) upon any of the assets of the Buyer Parties.

(e) No deficiencies for a material amount of Taxes with respect to any of the Buyer Parties have been claimed, proposed or assessed by any Governmental Body in writing. There are no pending (or, based on written notice, threatened) audits, assessments or other actions for or relating to any liability in respect of a material amount of Taxes of the Buyer Parties. No issues relating to Taxes of the Buyer Parties were raised by the relevant Tax authority in any completed audit or examination that would reasonably be expected to result in a material amount of Taxes in a later taxable period. Arrow has delivered or made available to the Company complete and accurate copies of all federal income Tax and all other material Tax Returns of the Buyer Parties (and their predecessors) for all taxable years remaining open under the applicable statute of limitations, and complete and accurate copies of all examination reports and statements of deficiencies assessed against or agreed to by the Buyer Parties (and their Subsidiaries and predecessors), with respect to federal income Tax and all other material Taxes. None of the Buyer Parties (or any of their Subsidiaries or predecessors) have waived any statute of limitations in respect of Taxes or agreed to any extension of time with respect to a material Tax assessment or deficiency, nor has any request been made in writing for any such extension or waiver.

(f) All material elections with respect to Taxes affecting the Buyer Parties as of the date hereof, to the extent such elections are not shown on or in the Tax Returns that have been delivered or made available to the Company, are set forth on Part 3.16(f) of the Arrow Disclosure Schedule. None of the Buyer Parties have agreed, or is required, to make any adjustment under Section 481(a) of the Code by reason of a change in accounting method or otherwise or have elected at any time to be treated as an S corporation within the meaning of Sections 1361 or 1362 of the Code.

(g) None of the Buyer Parties are a party to any Tax allocation, Tax sharing or similar agreement (including indemnity arrangements), other than commercial contracts entered into in the Ordinary Course of Business.

(h) None of the Buyer Parties have ever been a member of an affiliated group filing a consolidated, combined or unitary Tax Return (other than a group the common parent of which is Arrow) for federal, state, local or foreign Tax purposes. None of the Buyer Parties have any Liability for the Taxes of any Person (other than the Buyer Parties) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or foreign law), as a transferee or successor, by Contract, or otherwise.

(i) To the Knowledge of Arrow, after reasonable inquiry, none of the Buyer Parties owns any interest in any controlled foreign corporation (as defined in Section 957 of the Code), passive foreign investment company (as defined in Section 1297 of the Code), or other entity the income of which is required to be included in the income of any of the Buyer Parties.

(j) None of the Buyer Parties have distributed stock of another Person, or has had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Section 355 of the Code or Section 361 of the Code.

(k) None of the Buyer Parties is a partner for Tax purposes with respect to any joint venture, partnership, or, to the Knowledge of the Buyer Parties, other arrangement or contract which is treated as a partnership for Tax purposes who receives or has previously received a Schedule K-1 or a comparable form under foreign law.

(l) None of the Buyer Parties will be required to include any item of income in, or exclude any item of deduction from, taxable income for any period (or any portion thereof) ending after the Closing as a result of any (i) installment sale or other open transaction disposition made on or prior to the Closing Date, (ii) agreement with any Tax authority (including any closing agreement described in Section 7121 of the Code or any similar provision of state, local or foreign law) made or entered into on or prior to the Closing Date, (iii) a change in method of accounting occurring prior to the Closing Date, (iv) a prepaid amount received, or paid, prior to the Closing Date or (v) deferred gains arising prior to the Closing Date.

(m) None of the Buyer Parties have entered into any transaction identified as a "listed transaction" for purposes of Treasury Regulations Sections 1.6011-4(b)(2) or 301.6111-2(b)(2).

(n) Except as set forth in Part 3.16(n) of the Arrow Disclosure Schedule, none of the Buyer Parties has reported having a permanent establishment in any country other than the United States, as defined in any applicable Tax treaty between the United States and such other country.

(o) None of the Buyer Parties have taken any action, nor has any knowledge of any fact or circumstance, that could reasonably be expected to prevent the transactions contemplated hereby, including the Mergers, from qualifying for the Intended Tax Treatment.

(p) Merger Sub 1 and Merger Sub 2 are newly formed corporations with no material assets or liabilities and were created for purposes of facilitating the acquisition of the Company.

3.17 Employee and Labor Matters; Benefit Plans.

(a) The employment of each of Arrow's and any of its Subsidiaries' employees is terminable by Arrow or the applicable Subsidiary at will (or otherwise in accordance with general principles of wrongful termination law) (except for employees of Arrow located in a jurisdiction that does not recognize the "at will" employment concept). Arrow has made available to the Company accurate and complete copies of all employee manuals and handbooks, disclosure materials, policy statements and other materials relating to the employment of Arrow Associates to the extent currently effective and material.

(b) To the Knowledge of Arrow, no officer or Key Employee of Arrow or any of its Subsidiaries intends to terminate his or her employment with Arrow or the applicable Subsidiary, nor, to the Knowledge of Arrow, has any such officer or Key Employee threatened or expressed in writing any intention to do so.

(c) Neither Arrow nor any of its Subsidiaries is a party to, bound by, nor has a duty to bargain under, any collective bargaining agreement or other Contract with a labor organization representing any of its employees, and there are no labor organizations representing, purporting to represent or, to the Knowledge of Arrow, seeking to represent any employees of Arrow or any of its Subsidiaries.

(d) There has never been, nor has there been any threat of, any strike, slowdown, work stoppage, lockout, job action, union, organizing activity, question concerning representation or any similar union activity or dispute, affecting Arrow or any of its Subsidiaries.

(e) To the Knowledge of Arrow, neither Arrow nor any of its Subsidiaries is or has been engaged in any unfair labor practice within the meaning of the National Labor Relations Act. There is no Legal Proceeding, claim, labor dispute or grievance pending or, to the Knowledge of Arrow, threatened or reasonably anticipated

relating to any employment contract, privacy right, labor dispute, wages and hours, leave of absence, plant closing notification, workers' compensation policy, long-term disability policy, harassment, retaliation, immigration, employment statute or regulation, safety or discrimination matter involving any Arrow Associate, including charges of unfair labor practices or discrimination complaints. Part 3.17(e) of the Arrow Disclosure Schedule lists all material written and all non-written employee benefit plans (as defined in Section 3(3) of ERISA, whether or not subject to ERISA) and all material bonus, equity-based, incentive, deferred compensation, retirement or supplemental retirement, profit sharing, severance, golden parachute, vacation, cafeteria, dependent care, medical care, employee assistance program, education or tuition assistance programs and other similar fringe or employee benefit plans, programs or arrangements, including any employment or executive compensation or severance agreements, written or otherwise, which are currently in effect relating to any present or former employee or director of Arrow or any of its Subsidiaries (or any trade or business (whether or not incorporated) which is an Arrow Affiliate) or which is maintained by, administered or contributed to by, or required to be contributed to by, the Company, any of its Subsidiaries or any Arrow Affiliate, or under which Arrow or any of its Subsidiaries or any Arrow Affiliate has any current or may incur liability after the date hereof (each, an "***Arrow Employee Plan***").

(f) Each Arrow Employee Plan that is intended to be qualified under Section 401(a) of the Code has received a favorable determination with respect to such qualified status from the Internal Revenue Service. Nothing has occurred that would reasonably be expected to adversely affect the qualified status of any such Arrow Employee Plan or the exempt status of any related trust.

(g) Each Arrow Employee Plan has been maintained in compliance in all material respects with its terms and, both as to form and operation, with all applicable Legal Requirements, including the Code and ERISA.

(h) Neither Arrow nor any of its Subsidiaries has engaged in any transaction in violation of Sections 404 or 406 of ERISA or any "prohibited transaction," as defined in Section 4975(c)(1) of the Code, for which no exemption exists under Section 408 of ERISA or Section 4975(c)(2) or (d) of the Code, or has otherwise violated the provisions of Part 4 of Title I, Subtitle B of ERISA. Neither Arrow nor any of its Subsidiaries has knowingly participated in a violation of Part 4 of Title I, Subtitle B of ERISA by any plan fiduciary of any Arrow Employee Plan subject to ERISA and neither Arrow nor any of its Subsidiaries has been assessed any civil penalty under Section 502(l) of ERISA. Neither Arrow nor any of its Subsidiaries, or to the Knowledge of Arrow, any of its agents or any fiduciary other than Arrow has been in material breach of any contractual or fiduciary obligation with respect to the administration of the Arrow Employee Plans or trusts or other funding media related thereto.

(i) No Arrow Employee Plan is subject to Title IV or Section 302 of ERISA or Section 412 of the Code, and neither Arrow nor any of its Subsidiaries or Arrow Affiliate has ever maintained, contributed to or partially or completely withdrawn from, or incurred any obligation or liability with respect to, any such plan. No Arrow Employee Plan is a Multiemployer Plan, and neither Arrow nor any of its Subsidiaries or Arrow Affiliate has ever contributed to or had an obligation to contribute, or incurred any liability in respect of a contribution, to any Multiemployer Plan. No Arrow Employee Plan is a Multiple Employer Plan.

(j) No Arrow Employee Plan (other than Arrow's obligations to reimburse or pay COBRA premiums or state equivalent benefits to current or former employees pursuant to an Arrow Employee Plan) provides for medical or death benefits beyond termination of service or retirement, other than (i) pursuant to COBRA or an analogous state law requirement or (ii) death or retirement benefits under an Arrow Employee Plan qualified under Section 401(a) of the Code.

(k) Arrow and each of its Subsidiaries has complied, in all material respects, with all state and federal laws applicable to employees, including but not limited to COBRA, FMLA, CFRA, HIPAA, the Women's Health and Cancer Rights Act of 1998, the Newborn's and Mothers' Health Protection Act of 1996, and any similar provisions of state law applicable to its employees. To the extent required under HIPAA and the

regulations issued thereunder, Arrow and each of its Subsidiaries has, prior to the Closing Date, performed all material obligations under the medical privacy rules of HIPAA (45 C.F.R. Parts 160 and 164), the electronic data interchange requirements of HIPAA (45 C.F.R. Parts 160 and 162), and the security requirements of HIPAA (45 C.F.R. Part 142). Neither Arrow nor any of its Subsidiaries has any unsatisfied obligations to any employees or qualified beneficiaries pursuant to COBRA, HIPAA or any state law governing health care coverage or extension.

(l) Arrow and each of its Subsidiaries is in material compliance with all applicable foreign, federal, state and local laws, rules and regulations respecting employment, employment practices, terms and conditions of employment, worker classification, tax withholding, prohibited discrimination, equal employment, fair employment practices, meal and rest periods, immigration status, employee safety and health, wages (including overtime wages), compensation, and hours of work, and in each case, with respect to employees: (i) has, in all material respects, withheld and reported all amounts required by law or by agreement to be withheld and reported with respect to wages, salaries and other payments to employees, (ii) is not liable for any material amount in respect of any arrears of wages, severance pay or any Taxes or any penalty for failure to comply with any of the foregoing, and (iii) is not liable for any material payment to any trust or other fund governed by or maintained by or on behalf of any governmental authority, with respect to unemployment compensation benefits, social security or other benefits or obligations for employees (other than routine payments to be made in the normal course of business and consistent with past practice). There are no actions, suits, claims or administrative matters pending, threatened or reasonably anticipated against Arrow or any of its Subsidiaries relating to any employee, employment agreement or Arrow Employee Plan. There are no pending or, to the Knowledge of Arrow, threatened or reasonably anticipated claims or actions against Arrow, any of its Subsidiaries, any Arrow trustee or any trustee of any Subsidiary under any worker's compensation policy or long-term disability policy. Neither Arrow nor any Subsidiary thereof is party to a conciliation agreement, consent decree or other agreement or order with any federal, state, or local agency or governmental authority with respect to employment practices. Neither Arrow nor any of its Subsidiaries has any material liability with respect to any misclassification of: (a) any Person as an independent contractor rather than as an employee, (b) any employee leased from another employer, or (c) any employee currently or formerly classified as exempt from overtime wages. Neither Arrow nor any of its Subsidiaries has taken any action which would constitute a "plant closing" or "mass layoff" within the meaning of the WARN Act or similar state or local law, issued any notification of a plant closing or mass layoff required by the WARN Act or similar state or local law, or incurred any liability or obligation under WARN or any similar state or local law that remains unsatisfied. No terminations of employees of Arrow or any of its Subsidiaries prior to the Closing would trigger any notice or other obligations under the WARN Act or similar state or local law.

(m) Part 3.17(m) of the Arrow Disclosure Schedule lists all liabilities of Arrow or any of its Subsidiaries to any employee, that result from the termination by Arrow or any of its Subsidiaries of such employee's employment or provision of services, a change of control of Arrow, or a combination thereof. Neither Arrow nor any of its Subsidiaries has any material liability with respect to any misclassification of: (a) any Person as an independent contractor rather than as an employee, (b) any employee leased from another employer, or (c) any employee currently or formerly classified as exempt from overtime wages.

(n) Arrow has obtained a Form I-9 with respect to all of its current and former employees for whom such a form is required by law. Every Person who requires a visa, employment pass or other required permit to work in the country in which he is employed has produced a current employment pass or such other required permit to Arrow and possesses all necessary permission to remain in such country and perform services in that country.

(o) With respect to each Arrow Employee Plan, Arrow has made available to the Company a true and complete copy of, to the extent applicable, (i) such Arrow Employee Plan, (ii) the most recent annual report (Form 5500) as filed with the Internal Revenue Service, if any (iii) each currently effective trust agreement related to such Arrow Employee Plan, (iv) the most recent summary plan description for each Arrow Employee

Plan for which such description is required, along with all summaries of material modifications, amendments, resolutions and all other material plan documentation related thereto in the possession of Arrow, and (v) the most recent Internal Revenue Service determination or opinion letter or analogous ruling under foreign law issued with respect to any Arrow Employee Plan.

(p) Except where non-compliance would not result in material liability, with respect to Arrow Options granted pursuant to the Arrow Stock Plans, (i) each Arrow Option intended to qualify as an "incentive stock option" under Section 422 of the Code so qualifies, (ii) each grant of an Arrow Option was duly authorized no later than the date on which the Grant Date by all necessary corporate action, including, as applicable, approval by the Arrow Board (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, and (iii) each Arrow Option grant was made in material compliance with the terms of the Arrow Stock Plans, the Exchange Act and all other applicable laws and regulatory rules or requirements, including the rules of NASDAQ and any other exchange on which Arrow securities are traded.

(q) To the Knowledge of Arrow, no Arrow Options, stock appreciation rights or other equity-based awards issued or granted by Arrow are subject to the requirements of Code Section 409A. To the Knowledge of Arrow, each "nonqualified deferred compensation plan" (as such term is defined under Section 409A(d)(1) of the Code and the guidance thereunder) under which Arrow makes, is obligated to make or promises to make, payments (each, a "***409A Plan***") complies in all material respects, in both form and operation, with the requirements of Code Section 409A and the guidance thereunder. No payment to be made under any 409A Plan is, or to the Knowledge of Arrow will be, subject to the penalties of Code Section 409A(a)(1).

(r) No Arrow Employee Plan is a "registered pension plan" as that term is defined in subsection 248(1) of the Tax Act.

(s) All contributions or premiums required to be made by Arrow or its Subsidiaries under the terms of each Arrow Employee Plan, any collective bargaining agreement or by law have been made in a timely fashion in all material respects in accordance with applicable law and the terms of the Arrow Employee Plans and any applicable collective bargaining agreement, and Arrow does not have, and as of the Closing will not have, any actual or potential unfunded liabilities (other than liabilities accruing after Closing) with respect to any of the Arrow Employee Plans.

3.18 Environmental Matters. To the Knowledge of Arrow, since January 1, 2013, Arrow and OTI have complied in all material respects with all applicable Environmental Laws, which compliance includes the possession by Arrow or OTI, as applicable, of all permits and other Governmental Authorizations required under applicable Environmental Laws and compliance with the terms and conditions thereof, except where such failure to comply would not reasonably be expected to have an Arrow Material Adverse Effect.

3.19 Insurance.

(a) Arrow has made available to the Company accurate and complete copies of all material insurance policies and all material self-insurance programs and arrangements relating to the business, assets, liabilities and operations of Arrow, OTI, and Merger Subs. Each of such insurance policies is in full force and effect and Arrow, OTI, and Merger Subs are in material compliance with the terms thereof. Other than customary end of policy notifications from insurance carriers, since January 1, 2013, neither Arrow nor any of its Subsidiaries has received any written notice regarding any actual or possible: (i) cancellation or invalidation of any insurance policy; (ii) refusal or denial of any coverage, reservation of rights or rejection of any material claim under any insurance policy or (iii) material adjustment in the amount of the premiums payable with respect to any insurance policy. There is no pending workers' compensation or other claim under or based upon any insurance policy of Arrow or any of its Subsidiaries. All information provided to insurance carriers (in applications and otherwise)

on behalf of Arrow and each of its Subsidiaries is accurate and complete. Arrow and each of its Subsidiaries have provided timely written notice to the appropriate insurance carrier(s) of each Legal Proceeding pending or threatened against Arrow or any of its Subsidiaries, and no such carrier has issued a denial of coverage or a reservation of rights with respect to any such Legal Proceeding, or informed Arrow or any of its Subsidiaries of its intent to do so.

(b) Arrow has made available to the Company accurate and complete copies of the existing policies (primary and excess) of directors' and officers' liability insurance maintained by Arrow, OTI, and Merger Subs as of the date of this Agreement (the "***Existing Arrow D&O Policies***"). Part 3.19(b) of the Arrow Disclosure Schedule accurately sets forth the most recent annual premiums paid by Arrow and OTI with respect to the Existing Arrow D&O Policies.

3.20 Transactions with Affiliates. Except as set forth in the Arrow SEC Documents filed prior to the date of this Agreement, since the date of Arrow's last proxy statement filed in 2016 with the SEC, no event has occurred that would be required to be reported by Arrow pursuant to Item 404 of Regulation S-K promulgated by the SEC.

3.21 No Financial Advisor. Other than MTS Health Partners, LP, except as set forth on Part 3.19 of the Arrow Disclosure Schedule, no broker, finder or investment banker is entitled to any brokerage fee, finder's fee, opinion fee, success fee, transaction fee or other fee or commission in connection with the Mergers or any of the other Contemplated Transactions based upon arrangements made by or on behalf of Arrow.

3.22 Valid Issuance. The Arrow Common Stock to be issued in the Mergers will, when issued in accordance with the provisions of this Agreement, be validly issued, fully paid and nonassessable.

3.23 Disclosure. To the Knowledge of Arrow, no representation or warranty made by Arrow in this Section 3, including the Arrow Disclosure Schedule, contains any untrue statement of a material fact or omits to state any material fact necessary to make any of them, in light of the circumstances under which they were made, not misleading.

Section 4. CERTAIN COVENANTS OF THE PARTIES

4.1 Operation of the Businesses Pending the Mergers.

(a) *Operation of Arrow's Business.* Except as set forth on Part 4.1(a) of the Arrow Disclosure Schedule or unless the Company shall otherwise consent in writing (which consent shall not be unreasonably withheld, delayed or conditioned), during the period commencing on the date of this Agreement and continuing until the earlier to occur of the termination of this Agreement pursuant to Section 9 and the Second Merger Effective Time (the "***Pre-Closing Period***"): (i) each of Arrow and its Subsidiaries shall conduct its business and operations: (A) in the Ordinary Course of Business and, as reasonably deemed appropriate by the Arrow Board and with a view towards winding down its operations and (B) in compliance with all applicable Legal Requirements and the requirements of all Contracts that constitute Arrow Material Contracts; (ii) each of Arrow and its Subsidiaries shall operate in a manner consistent with the Wind-Down Plan; (iii) each of Arrow and its Subsidiaries shall continue to make regularly scheduled payments on its existing debt when due and payable (and not make any prepayments), if any and (iv) each of Arrow and its Subsidiaries shall continue to pay outstanding accounts payable and other current Liabilities (including payroll) when due and payable. Without limiting the foregoing and except (x) as expressly contemplated or permitted by this Agreement, (y) as set forth on Part 4.1(a) of the Arrow Disclosure Schedule or (z) with the prior written consent of the Company (which consent shall not be unreasonably withheld, delayed or conditioned), at all times during the Pre-Closing Period, Arrow shall not, nor shall it cause or permit any of its Subsidiaries to, do any of the following:

(i) declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of its capital stock; or repurchase, redeem or otherwise reacquire any shares of its capital stock or other

securities (except for shares of Arrow Common Stock from terminated employees, directors or consultants of Arrow);

(ii) except for contractual commitments in place at the time of this Agreement as listed in Part 4.1(a)(ii) of the Arrow Disclosure Schedule, sell, issue or grant, or authorize the issuance of: (A) any capital stock or other security (except for Arrow Common Stock issued upon the valid exercise of outstanding Arrow Options); (B) any option, warrant or right to acquire any capital stock or any other security; or (C) any instrument convertible into or exchangeable for any capital stock or other security;

(iii) amend any of its or its Subsidiaries' Organizational Documents, or effect or be a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split (other than the Arrow Reverse Stock Split) or similar transaction except as related to the Contemplated Transactions;

(iv) form any Subsidiary or acquire any equity interest or other interest in any other Entity;

(v) lend money to any Person; incur or guarantee any indebtedness for borrowed money; issue or sell any debt securities or options, warrants, calls or other rights to acquire any debt securities; or guarantee any debt securities of others;

(vi) (A) adopt, establish or enter into any Arrow Employee Plan; (B) cause or permit any Arrow Employee Plan to be amended other than as required by law or in order to make amendments for the purposes of Section 409A of the Code; (C) other than in the Ordinary Course of Business, pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, fringe benefits or other compensation or remuneration payable to, any of its employees, officers, directors or consultants; or (D) increase the severance or change of control benefits offered to any current or new employees, directors or consultants, *provided*, *that*, Arrow may pay those severance and retention payments owed under existing Arrow Employee Plans scheduled on Part 3.17(m) of the Arrow Disclosure Schedule to its current employees in connection with their termination of employment;

(vii) enter into any material transaction outside the Ordinary Course of Business;

(viii) acquire any material asset nor sell, lease or otherwise irrevocably dispose of any of its assets or properties, or grant any Encumbrance with respect to such assets or properties, except as set forth in the Wind-Down Plan;

(ix) in each case for purposes of this clause (ix), other than as required by law, make, change or revoke any material Tax election; file any material amendment to any Tax Return; adopt or change any accounting method in respect of Taxes; change any annual Tax accounting period; enter into any Tax allocation agreement, Tax sharing agreement or Tax indemnity agreement, other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers or landlords; enter into any closing agreement with respect to any Tax; settle or compromise any claim, notice, audit report or assessment in respect of material Taxes; apply for or enter into any ruling from any Tax authority with respect to Taxes; surrender any right to claim a material Tax refund; or consent to any extension or waiver of the statute of limitations period applicable to any material Tax claim or assessment;

(x) enter into, amend or terminate any Arrow Material Contract;

(xi) (A) materially change pricing or royalties or other payments set or charged by Arrow or any of its Subsidiaries to its customers or licensees, (B) agree to change pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to Arrow or any of its Subsidiaries, or (C) as of the date of this Agreement, materially change pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to Arrow or any of its Subsidiaries;

(xii) enter into any Arrow Contract relating to, arising from, or in connection with licensing, sub-licensing, or other similar arrangements concerning the Arrow IP Rights;

(xiii) authorize any expenditures (other than Third Party Expenses in connection with the transactions contemplated by this Agreement and the preparation, filing and mailing of the Proxy Statement/Prospectus and all matters reasonably related thereto) in excess of $10,000 individually or $25,000 in the aggregate outside the Ordinary Course of Business except as set forth in the Wind-Down Plan;

(xiv) execute or enter into any letter of intent or any Arrow Contract contemplating or otherwise relating to any Apatorsen Transaction; or

(xv) agree, resolve or commit to do any of the foregoing.

Nothing contained in this Agreement shall give the Company, directly or indirectly, the right to control or direct the operations of Arrow prior to the Second Merger Effective Time. Prior to the Second Merger Effective Time, Arrow shall exercise, consistent with the terms and conditions of this Agreement, complete unilateral control and supervision over its business operations.

(b) *Operation of the Company's Business.* Except as set forth on Part 4.1(b) of the Company Disclosure Schedule or unless Arrow shall otherwise consent in writing (which consent shall not be unreasonably withheld, delayed or conditioned), during the Pre-Closing Period: (i) each of the Company and its Subsidiaries shall conduct its business and operations: (A) in the Ordinary Course of Business and in accordance with past practices and (B) in compliance with all applicable Legal Requirements and the requirements of all Contracts that constitute Company Material Contracts; and (ii) each of the Company and its Subsidiaries shall preserve intact its current business organization, use reasonable efforts to keep available the services of its current Key Employees, officers and other employees and maintain its relations and goodwill with all suppliers, customers, landlords, creditors, licensors, licensees, employees and other Persons having business relationships with the Company or its Subsidiaries; (iii) each of the Company and its Subsidiaries shall continue to make regularly scheduled payments on its existing debt when due and payable (and not make any prepayments), if any; and (iv) each of the Company and its Subsidiaries shall continue to pay outstanding accounts payable and other current Liabilities (including payroll) when due and payable. Without limiting the foregoing and except (x) as expressly contemplated or permitted by this Agreement, (y) as set forth on Part 4.1(b) of the Company Disclosure Schedule, or (z) with the prior written consent of Arrow (which consent shall not be unreasonably withheld, delayed or conditioned), at all times during the Pre-Closing Period, the Company shall not, nor shall it cause or permit any of its Subsidiaries to, do any of the following:

(i) declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of capital stock; or repurchase, redeem or otherwise reacquire any shares of capital stock or other securities (except for shares of Company Common Stock from terminated employees, directors or consultants of the Company);

(ii) amend any of its or its Subsidiaries' Organizational Documents, or effect or be a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction;

(iii) sell, issue or grant, or authorize the issuance of, or make any commitments to do any of the foregoing, other than as contemplated by the Contemplated Transactions: (i) any capital stock or other security; (ii) any option, warrant or right to acquire any capital stock or any other security; or (iii) any instrument convertible into or exchangeable for any capital stock or other security;

(iv) form any Subsidiary or acquire any equity interest or other interest in any other Entity;

(v) lend money to any Person; incur or guarantee any indebtedness for borrowed money; issue or sell any debt securities or options, warrants, calls or other rights to acquire any debt securities; or guarantee any debt securities of others;

(vi) (A) adopt, establish or enter into any Company Employee Plan; (B) cause or permit any Company Employee Plan to be amended other than as required by law; (C) other than in the Ordinary Course of Business, pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, fringe benefits or other compensation or remuneration payable to, any of its directors, officers, employees, or consultants; or (D) increase the severance or change of control benefits offered to any current or new employees, directors or consultants;

(vii) enter into any material transaction outside the Ordinary Course of Business;

(viii) acquire any material asset nor sell, lease or otherwise irrevocably dispose of any of its assets or properties, or grant any Encumbrance with respect to such assets or properties;

(ix) in each case for purposes of this clause (ix), other than as required by law, make, change or revoke any material Tax election; file any material amendment to any Tax Return; adopt or change any accounting method in respect of Taxes; change any annual Tax accounting period; enter into any Tax allocation agreement, Tax sharing agreement or Tax indemnity agreement, other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers or landlords; enter into any closing agreement with respect to any Tax; settle or compromise any claim, notice, audit report or assessment in respect of material Taxes; apply for or enter into any ruling from any Tax authority with respect to Taxes; surrender any right to claim a material Tax refund; or consent to any extension or waiver of the statute of limitations period applicable to any material Tax claim or assessment;

(x) except as contemplated by Section 6.5 of this Agreement, enter into, amend or terminate any Company Material Contract;

(xi) (A) materially change pricing or royalties or other payments set or charged by the Company or any of its Subsidiaries to its customers or licensees, (B) agree to change pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to the Company or any of its Subsidiaries, or (C) as of the date of this Agreement, materially change pricing or royalties or other payments set or charged by persons who have licensed Intellectual Property to the Company or any of its Subsidiaries;

(xii) enter into any Company Contract relating to, arising from, or in connection with licensing, sub-licensing, or other similar arrangements concerning the Company IP Rights;

(xiii) authorize any expenditures (other than Company Transaction Expenses or Third Party Expenses in connection with the preparation, filing and mailing of the Proxy Statement/Prospectus and all matters reasonably related thereto) in excess of $10,000 individually or $25,000 in the aggregate outside the Ordinary Course of Business; or

(xiv) agree, resolve or commit to do any of the foregoing.

Nothing contained in this Agreement shall give Arrow, directly or indirectly, the right to control or direct the operations of the Company prior to the Second Merger Effective Time. Prior to the Second Merger Effective Time, the Company shall exercise, consistent with the terms and conditions of this Agreement, complete unilateral control and supervision over its business operations.

4.2 Access and Investigation. Subject to the terms of the Confidentiality Agreement which the Parties agree will continue in full force following the date of this Agreement, during the Pre-Closing Period, upon

reasonable notice each Party shall, and shall use commercially reasonable efforts to cause such Party's Representatives to: (a) provide the other Party and such other Party's Representatives with reasonable access during normal business hours to such Party's Representatives, personnel and assets and to all existing books, records, Tax Returns, work papers and other documents and information relating to such Party and its Subsidiaries; (b) provide the other Party and such other Party's Representatives with such copies of the existing books, records, Tax Returns, work papers, product data, and other documents and information relating to such Party and its Subsidiaries, and with such additional financial, operating and other data and information regarding such Party and its Subsidiaries as the other Party may reasonably request and (c) permit the other Party's officers and other employees to meet, upon reasonable notice and during normal business hours, with the chief financial officer and other officers and managers of such Party responsible for such Party's financial statements and the internal controls of such Party to discuss such matters as the other Party may deem necessary or appropriate in order to enable the other Party to satisfy its obligations under the Sarbanes-Oxley Act and the rules and regulations relating thereto. Any investigation conducted by either Arrow or the Company pursuant to this Section 4.2 shall be conducted in such manner as not to interfere unreasonably with the conduct of the business of the other Party. Any access granted by either Arrow or the Company shall be subject to its reasonable security measures and insurance requirements and shall not include the right to perform invasive testing. Notwithstanding the foregoing, any Party may restrict the foregoing access to the extent that any Legal Requirement applicable to such Party requires such Party to restrict or prohibit access to any such properties or information.

4.3 No Solicitation.

(a) Each of Arrow and the Company agrees that, during the Pre-Closing Period, neither it nor any of its Subsidiaries shall, nor shall it or any of its Subsidiaries authorize any of Representatives to, directly or indirectly: (i) solicit, initiate, encourage, induce or facilitate any Acquisition Proposal; (ii) furnish any information regarding such Party to any Person in connection with or in response to an Acquisition Proposal or Acquisition Inquiry; (iii) engage in discussions or negotiations with any Person with respect to any Acquisition Proposal or Acquisition Inquiry; (iv) approve, endorse or recommend any Acquisition Proposal (subject to Sections 5.2 and 5.3); (v) execute or enter into any letter of intent or any Contract contemplating or otherwise relating to any Acquisition Transaction; or (vi) grant any waiver or release under any confidentiality, standstill or similar agreement (other than to the other Party); *provided*, *however*, that, notwithstanding anything contained in this Section 4.3(a), (x) prior to the adoption and approval of this Agreement by the Required Company Stockholder Vote, the Company and its Subsidiaries and Representatives may and (y) prior to the adoption and approval of this Agreement by the Required Arrow Stockholder Vote, Arrow and its Representatives may, furnish information regarding such Party and its Subsidiaries to, and enter into discussions or negotiations with, any Person in response to a bona fide written Acquisition Proposal by such Person that did not result from a breach of this Section 4.3, which such Party's board of directors determines in good faith, after consultation with such Party's financial advisor, and outside legal counsel, constitutes, or is reasonably likely to result in, a Superior Offer (and is not withdrawn) if: (A) at least one Business Day prior to furnishing any such nonpublic information to, or entering into discussions with, such Person, such Party gives the other Party written notice of the identity of such Person and of such Party's intention to furnish nonpublic information to, or enter into discussions with, such Person; (B) such Party receives from such Person an executed confidentiality agreement containing provisions (including nondisclosure provisions, use restrictions, non-solicitation and no hire provisions) at least as favorable to such Party as those contained in the Confidentiality Agreement and (C) substantially contemporaneously with furnishing any such nonpublic information to such Person, such Party furnishes such nonpublic information to the other Party (to the extent such information has not been previously furnished by such Party to the other Party). Without limiting the generality of the foregoing, each Party acknowledges and agrees that, in the event any Representative of such Party (whether or not such Representative is purporting to act on behalf of such Party) takes any action that, if taken by such Party, would constitute a breach of this Section 4.3 by such Party, the taking of such action by such Representative shall be deemed to constitute a breach of this Section 4.3 by such Party for purposes of this Agreement.

(b) If any Party or any Representative of such Party receives an Acquisition Proposal or Acquisition Inquiry at any time during the Pre-Closing Period, then such Party shall promptly (and in no event later than one Business Day after such Party becomes aware of such Acquisition Proposal or Acquisition Inquiry) advise the other Party orally and in writing of such Acquisition Proposal or Acquisition Inquiry (including the identity of the Person making or submitting such Acquisition Proposal or Acquisition Inquiry, and the terms thereof). Such Party shall keep the other Party reasonably informed with respect to the status and terms of any such Acquisition Proposal or Acquisition Inquiry and any material modification or proposed material modification thereto. In addition to the foregoing, each Party shall provide the other Party with at least one Business Day's written notice of a meeting of its board of directors (or any committee thereof) at which its board of directors (or any committee thereof) is reasonably expected to consider an Acquisition Proposal or Acquisition Inquiry it has received.

(c) Each Party shall immediately cease and cause to be terminated any existing discussions, negotiations and communications with any Person that relate to any Acquisition Proposal or Acquisition Inquiry as of the date of this Agreement and request the destruction or return of any nonpublic information provided to such Person.

4.4 Notification of Certain Matters. During the Pre-Closing Period, each of the Company, on the one hand, and Arrow, on the other hand, shall promptly notify the other (and, if in writing, furnish copies of) if any of the following occurs: (a) any notice or other communication from any Person alleging that the Consent of such Person is or may be required in connection with any of the Contemplated Transactions; (b) any Legal Proceeding against, relating to, involving or otherwise affecting such Party or its Subsidiaries is commenced, or, to the Knowledge of such Party, threatened against such Party or, to the Knowledge of such Party, any director, officer or Key Employee of such Party; (c) such Party becoming aware of any inaccuracy in any representation or warranty made by such Party in this Agreement or (d) any failure of such Party to comply with any covenant or obligation of such Party; in each case that could reasonably be expected to make the timely satisfaction of any of the conditions set forth in Sections 6, 7 or 8, as applicable, impossible or materially less likely. No notification given to a Party pursuant to this Section 4.4 shall change, limit or otherwise affect any of the representations, warranties, covenants or obligations of the Party providing such notification or any of such Party's Subsidiaries contained in this Agreement or the Company Disclosure Schedule or Arrow Disclosure Schedule for purposes of Section 8.1 or Section 7.1, as appropriate.

Section 5. ADDITIONAL AGREEMENTS OF THE PARTIES

5.1 Registration Statement.

(a) As promptly as practicable after the date of this Agreement, the Parties shall prepare and Arrow shall cause to be filed with the SEC the Proxy Statement/Prospectus and Arrow, with cooperation by the Company, shall prepare and cause to be filed with the SEC the Registration Statement, in which the Proxy Statement/Prospectus will be included as a prospectus. Arrow covenants and agrees that the Proxy Statement/Prospectus, including any pro forma financial statements included therein, and the letter to stockholders, notice of meeting and form of proxy included therewith, will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. Notwithstanding the foregoing, Arrow makes no covenant, representation or warranty with respect to statements made in the Proxy Statement/Prospectus (and the letter to stockholders, notice of meeting and form of proxy included therewith), if any, based on information provided by the Company for inclusion therein. Each of the Parties shall use commercially reasonable efforts to cause the Registration Statement and the Proxy Statement/Prospectus to comply with the applicable rules and regulations promulgated by the SEC, to respond promptly to any comments of the SEC or its staff and to have the Registration Statement declared effective under the Securities Act as promptly as practicable after it is filed with the SEC. Each of the Parties shall use commercially reasonable efforts to cause the Proxy Statement/Prospectus to be mailed to Arrow's stockholders as promptly as practicable after the Registration Statement is declared effective under the Securities Act. Each Party shall promptly furnish to the other Party all

information concerning such Party and such Party's Subsidiaries and such Party's stockholders that may be required or reasonably requested in connection with any action contemplated by this Section 5.1. If Arrow, Merger Subs or the Company become aware of any event or information that, pursuant to the Securities Act or the Exchange Act, should be disclosed in an amendment or supplement to the Registration Statement or Proxy Statement/Prospectus, as the case may be, then such Party shall promptly inform the other Parties and shall cooperate with such other Parties in filing such amendment or supplement with the SEC and, if appropriate, in mailing such amendment or supplement to the Arrow stockholders.

(b) Prior to the Second Merger Effective Time, Arrow shall use commercially reasonable efforts to obtain all regulatory approvals needed to ensure that the Arrow Common Stock to be issued in the Mergers (to the extent required) shall be registered or qualified or exempt from registration or qualification under the securities law of every jurisdiction of the United States in which any registered holder of Company Capital Stock has an address of record on the record date for determining the stockholders entitled to notice of and to vote pursuant to this Agreement; *provided*, *however*, that Arrow shall not be required: (i) to qualify to do business as a foreign corporation in any jurisdiction in which it is not now qualified; or (ii) to file a general consent to service of process in any jurisdiction.

(c) The Company shall reasonably cooperate with Arrow and provide, and require its Representatives to provide, Arrow and its Representatives, with all true, correct and complete information regarding the Company or its Subsidiaries that is required by law to be included in the Registration Statement or reasonably requested from the Company to be included in the Registration Statement. Without limiting the foregoing, the Company will use commercially reasonable efforts to cause to be delivered to Arrow a letter of the Company's independent accounting firm, dated no more than two Business Days before the date on which the Registration Statement becomes effective (and reasonably satisfactory in form and substance to Arrow), that is customary in scope and substance for letters delivered by independent public accountants in connection with registration statements similar to the Registration Statement.

5.2 Company Stockholder Written Consent.

(a) Promptly after the date hereof (and in any no event later than 24 hours from the effectiveness of the Registration Statement), the Company shall obtain the approval by written consent, in the form attached hereto as **Exhibit D**, from Company stockholders sufficient for the Required Company Stockholder Vote in lieu of a meeting pursuant to Section 228 of the DGCL, for purposes of (i) adopting this Agreement and approving the Contemplated Transactions and (ii) acknowledging that the approval given thereby is irrevocable (the "***Company Stockholder Written Consent***").

(b) The Company agrees that, subject to Section 5.2(c): (i) the Company Board shall recommend that the Company's stockholders vote to adopt and approve this Agreement and the Contemplated Transactions and shall use commercially reasonable efforts to solicit such approval within the time set forth in Section 5.2(a) (the recommendation of the Company Board that the Company's stockholders vote to adopt and approve this Agreement being referred to as the "***Company Board Recommendation***") and (ii) the Company Board Recommendation shall not be withdrawn or modified in a manner adverse to Arrow, and no resolution by the Company Board or any committee thereof to withdraw or modify the Company Board Recommendation in a manner adverse to Arrow shall be adopted or proposed.

(c) Notwithstanding anything to the contrary contained in Section 5.2(b), at any time prior to adoption of this Agreement by the Required Company Stockholder Vote, the Company Board may withhold, amend, withdraw or modify the Company Board Recommendation in a manner adverse to Arrow if, but only if the Company Board determined in good faith, based on such matters as it deems relevant following consultation with its outside legal counsel, that the failure to withdraw, withhold, amend, or modify such recommendation would be inconsistent with its fiduciary duties under applicable Legal Requirements; *provided* that Arrow receives written notice from the Company confirming that the Company Board has determined to change its

recommendation at least two Business Days in advance of the Company Board Recommendation being so withdrawn, withheld, amended or modified in a manner adverse to Arrow.

5.3 Arrow Stockholders' Meeting.

(a) Arrow shall use commercially reasonable efforts to take all action necessary under applicable Legal Requirements to call, give notice of and hold a meeting of the holders of Arrow Common Stock to vote on the issuance of Arrow Common Stock in the First Merger (such meeting, the "***Arrow Stockholders' Meeting***"). The Arrow Stockholders' Meeting shall be held as promptly as practicable after the Registration Statement is declared effective under the Securities Act. Arrow shall take reasonable measures to ensure that all proxies solicited in connection with the Arrow Stockholders' Meeting are solicited in compliance with all applicable Legal Requirements.

(b) Arrow agrees that, subject to Section 5.3(c): (i) the Arrow Board shall recommend that the holders of Arrow Common Stock vote to approve the issuance of Arrow Common Stock in the First Merger; (ii) the Arrow Board shall recommend that the holders of Arrow Common Stock vote to approve a proposal to effectuate the Arrow Reverse Stock Split; (iii) the Proxy Statement/Prospectus shall include a statement that the Arrow Board recommends that Arrow's stockholders vote to approve the issuance of Arrow Common Stock in the First Merger (the recommendation of the Arrow Board that Arrow's stockholders vote to approve the issuance of Arrow Common Stock in the First Merger and the Arrow Reverse Stock Split being referred to as the "***Arrow Board Recommendation***") and (vi) the Arrow Board Recommendation shall not be withdrawn or modified in a manner adverse to the Company, and no resolution by the Arrow Board or any committee thereof to withdraw or modify the Arrow Board Recommendation in a manner adverse to the Company shall be adopted or proposed.

(c) Notwithstanding anything to the contrary contained in Section 5.3(b), at any time prior to the approval of the issuance of Arrow Common Stock in the First Merger by the stockholders of Arrow by the Required Arrow Stockholder Vote, the Arrow Board may withhold, amend, withdraw or modify the Arrow Board Recommendation in a manner adverse to the Company if, but only if the Arrow Board determines in good faith, based on such matters as it deems relevant following consultation with its outside legal counsel, that, in connection with an Acquisition Proposal, the failure to withhold, amend, withdraw or modify such recommendation would be inconsistent with its fiduciary duties under applicable Legal Requirements; *provided* that the Company receives written notice from Arrow confirming that the Arrow Board has determined to change its recommendation at least two Business Days in advance of the Arrow Board Recommendation being withdrawn, withheld, amended or modified in a manner adverse to the Company.

(d) Nothing contained in this Agreement shall prohibit the Arrow Board from taking and disclosing to the Arrow Stockholders a position contemplated by Rule 14e-2(a), Rule 14d-9, Item 1012 of Regulation M-A or otherwise complying with the provisions of Rule 14d-9 or Item 1012 under the Exchange Act; provided, however, that none of the following shall be deemed to be a Change of Arrow Board Recommendation: (i) a "stop, look and listen" or similar communication of the type contemplated by Rule 14d-9(f) under the Exchange Act, (ii) an express rejection of any applicable Acquisition Proposal and/or (iii) an express reaffirmation of the Arrow Board Recommendation.

5.4 Regulatory Approvals. Each Party shall use commercially reasonable efforts to file or otherwise submit, as soon as practicable after the date of this Agreement, all applications, notices, reports and other documents reasonably required to be filed by such Party with or otherwise submitted by such Party to any Governmental Body with respect to the Mergers and the other Contemplated Transactions, and to submit promptly any additional information requested by any such Governmental Body. Without limiting the generality of the foregoing, the Parties shall, promptly after the date of this Agreement, prepare and file (a) the notification and report forms required to be filed under the HSR Act and (b) any notification or other document required to be filed in connection with the Mergers under any applicable foreign Legal Requirement relating to antitrust or

competition matters. The Company and Arrow shall respond as promptly as is practicable to respond in compliance with: (i) any inquiries or requests received from the Federal Trade Commission or the Department of Justice for additional information or documentation and (ii) any inquiries or requests received from any state attorney general, foreign antitrust or competition authority or other Governmental Body in connection with antitrust or competition matters.

5.5 SEC Filings. Arrow shall continue to prepare and file with the SEC its quarterly reports on Form 10-Q, its annual report on Form 10-K and any reports on Form 8-K on a timely basis.

5.6 Arrow Options. Prior to the Closing, the Arrow Board shall have adopted appropriate resolutions and taken all other actions necessary and appropriate to provide that each unexpired and unexercised Arrow Option, whether vested or unvested, shall continue in accordance with its terms without amendment, cancellation or retirement.

5.7 Employee Benefits. Arrow and the Company shall cause Arrow to comply with terms of any employment, severance, retention, change of control, or similar agreement specified on Part 3.17(c) of the Arrow Disclosure Schedule as being applicable to this Section 5.7, subject to the provisions of such agreements, including the maintenance of COBRA insurance for Arrow's former officers and employees. In addition to the foregoing, the Company and Arrow shall use reasonable best efforts and take any action reasonably necessary to mitigate and/or minimize the impact of the tax consequences of Section 280G of the Code (including under all employment, severance and termination agreements, other compensation arrangements and benefit plans) on any individual that is regarded as a "disqualified individual" with respect to Arrow or the Company, as the case may be, (as such term is defined in proposed Treasury Regulation Section 1.280G-1).

5.8 Indemnification of Officers and Directors.

(a) From the First Merger Effective Time through the sixth anniversary of the date on which the First Merger Effective Time occurs, each of Arrow and the Surviving Corporation shall indemnify and hold harmless each person who is now, or has been at any time prior to the date hereof, or who becomes prior to the Second Merger Effective Time, (i) a director or officer of Arrow, OTI, the Company or its Subsidiaries, respectively or (ii) a covered person under an existing Arrow agreement which provides for similar indemnification obligations (collectively, the "***D&O Indemnified Parties***"), against all claims, losses, liabilities, damages, judgments, fines and reasonable fees, costs and expenses, including attorneys' fees and disbursements, incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to the fact that the D&O Indemnified Party is or was a director or officer of Arrow, OTI, the Company or its Subsidiaries, or was otherwise providing services to Arrow, OTI, the Company or its Subsidiaries, whether asserted or claimed prior to, at or after the First Merger Effective Time, to the fullest extent permitted under the DGCL for directors or officers of Delaware corporations. Each D&O Indemnified Party will be entitled to advancement of expenses incurred in the defense of any such claim, action, suit, proceeding or investigation from each of Arrow and the Surviving Corporation, jointly and severally, upon receipt by Arrow or the Surviving Corporation from the D&O Indemnified Party of a request therefor; provided that any person to whom expenses are advanced provides an undertaking, to the extent then required by the DGCL to repay such advances if it is ultimately determined that such person is not entitled to indemnification.

(b) The certificate of incorporation and bylaws of each of Arrow, the Initial Surviving Corporation and the Surviving Corporation shall contain, and Arrow shall cause the certificate of incorporation and bylaws of the Initial Surviving Corporation and the Surviving Corporation to so contain, provisions no less favorable with respect to indemnification, advancement of expenses and exculpation of the D&O Indemnified Parties than are presently set forth in the certificate of incorporation and bylaws of Arrow and the Company, as applicable, which provisions shall not be amended, modified or repealed for a period of six years' time from the First Merger Effective Time in a manner that would adversely affect the rights thereunder of the D&O Indemnified Parties.

(c) The Company shall purchase an insurance policy, with an effective date as of the Closing, which maintains in effect for six years from the Closing the current directors' and officers' liability insurance policies maintained by the Company (provided that Arrow may substitute therefor policies of at least the same coverage containing terms and conditions that are not materially less favorable).

(d) Arrow shall maintain directors' and officers' liability insurance policies, with an effective date as of the Closing, on commercially available terms and conditions and with coverage limits customary for U.S. public companies similarly situated to Arrow.

(e) In addition, Arrow shall purchase, prior to the Closing Date, following consultation with, and subject to the approval of, the Company (such approval not to be unreasonably withheld), a six-year prepaid "tail policy" for the non-cancellable extension of the directors' and officers' liability coverage of Arrow's existing directors' and officers' insurance policies and Arrow's existing fiduciary liability insurance policies, in each case, for a claims reporting or discovery period of at least six years from and after the Closing with respect to any claim related to any period of time at or prior to the Closing with terms, conditions, retentions and limits of liability that are no less favorable than the coverage provided under Arrow's existing policies as of the date of this Agreement with respect to any actual or alleged error, misstatement, misleading statement, act, omission, neglect, breach of duty or any matter claimed against a director or officer Arrow by reason of him or her serving in such capacity that existed or occurred at or prior to the Closing (including in connection with this Agreement or the transactions or actions contemplated hereby or in connection with Arrow's initial public offering of shares of Arrow Common Stock).

(f) Arrow shall pay all expenses, including reasonable attorneys' fees, that may be incurred by the persons referred to in this Section 5.8 in connection with their enforcement of their rights provided in this Section 5.8.

(g) The provisions of this Section 5.8 are intended to be in addition to the rights otherwise available to the D&O Indemnified Parties by law, charter, statute, bylaw or agreement, and shall operate for the benefit of, and shall be enforceable by, each of the D&O Indemnified Parties, their heirs and their representatives.

(h) In the event Arrow, the Initial Surviving Corporation or the Surviving Corporation or any of their respective successors or assigns (i) consolidates with or merges into any other Person and shall not be the continuing or surviving corporation or entity of such consolidation or merger, or (ii) transfers all or substantially all of its properties and assets to any Person, then, and in each such case, proper provision shall be made so that the successors and assigns of Arrow, the Initial Surviving Corporation or the Surviving Corporation, as the case may be, shall succeed to the obligations set forth in this Section 5.8. Arrow shall cause the Initial Surviving Corporation or the Surviving Corporation to perform all of the obligations of the Initial Surviving Corporation or the Surviving Corporation under this Section 5.8.

5.9 Additional Agreements.

(a) Subject to Section 5.9(b), the Parties shall use commercially reasonable efforts to cause to be taken all actions necessary to consummate the Mergers and make effective the other Contemplated Transactions. Without limiting the generality of the foregoing, but subject to Section 5.9(b), each Party to this Agreement: (i) shall make all filings and other submissions (if any) and give all notices (if any) required to be made and given by such Party in connection with the Mergers and the other Contemplated Transactions; (ii) shall use commercially reasonable efforts to obtain each Consent (if any) reasonably required to be obtained (pursuant to any applicable Legal Requirement or Contract, or otherwise) by such Party in connection with the Mergers or any of the other Contemplated Transactions or for such Contract to remain in full force and effect; (iii) shall use commercially reasonable efforts to lift any injunction prohibiting, or any other legal bar to, the Mergers or any of the other Contemplated Transactions and (iv) shall use commercially reasonable efforts to satisfy the conditions precedent to the consummation of this Agreement.

(b) Notwithstanding anything to the contrary contained in this Agreement, no Party shall have any obligation under this Agreement: (i) to dispose of or transfer or cause any of its Subsidiaries to dispose of or transfer any assets; (ii) to discontinue or cause any of its Subsidiaries to discontinue offering any product or service; (iii) to license or otherwise make available, or cause any of its Subsidiaries to license or otherwise make available to any Person any Intellectual Property; (iv) to hold separate or cause any of its Subsidiaries to hold separate any assets or operations (either before or after the Closing Date); (v) to make or cause any of its Subsidiaries to make any commitment (to any Governmental Body or otherwise) regarding its future operations or (vi) to contest any Legal Proceeding or any order, writ, injunction or decree relating to the Mergers or any of the other Contemplated Transactions if such Party determines in good faith that contesting such Legal Proceeding or order, writ, injunction or decree might not be advisable.

5.10 Disclosure. Without limiting any of either Party's obligations under the Confidentiality Agreement, each Party shall not, and shall not permit any of its Subsidiaries or any Representative of such Party to, issue any press release or make any disclosure (to any customers or employees of such Party, to the public or otherwise) regarding the Mergers or any of the other Contemplated Transactions unless: (a) the other Party shall have approved such press release or disclosure in writing (such approval not to be unreasonable conditioned, withheld or delayed) or (b) such Party shall have determined in good faith, upon the advice of outside legal counsel, that such disclosure is required by applicable Legal Requirements and, to the extent practicable, before such press release or disclosure is issued or made, such Party advises the other Party of, and consults with the other Party regarding, the text of such press release or disclosure; *provided*, *however*, that each of the Company and Arrow may make any public statement in response to specific questions by the press, analysts, investors or those attending industry conferences or financial analyst conference calls, so long as any such statements are consistent with previous press releases, public disclosures or public statements made by the Company or Arrow in compliance with this Section 5.10.

5.11 Listing. Arrow shall use its reasonable best efforts to maintain its existing listing on NASDAQ, to obtain approval of the listing of the combined company on NASDAQ and to cause the shares of Arrow Common Stock being issued in the Mergers to be approved for listing (subject to notice of issuance) on NASDAQ at or prior to the First Merger Effective Time. Arrow shall notify and provide copies of (if applicable) to the Company, within 48 hours of receipt, any notice from NASDAQ with respect to a potential, proposed, or actual delisting or suspension of the Arrow Common Stock on NASDAQ. Arrow shall (a) respond as promptly as is practicable to any inquiries, hearings or requests received from NASDAQ for additional information or documentation in connection with maintaining the listing of the Arrow Common Stock on NASDAQ and all other related matters and (b) provide copies of all such documents from NASDAQ or prepared and submitted to NASDAQ by Arrow to the Company under clause (a).

5.12 Tax Matters.

(a) The Parties shall use their respective reasonable best efforts to cause the First Merger, taken together with the Second Merger, to qualify, and agree not to, and not to permit or cause any affiliate or any Subsidiary to, take any actions or cause any action to be taken which would reasonably be expected to prevent the First Merger, taken together with the Second Merger, from qualifying, for the Intended Tax Treatment, including considering and negotiating in good faith such amendments to this Agreement as may reasonably be required in order to obtain such qualification (it being understood that no Party shall be required to agree to any such amendment). The Parties shall report the Mergers and the other transactions contemplated by this Agreement, including for U.S. federal income Tax purposes, in a manner consistent with such qualification. No Party shall take any action, or allow any affiliate to take any action, that would reasonably be expected to prevent any of the foregoing.

(b) If there is a determination within the meaning of Section 1313(a) of the Code that the First Merger, taken together with the Second Merger, does not qualify as a reorganization described in Section 368(a) of the Code, then the parties to this Agreement intend that, for federal income tax purposes that the First Merger

was a qualified stock purchase within the meaning of Section 338 of the Code and the Second Merger qualified as a liquidation described in Section 332 of the Code.

(c) The Buyer Parties covenant that none of the Buyer Parties nor any of their affiliates or a "related person" (as defined for purposes of Treasury Regulations Section 1.368-1(e)(4)) with respect to the Buyer Parties (a "***Related Tax Person***"), nor any entity or arrangement that is treated as a partnership for federal income tax purposes and in which the Buyer Parties or a Related Tax Person is treated for federal income tax purposes as owning a direct or indirect interest, will, in connection with any of the transactions provided for herein (as determined for purposes of Treasury Regulations Section 1.368-1(e)), redeem or otherwise acquire any of the shares of Arrow Common Stock transferred in connection with such transactions if such action would cause the First Merger taken together with the Second Merger to fail to qualify as a reorganization described in Section 368(a) of the Code. This Section 5.12(c) does not restrict, and may not be construed as restricting, any actions of the Buyer Parties or any Related Tax Person that are undertaken at least 24 months after the Closing; provided, however, that such Buyer Parties or Related Tax Person does not enter into a plan or enter into a binding commitment to take such action within 24 months of the Closing Date.

(d) This Agreement is intended to constitute, and the Parties hereby adopt this Agreement as, a "plan of reorganization" within the meaning Treasury Regulation Sections 1.368-2(g) and 1.368-3(a). The Parties shall treat and shall not take any tax reporting position inconsistent with the treatment of the Mergers as a reorganization within the meaning of Section 368(a) of the Code for U.S. federal, state and other relevant Tax purposes, unless otherwise required pursuant to a "determination" within the meaning of Section 1313(a) of the Code.

(e) All transfer, documentary, sales, use, stamp, registration and other such Taxes and fees (including any penalties and interest) imposed on the Company stockholders in connection with the transfer of such stockholders' Company Capital Stock pursuant to this Agreement (collectively, "***Transfer Taxes***") shall be paid by the Company's stockholders when due, and such stockholders will, at their own expense, file all necessary Tax Returns and other documentation with respect to all such Transfer Taxes, and, if required by any Legal Requirements. The Company's stockholders shall provide Arrow with (i) evidence reasonably satisfactory to Arrow that such Transfer Taxes have been paid by such stockholders and (ii) a clearance certificate or similar documents which may be required by any Tax authority to relieve Arrow of any obligation to withhold any portion of the payments to the Company's stockholders pursuant to this Agreement.

5.13 Legends. Arrow shall be entitled to place appropriate legends on the certificates evidencing any shares of Arrow Common Stock to be received in the Mergers by equityholders of the Company who may be considered "affiliates" of Arrow for purposes of Rules 144 and 145 under the Securities Act reflecting the restrictions set forth in Rules 144 and 145 and to issue appropriate stop transfer instructions to the transfer agent for Arrow Common Stock.

5.14 Directors and Officers. Arrow shall take all action necessary to cause the persons identified on Schedule 5.14 to be appointed as executive officers of Arrow as set forth in Schedule 5.14, effective upon the Closing. Additionally, effective as of the Closing, Arrow shall take all action necessary to cause (i) the number of members of the Arrow Board to be fixed at seven (7) directors, (ii) three (3) individuals identified by Arrow (who are set forth on Schedule 5.14), two (2) of whom are to be independent under the applicable SEC rules and the criteria established by NASDAQ and who are reasonably acceptable to the Company, to be appointed to the Arrow Board, and (iii) four (4) individuals identified by the Company (two (2) of whom are set forth on Schedule 5.14) and two (2) of whom are to be independent under the applicable SEC rules and the criteria established by NASDAQ and who are reasonably acceptable to Arrow, to be appointed to the Arrow Board (the directors appointed pursuant to this Section 5.14 are referred to as the "***Selected Directors***"). Arrow shall take all action necessary to obtain the resignations of the directors of Arrow other than the Selected Directors, such resignations to be effective as of the Closing.

5.15 Director and Officer Matters. Prior to the First Merger Effective Time, Arrow shall take all such steps as may be required to cause any acquisitions of Arrow Common Stock resulting from the Mergers by each individual who will become subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to Arrow to be exempt under Rule 16b-3 under the Exchange Act.

5.16 CVR Distribution. Prior to the First Merger Effective Time, Arrow shall take all such steps as may be required to distribute the CVRs.

5.17 Shelf Registration. Arrow shall use its reasonable best efforts to maintain the effectiveness of its existing shelf registration statement on Form S-3, File No. 333-207670, through the Closing.

Section 6. CONDITIONS PRECEDENT TO OBLIGATIONS OF EACH PARTY

The obligations of each Party to effect the Mergers and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or, to the extent permitted by applicable law, the written waiver by each of the Parties, at or prior to the Closing, of each of the following conditions:

6.1 Effectiveness of Registration Statement. The Registration Statement shall have become effective in accordance with the provisions of the Securities Act, and shall not be subject to any stop order or proceeding (or threatened proceeding by the SEC) seeking a stop order with respect to the Registration Statement.

6.2 No Restraints. No temporary restraining order, preliminary or permanent injunction or other order preventing the consummation of the Mergers shall have been issued by any court of competent jurisdiction or other Governmental Body of competent jurisdiction and remain in effect, and there shall not be any Legal Requirement which has the effect of making the consummation of the Mergers illegal.

6.3 Stockholder Approval. This Agreement, the Mergers and the other transactions contemplated by this Agreement shall have been duly adopted and approved by the Required Company Stockholder Vote, and the issuance of the Arrow Common Stock in the Mergers and the Mergers shall have been duly approved by the Required Arrow Stockholder Vote.

6.4 Listing. The existing shares of Arrow Common Stock shall have been continually listed on NASDAQ as of and from the date of this Agreement through the Closing Date, the approval of the listing of the additional shares of Arrow Common Stock on NASDAQ shall have been obtained and the shares of Arrow Common Stock to be issued in the Mergers shall be approved for listing (subject to official notice of issuance) on NASDAQ as of the Second Merger Effective Time.

6.5 Amendment of Certain Agreements. The agreements set forth on Schedule 6.5 shall have been amended to the reasonable satisfaction of the Parties in the manner set forth on Schedule 6.5.

6.6 No Governmental Proceedings Relating to Contemplated Transactions or Right to Operate Business There shall not be any Legal Proceeding pending, or overtly threatened in writing by an official of a Governmental Body in which such Governmental Body indicates that it intends to conduct any Legal Proceeding or take any other action: (a) challenging or seeking to restrain or prohibit the consummation of the Mergers; (b) relating to the Mergers and seeking to obtain from Arrow, Merger Subs or the Company any damages or other relief that may be material to Arrow or the Company; (c) that would materially and adversely affect the right or ability of Arrow or the Company to own the assets or operate the business of Arrow or the Company; or (d) seeking to compel Arrow, the Company or any of its Subsidiary to dispose of or hold separate any material assets as a result of the Mergers.

6.7 Arrow Reverse Stock Split. The Arrow Reverse Stock Split shall have been completed to the reasonable satisfaction of the Company.

Section 7. ADDITIONAL CONDITIONS PRECEDENT TO OBLIGATIONS OF ARROW AND MERGER SUBS

The obligations of Arrow and Merger Subs to effect the Mergers and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or the written waiver by Arrow, at or prior to the Closing, of each of the following conditions:

7.1 Accuracy of Representations. The Company Fundamental Representations shall have been true and correct in all respects as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on and as of such date (except to the extent such representations and warranties are specifically made as of a particular date, in which case such representations and warranties shall be true and correct as of such date). Each of the Company IP Representations shall have been true and correct in all material respects (without giving effect to any references therein to any Company Material Adverse Effect or other materiality qualifications) on and as of the Closing Date with the same force and effect as if made on and as of such date (except to the extent such Company IP Representations are specifically made as of a particular date, in which case such Company IP Representations shall have been true and correct in all material respects as of such date). The Company Capitalization Representations shall have been true and correct in all respects as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on and as of such date, except, in each case, for such inaccuracies which are *de minimis*, individually or in the aggregate and except to the extent such representations and warranties are specifically made as of a particular date, in which case such representations and warranties shall be true and correct as of such date. The representations and warranties of the Company contained in this Agreement (other than the Company Fundamental Representations, the Company IP Representations, and the Company Capitalization Representations) shall have been true and correct as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on the Closing Date except (A) in each case, or in the aggregate, where the failure to be true and correct would not reasonably be expected to have a Company Material Adverse Effect (without giving effect to any references therein to any Company Material Adverse Effect or other materiality qualifications), or (B) for those representations and warranties which address matters only as of a particular date (which representations shall have been true and correct, subject to the qualifications as set forth in the preceding clause (A), as of such particular date). For the sake of clarity, it is understood that, for purposes of determining the accuracy of the representations and warranties of the Company, any update of or modification to the Company Disclosure Schedule made or purported to have been made after the date of this Agreement shall be disregarded.

7.2 Performance of Covenants. The Company shall have performed in all material respects all of its obligations and complied in all material respects with all of its agreements and covenants to be performed or complied with by it under this Agreement at or prior to the Second Merger Effective Time.

7.3 [Intentionally omitted.]

7.4 Agreements and Other Documents. Arrow shall have received the following agreements and other documents, each of which shall be in full force and effect:

(a) a certificate executed by the Chief Executive Officer of the Company confirming that the conditions set forth in Sections 7.1 and 7.2 have been duly satisfied; and

(b) certificates of good standing (or equivalent documentation) of the Company in its jurisdiction of organization and the various foreign jurisdictions in which it is qualified, and certified charter documents.

7.5 Lock-up Agreements. Arrow shall have received a copy of a Lock-up Agreement, substantially in the form attached hereto as **Exhibit E** (the "***Lock-up Agreement***") duly executed by each of the Persons listed on Schedule 7.5 hereto, each of which shall be in full force and effect.

7.6 CVR Agreement. Arrow shall have received a copy of the CVR Agreement duly executed by the Company and the Rights Agent (as defined therein), which shall be in full force and effect.

7.7 No Other Proceedings. There shall not be pending any Legal Proceeding in which, in the reasonable judgment of Arrow, would result in an outcome that is material and adverse to Arrow, the Company, or the Surviving Corporation, which Legal Proceeding: (a) challenges or seeks to restrain or prohibit the consummation of the Mergers or any of the other Contemplated Transactions; (b) relates to the Mergers or any of the other Contemplated Transactions and seeks to obtain from Arrow, the Company, or the Surviving Corporation, any damages or other relief that may be material to Arrow, the Company, or the Surviving Corporation, as applicable; or (c) would materially and adversely affect the right or ability of Arrow to own the assets or operate the business of the Company.

7.8 FIRPTA Certificate. Arrow shall have received from the Company a form of notice to the Internal Revenue Service in accordance with the requirements of Treasury Regulation Section 1.897-2(h) and in form and substance reasonably acceptable to Arrow along with written authorization for Arrow to deliver such notice form to the Internal Revenue Service on behalf of the Company upon the Closing.

7.9 No Company Material Adverse Effect Since the date of this Agreement, there shall not have occurred any Company Material Adverse Effect that is continuing.

7.10 Closing Date Allocation Schedule. Arrow shall have received from the Company the Company Allocation Schedule which will be accurate and complete in all respects as of the Closing with respect to the number of Company Shares owned by each holder of Company Capital Stock and the number of shares of Arrow Common Stock to be issued to such holder pursuant to the terms of this Agreement upon the Closing.

7.11 Financial Certificate. Arrow shall have received from the Company the Closing Financial Certificate, which will be accurate and complete in all respects as of the Closing.

7.12 Company Liabilities. The liabilities of the Company, other than Company Transaction Expenses, as set forth on the Closing Financial Certificate shall not be more than $1,200,000, which liabilities may be fully discharged in connection with the First Merger Effective Time without prior consent of or notice to the applicable creditor, and without any pre-payment penalty or other similar payment.

Section 8. ADDITIONAL CONDITIONS PRECEDENT TO OBLIGATION OF THE COMPANY

The obligations of the Company to effect the Mergers and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or the written wavier by the Company, at or prior to the Closing, of each of the following conditions:

8.1 Accuracy of Representations. Each of the Arrow Fundamental Representations shall have been true and correct in all respects as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on and as of such date (except to the extent such representations and warranties are specifically made as of a particular date, in which case such representations and warranties shall be true and correct as of such date). Each of the Arrow IP Representations shall have been true and correct in all material respects (without giving effect to any references therein to any Arrow Material Adverse Effect or other materiality qualifications) on and as of the Closing Date with the same force and effect as if made on and as of such date (except to the extent such Arrow IP Representations are specifically made as of a particular date, in which case such Arrow IP Representations shall have been true and correct in all material respects as of such date). The Arrow Capitalization Representations shall have been true and correct in all respects as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on and as of such date, except, in each case, for such inaccuracies which are *de minimis*, individually or in the aggregate and except to the extent such representations and warranties are specifically made as of a particular

date, in which case such representations and warranties shall be true and correct as of such date. The representations and warranties of Arrow and Merger Subs contained in this Agreement (other than the Arrow Fundamental Representations, the Arrow IP Representations, and the Arrow Capitalization Representations) shall have been true and correct as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on the Closing Date except (A) in each case, or in the aggregate, where the failure to be true and correct would not reasonably be expected to have an Arrow Material Adverse Effect (without giving effect to any references therein to any Arrow Material Adverse Effect or other materiality qualifications), or (B) for those representations and warranties which address matters only as of a particular date (which representations shall have been true and correct, subject to the qualifications as set forth in the preceding clause (A), as of such particular date). For the sake of clarity, it is understood that, for purposes of determining the accuracy of the representations and warranties of Arrow, any update of or modification to the Arrow Disclosure Schedule made or purported to have been made after the date of this Agreement shall be disregarded.

8.2 Performance of Covenants. Arrow and Merger Subs shall have performed in all material respects all of their obligations and complied in all material respects with all of their agreements and covenants to be performed or complied with by each of them under this Agreement at or prior to the Second Merger Effective Time.

8.3 Lock-up Agreements. The Company shall have received a copy of a Lock-up Agreement duly executed by each of the Persons listed on Schedule 8.3 hereto, each of which shall be in full force and effect.

8.4 No Other Proceedings. There shall not be pending any Legal Proceeding relating to the Mergers or any of the other Contemplated Transactions which, in the reasonable judgment of the Company, would result in an outcome that is material and adverse to the Company, the Surviving Corporation or Arrow which Legal Proceeding: (a) challenges or seeks to restrain or prohibit the consummation of the Mergers or any of the other Contemplated Transactions; (b) seeks to obtain from Arrow, the Surviving Corporation, or the Company, any damages or other relief that would reasonably be likely to be material to the Surviving Corporation, the Company, or Arrow, as applicable; or (c) would materially and adversely affect the right or ability of Arrow to own the assets or operate the business of the Company following the Closing (any, "***Material Litigation***"); *provided*, *however*, that Material Litigation shall not include any suit, claim, request for relief or proceeding brought by any current or former shareholder of Arrow, either on their own behalf, on behalf of a class or derivatively, for breach of fiduciary duty, or state or federal securities or disclosures laws, relating to the Mergers or the Contemplated Transactions.

8.5 Documents. The Company shall have received the following documents, each of which shall be in full force and effect:

(a) a certificate executed by the Chief Executive Officer and Chief Financial Officer of Arrow confirming that the conditions set forth in Sections 8.1 and 8.2 have been duly satisfied;

(b) certificates of good standing of each of Arrow and Merger Subs in its jurisdiction of organization and the various foreign jurisdictions in which it is qualified, certified charter documents, certificates as to the incumbency of officers and the adoption of resolutions of its board of directors (or sole member, as applicable) authorizing the execution of this Agreement and the consummation of the Contemplated Transactions to be performed by Arrow and Merger Subs hereunder;

(c) written resignations in forms satisfactory to the Company, dated as of the Closing Date and effective as of the Closing executed by the officers and directors of Arrow who are not to continue as officers or directors of Arrow pursuant to Section 5.14 hereof; and

(d) general releases in forms reasonably satisfactory to the Company, effective as of the Closing executed by the officers and directors of Arrow who are not to continue as officers or directors of Arrow pursuant to Section 5.14 hereof.

8.6 Arrow Releases. Arrow for the benefit of itself and its Subsidiaries, including the Surviving Corporation, shall have received general releases in a form reasonably acceptable to Arrow and the Company from each of the individuals listed on Schedule 8.6 from any further rights to receive any compensation or other benefits or other form of payment under any written or oral agreement or arrangement, other than as expressly set forth on Part 8.6 of the Arrow Disclosure Schedule.

8.7 No Arrow Material Adverse Effect. Since the date of this Agreement, there shall not have occurred any Arrow Material Adverse Effect that is continuing.

Section 9. TERMINATION

9.1 Termination. This Agreement may be terminated prior to the First Merger Effective Time (whether before or after adoption of this Agreement by the Company's stockholders and whether before or after approval of the Mergers and issuance of Arrow Common Stock in the Mergers by Arrow's stockholders, unless otherwise specified below):

(a) by mutual written consent of Arrow and the Company duly authorized by the Boards of Directors of Arrow and the Company;

(b) by either Arrow or the Company if the Mergers shall not have been consummated by July 31, 2017; *provided*, *however*, that the right to terminate this Agreement under this Section 9.1(b) shall not be available to the Company, on the one hand, or to Arrow or Merger Subs, on the other hand, if such Party's action or failure to act has been a principal cause of the failure of the Mergers to occur on or before such date and such action or failure to act constitutes a breach of this Agreement, *provided*, *further*, *however*, that, in the event that the waiting period under the HSR Act has not expired, or a request for additional information has been made by any Governmental Authority, or in the event that the SEC has not declared effective under the Securities Act the Registration Statement by such date, then either the Company or Arrow shall be entitled to extend the date for termination of this Agreement pursuant to this Section 9.1(b) for an additional 60 days;

(c) by either Arrow or the Company if a court of competent jurisdiction or other Governmental Body shall have issued a final and nonappealable order, decree or ruling, or shall have taken any other action, having the effect of permanently restraining, enjoining or otherwise prohibiting the Mergers;

(d) by Arrow if the Required Company Stockholder Vote shall not have been obtained within 24 hours of the effectiveness of the Registration Statement; *provided*, *however*, that once the Required Company Stockholder Vote has been obtained, Arrow may not terminate this Agreement pursuant to this Section 9.1(d);

(e) by either Arrow or the Company if (i) the Arrow Stockholders' Meeting (including any adjournments and postponements thereof) shall have been held and completed and Arrow's stockholders shall have taken a final vote on the Mergers and the issuance of shares of Arrow Common Stock in the Mergers and (ii) the Mergers or the issuance of Arrow Common Stock in the Mergers shall not have been approved at the Arrow Stockholders' Meeting (and shall not have been approved at any adjournment or postponement thereof) by the Required Arrow Stockholder Vote; *provided*, *however*, that the right to terminate this Agreement under this Section 9.1(e) shall not be available to Arrow where the failure to obtain the Required Arrow Stockholder Vote shall have been caused by the action or failure to act of Arrow and such action or failure to act constitutes a material breach by Arrow of this Agreement;

(f) by the Company (at any time prior to the approval of the Mergers and the issuance of Arrow Common Stock in the Mergers by the Required Arrow Stockholder Vote) if an Arrow Triggering Event shall have occurred;

(g) by Arrow (at any time prior to the adoption of this Agreement and the approval of the Mergers by the Required Company Stockholder Vote) if a Company Triggering Event shall have occurred;

(h) by the Company, upon a breach of any representation, warranty, covenant or agreement on the part of Arrow or Merger Subs set forth in this Agreement, or if any representation or warranty of Arrow or Merger Subs shall have become inaccurate, in either case such that the conditions set forth in Section 8.1 or Section 8.2 would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become inaccurate *provided* that if such inaccuracy in Arrow's, Merger Sub 1's, or Merger Sub 2's representations and warranties or breach by Arrow or Merger Subs is curable by Arrow or Merger Subs, respectively, then this Agreement shall not terminate pursuant to this Section 9.1(h) as a result of such particular breach or inaccuracy until the earlier of (i) the expiration of a 30 day period commencing upon delivery of written notice from Arrow or Merger Subs to the Company of such breach or inaccuracy and (ii) Arrow or Merger Subs (as applicable) ceasing to exercise commercially reasonable efforts to cure such breach (it being understood that this Agreement shall not terminate pursuant to this Section 9.1(h) as a result of such particular breach or inaccuracy if such breach by Arrow or Merger Subs is cured prior to such termination becoming effective); *provided*, *however*, that, for the sake of clarity, it being understood that breaches of any of the covenants set forth in Section 4.3(a) (a "***Section 4.3(a) Breach***") by Arrow shall not be curable; or

(i) by Arrow, upon a breach of any representation, warranty, covenant or agreement on the part of the Company set forth in this Agreement, or if any representation or warranty of the Company shall have become inaccurate, in either case such that the conditions set forth in Section 7.1 or Section 7.2 would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become inaccurate *provided* that if such inaccuracy in the Company's representations and warranties or breach by the Company is curable by the Company then this Agreement shall not terminate pursuant to this Section 9.1(i) as a result of such particular breach or inaccuracy until the earlier of (i) the expiration of a 30 day period commencing upon delivery of written notice from the Company to Arrow of such breach or inaccuracy and (ii) the Company ceasing to exercise commercially reasonable efforts to cure such breach (it being understood that this Agreement shall not terminate pursuant to this Section 9.1(i) as a result of such particular breach or inaccuracy if such breach by the Company is cured prior to such termination becoming effective); *provided*, *however*, that, for the sake of clarity, it being understood that a Section 4.3(a) Breach by the Company shall not be curable.

The Party desiring to terminate this Agreement pursuant to this Section 9.1 (other than pursuant to Section 9.1(a) or pursuant to a Section 4.3(a) Breach) shall give a notice of such termination to the other Party specifying the provisions hereof pursuant to which such termination is made and the basis therefor described in reasonable detail.

9.2 Effect of Termination. In the event of the termination of this Agreement as provided in Section 9.1, this Agreement shall be of no further force or effect;*provided*, *however*, that (i) this Section 9.2, Section 9.3, and Section 10 shall survive the termination of this Agreement and shall remain in full force and effect, and (ii) the termination of this Agreement shall not relieve any Party for its fraud or from any liability for any willful and material breach of any representation, warranty, covenant, obligation or other provision contained in this Agreement.

9.3 Expenses; Termination Fees.

(a) Except as set forth in this Section 9.3, all fees and expenses incurred in connection with this Agreement and the Contemplated Transactions shall be paid by the Party incurring such expenses, whether or not the Mergers is consummated; *provided*, *however*, subject to the terms and conditions of that certain letter agreement between Arrow and the Company dated November 23, 2016 (the "***Reimbursement Letter***"), Arrow shall be responsible for the Expense Reimbursement, which shall be paid by Arrow by wire transfer of same-day funds within ten Business Days following delivery to Arrow, its Affiliates or its Representatives of an invoice by the Company or its Representatives setting forth the amounts to be reimbursed in accordance with the terms of the Reimbursement Letter; *provided*, *further*, that Arrow shall pay all fees and expenses, including attorneys' and accountants' fees and expenses, incurred in relation to the filings by the Parties under any filing requirement under the HSR Act, any foreign antitrust Legal Requirement, and under the rules and regulations of NASDAQ,

including, such fees and expenses incurred in relation to the printing and filing with the SEC of the Registration Statement (including any financial statements and exhibits) and any amendments or supplements thereto and paid to a financial printer or the SEC, applicable to this Agreement and the Contemplated Transactions. The payment of the Expense Reimbursement shall not relieve Arrow of any obligation to pay any termination fees (if applicable) or Third Party Expenses pursuant to this Section 9.3 (if applicable), each of which, for the sake of clarity, are separate obligations and are not subject to the cap set forth in the Reimbursement Letter.

(b) (i) If this Agreement is terminated by Arrow or the Company pursuant to Section 9.1(e) or by the Company pursuant to Section 9.1(f), and (A) at any time before the Arrow Stockholders' Meeting an Acquisition Proposal with respect to Arrow shall have been publicly announced, disclosed or otherwise communicated to the Arrow Board (and shall not have been withdrawn) and (B) in the event this Agreement is terminated pursuant Section 9.1(e), within 12 months after the date of such termination, Arrow enters into a definitive agreement with respect to a Subsequent Transaction or consummates a Subsequent Transaction, then Arrow shall pay to the Company, within ten Business Days after termination (or, if applicable, concurrent with entry into a definitive agreement or the consummation of a transaction), a nonrefundable fee in an amount equal to $500,000, in addition to any amount payable to the Company pursuant to Section 9.3(c);

(ii) If this Agreement is terminated by Arrow pursuant to Section 9.1(d) or (g), then the Company shall pay to Arrow, within ten Business Days after termination (or, if applicable, concurrent with entry into a definitive agreement or the consummation of a transaction), a nonrefundable fee in an amount equal to $500,000 in addition to any amount payable to Arrow pursuant to Sections 9.3(c);

(iii) If this Agreement is terminated by Arrow due to a Section 4.3(a) Breach by the Company, then the Company shall pay to Arrow within ten Business Days of the termination, a non-refundable amount equal to $1,000,000, in addition to any amount payable to Arrow pursuant to Section 9.3(c); or

(iv) If this Agreement is terminated by the Company due to a Section 4.3(a) Breach by Arrow, then Arrow shall pay to the Company within ten Business Days of the termination, a non-refundable amount equal to $1,000,000, in addition to any amount payable to the Company pursuant to Section 9.3(c).

(c) (i) If this Agreement is terminated by Arrow pursuant to Sections 9.1(d), (g), or (i), the Company shall reimburse Arrow for all reasonable fees and expenses incurred by the Company in connection with this Agreement and the transactions contemplated hereby (such expenses, collectively, the "***Third Party Expenses***") incurred by Arrow up to a maximum of $500,000, by wire transfer of same-day funds within ten Business Days following the date on which Arrow submits to the Company true and correct copies of reasonable documentation supporting such Third Party Expenses; *provided*, *however*, that such Third Party Expenses shall not include any amounts for a financial advisor to Arrow except for reasonably documented out-of-pocket expenses otherwise reimbursable by Arrow to such financial advisor pursuant to the terms of Arrow's engagement letter or similar arrangement with such financial advisor.

(ii) If this Agreement is terminated by the Company pursuant to Section 9.1(f) or (h), then Arrow shall reimburse the Company for all Third Party Expenses incurred by the Company up to a maximum of $500,000 (which amount includes the Expense Reimbursement), by wire transfer of same-day funds within ten Business Days following the date on which the Company submits to Arrow true and correct copies of reasonable documentation supporting such Third Party Expenses; *provided*, *however*, that such Third Party Expenses shall not include any amounts for a financial advisor to the Company except for reasonably documented out-of-pocket expenses otherwise reimbursable by the Company to such financial advisor pursuant to the terms of the Company's engagement letter or similar arrangement with such financial advisor.

(d) If either Party fails to pay when due any amount payable by such Party under Section 9.3(b) or (c), then (i) such Party shall reimburse the other Party for reasonable costs and expenses (including reasonable fees and disbursements of counsel) incurred in connection with the collection of such overdue amount and the

enforcement by the other Party of its rights under this Section 9.3, and (ii) such Party shall pay to the other Party interest on such overdue amount (for the period commencing as of the date such overdue amount was originally required to be paid and ending on the date such overdue amount is actually paid to the other Party in full) at a rate per annum equal to the "prime rate" (as announced by Bank of America or any successor thereto) in effect on the date such overdue amount was originally required to be paid.

(e) The Parties agree that the payment of the fees and expenses set forth in this Section 9.3, subject to Section 9.2, shall be the sole and exclusive remedy of each Party following a termination of this Agreement under the circumstances described in this Section 9.3, it being understood that in no event shall either Arrow or the Company be required to pay fees or damages payable pursuant to this Section 9.3 on more than one occasion. Subject to Section 9.2, the payment of the fees and expenses set forth in this Section 9.3 and Section 10.11, each of the Parties and their respective affiliates (as that term is used in Rule 145 under the Securities Act) shall have no liability, shall not be entitled to bring or maintain any other claim, action or proceeding against the other, shall be precluded from any other remedy against the other, at law or in equity or otherwise, and shall not seek to obtain any recovery, judgment or damages of any kind against the other (or any partner, member, stockholder, director, officer, employee, Subsidiary, affiliate, agent or other representative of such Party) in connection with or arising out of the termination of this Agreement, any breach by any Party giving rise to such termination or the failure of the Mergers and the other Contemplated Transactions to be consummated. Each of the Parties acknowledges that (i) the agreements contained in this Section 9.3 are an integral part of the Contemplated Transactions, (ii) without these agreements, the Parties would not enter into this Agreement and (iii) any amount payable pursuant to this Section 9.3 is not a penalty, but rather is liquidated damages in a reasonable amount that will compensate the Parties in the circumstances in which such amount is payable.

Section 10. MISCELLANEOUS PROVISIONS

10.1 Non-Survival of Representations and Warranties. The representations and warranties of the Company, Arrow and Merger Subs contained in this Agreement or any certificate or instrument delivered pursuant to this Agreement shall terminate at the First Merger Effective Time, and only the covenants that by their terms survive the First Merger Effective Time and this Section 10 shall survive the First Merger Effective Time.

10.2 Amendment. This Agreement may be amended with the approval of the respective boards of directors of the Company, Merger Subs and Arrow at any time (whether before or after the adoption and approval of this Agreement by the Company's stockholders or before or after the approval of issuance of shares of Arrow Common Stock in the First Merger by Arrow's stockholders); *provided*, *however*, that after any such adoption and approval of this Agreement by a Party's stockholders, no amendment shall be made which by law requires further approval of the stockholders of such Party without the further approval of such stockholders. This Agreement may not be amended except by an instrument in writing signed on behalf of each of the Company, Merger Subs and Arrow.

10.3 Waiver.

(a) No failure on the part of any Party to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of any Party in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver of such power, right, privilege or remedy; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.

(b) No Party shall be deemed to have waived any claim arising out of this Agreement, or any power, right, privilege or remedy under this Agreement, unless the waiver of such claim, power, right, privilege or remedy is expressly set forth in a written instrument duly executed and delivered on behalf of such Party; and any such waiver shall not be applicable or have any effect except in the specific instance in which it is given.

10.4 Entire Agreement; Counterparts; Exchanges by Facsimile. This Agreement and the other agreements referred to in this Agreement constitute the entire agreement and supersede all prior agreements and understandings, both written and oral, among or between any of the Parties with respect to the subject matter hereof and thereof; *provided*, *however*, that the Confidentiality Agreement shall not be superseded and shall remain in full force and effect in accordance with its terms. This Agreement may be executed in several counterparts, each of which shall be deemed an original and all of which shall constitute one and the same instrument. The exchange of a fully executed Agreement (in counterparts or otherwise) by all Parties by facsimile or electronic transmission in .PDF format shall be sufficient to bind the Parties to the terms and conditions of this Agreement.

10.5 Applicable Law; Jurisdiction. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of laws. In any action or proceeding between any of the Parties arising out of or relating to this Agreement or any of the Contemplated Transactions, each of the Parties: (a) irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Court of Chancery of the State of Delaware or to the extent such court does not have subject matter jurisdiction, the Superior Court of the State of Delaware or the United States District Court for the District of Delaware, (b) agrees that all claims in respect of such action or proceeding shall be heard and determined exclusively in accordance with clause (a) of this Section 10.5, (c) waives any objection to laying venue in any such action or proceeding in such courts, (d) agrees that such court will be deemed to be a convenient forum, and (e) irrevocably waives the right to trial by jury.

10.6 Attorneys' Fees. In any action at law or suit in equity to enforce this Agreement or the rights of any of the Parties, the prevailing Party in such action or suit (as determined by a court of competent jurisdiction) shall be entitled to receive a reasonable sum for its attorneys' fees and all other reasonable costs and expenses incurred in such action or suit.

10.7 Assignability. This Agreement shall be binding upon, and shall be enforceable by and inure solely to the benefit of, the Parties and their respective successors and assigns; *provided*, *however*, that neither this Agreement nor any of a Party's rights or obligations hereunder may be assigned or delegated by such Party without the prior written consent of the other Party, and any attempted assignment or delegation of this Agreement or any of such rights or obligations by such Party without the other Party's prior written consent shall be void and of no effect.

10.8 Notices. Any notice or other communication required or permitted to be delivered to any Party under this Agreement shall be in writing and shall be deemed properly delivered, given and received when delivered by hand, by registered mail, by courier or express delivery service, email to the address set forth below or by facsimile to the address or facsimile telephone number set forth beneath the name of such Party below (or to such other address, email address or facsimile telephone number as such Party shall have specified in a written notice given to the other Parties):

if to Arrow or Merger Subs:

OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway, Suite 201
Bothell, WA 98011
Telephone: (425) 686-1500
Attention: Chief Executive Officer
Email:

with a copy to (which shall not constitute notice):

Fenwick & West LLP
1191 2nd Avenue, 10th Floor
Seattle, Washington 98101
Telephone: (206) 389-4510
Fax: (206) 389-4511
Attention: Alan Smith
Email: acsmith@fenwick.com

if to the Company:

Achieve Life Science, Inc.
30 Sunnyside Avenue
Mill Valley, California 94941
Telephone: (415) 670-9050
Attention: Chief Executive Officer
Email:

with a copy to (which shall not constitute notice):

Paul Hastings LLP
1117 S. California Avenue
Palo Alto, California 94304
Telephone: (650) 320-1830
Fax: (650) 320-1930
Attention: Rob R. Carlson
Email: robcarlson@paulhastings.com

10.9 Cooperation. Each Party agrees to cooperate fully with the other Party and to execute and deliver such further documents, certificates, agreements and instruments and to take such other actions as may be reasonably requested by the other Party to evidence or reflect the Contemplated Transactions and to carry out the intent and purposes of this Agreement.

10.10 Severability. Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If a final judgment of a court of competent jurisdiction declares that any term or provision of this Agreement is invalid or unenforceable, the Parties agree that the court making such determination shall have the power to limit such term or provision, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the original intent of the Parties with regards to the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. In the event such court does not exercise the power granted to it in the prior sentence, the Parties agree to negotiate in good faith to modify this Agreement so as to effect the original intent of the Parties as closely as possible in an acceptable manner to the end that transactions contemplated hereby are fulfilled to the extent possible.

10.11 Other Remedies; Specific Performance. Except as otherwise provided herein, any and all remedies herein expressly conferred upon a Party will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon such Party, and the exercise by a Party of any one remedy will not preclude the exercise of any other remedy. The Parties agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the Parties shall be entitled to an injunction or injunctions

to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof in any court of the United States or any state having jurisdiction, this being in addition to any other remedy to which they are entitled at law or in equity, and each of the Parties waives any bond, surety or other security that might be required of any other Party with respect thereto.

10.12 No Third Party Beneficiaries. Nothing in this Agreement, express or implied, is intended to or shall confer upon any Person (other than the Parties and the D&O Indemnified Parties to the extent of their respective rights pursuant to Section 5.8) any right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

10.13 Construction.

(a) For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders.

(b) The Parties agree that any rule of construction to the effect that ambiguities are to be resolved against the drafting Party shall not be applied in the construction or interpretation of this Agreement.

(c) As used in this Agreement, the words "include" and "including," and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words "without limitation."

(d) The use of the word "or" shall not be exclusive.

(e) Except as otherwise indicated, all references in this Agreement to "Sections," "Exhibits" and "Schedules" are intended to refer to Sections of this Agreement and Exhibits and Schedules to this Agreement, respectively.

(f) Any reference to legislation or to any provision of any legislation shall include any modification, amendment, re-enactment thereof, any legislative provision substituted therefore and all rules, regulations, and statutory instruments issued or related to such legislations.

(g) The bold-faced headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement.

(h) The Parties agree that the Company Disclosure Schedule or Arrow Disclosure Schedule shall be arranged in parts and subparts corresponding to the numbered and lettered sections and subsections contained in Section 2 or Section 3, respectively. The disclosures in any part or subpart of the Company Disclosure Schedule or the Arrow Disclosure Schedule shall qualify other sections and subsections in Section 2 or Section 3, respectively, to the extent it is readily apparent from a reading of the disclosure that such disclosure is applicable to such other sections and subsections.

(i) Reference to any agreement, document or instrument means such agreement, document or instrument, as well as all addenda, exhibits, schedules or amendments thereto, in each case as amended, modified or restated and in effect from time to time in accordance with the terms thereof.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of the date first above written.

ONCOGENEX PHARMACEUTICALS, INC.

By: /s/ Scott Cormack
Name: Scott Cormack
Title: President and Chief Executive Officer

ASH ACQUISITION SUB, INC.

By: /s/ Scott Cormack
Name: Scott Cormack
Title: Chief Executive Officer

ASH ACQUISITION SUB 2, INC.

By: /s/ Scott Cormack
Name: Scott Cormack
Title: Chief Executive Officer

ACHIEVE LIFE SCIENCE, INC.

By: /s/ Richard Stewart
Name: Richard Stewart
Title: Chairman

[SIGNATURE PAGE TO AGREEMENT AND PLAN OF MERGER AND REORGANIZATION]

EXHIBIT A

CERTAIN DEFINITIONS

a) For purposes of the Agreement (including this Exhibit A):

"***Acquisition Inquiry***" shall mean, with respect to a Party, an inquiry, indication of interest or request for information (other than an inquiry, indication of interest or request for information made or submitted by the Company, on the one hand or Arrow, on the other hand, to the other Party) that could reasonably be expected to lead to an Acquisition Proposal with such Party.

"***Acquisition Proposal***" shall mean, with respect to a Party, any offer or proposal, whether written or oral (other than an offer or proposal made or submitted by or on behalf of the Company or any of its "affiliates" (as that term is used in Rule 145 under the Securities Act), on the one hand, or by or on behalf of Arrow or any of its "affiliates" (as that term is used in Rule 145 under the Securities Act), on the other hand, to the other Party) contemplating or otherwise relating to any Acquisition Transaction with such Party.

"***Acquisition Transaction***" shall mean any transaction or series of transactions involving:

(**a**) any merger, consolidation, amalgamation, share exchange, business combination, issuance of securities, acquisition of securities, reorganization, recapitalization, tender offer, exchange offer or other similar transaction: (i) in which a Party is a constituent corporation; (ii) in which a Person or "group" (as defined in the Exchange Act and the rules promulgated thereunder) of Persons directly or indirectly acquires beneficial or record ownership of securities representing more than 15% of the outstanding securities of any class of voting securities of a Party or any of its Subsidiaries or (iii) in which a Party or any of its Subsidiaries issues securities representing more than 15% of the outstanding securities of any class of voting securities of such Party or any of its Subsidiaries;

(**b**) any sale, lease, exchange, transfer, license, acquisition or disposition of any business or businesses or assets that constitute or account for 15% or more of the consolidated book value or the fair market value of the assets of a Party and its Subsidiaries, taken as a whole; or

(**c**) any liquidation or dissolution of a Party.

Notwithstanding the foregoing, with respect to Arrow, in no event shall a term sheet for a Partnering Agreement (as such term is defined in the CVR Agreement) or a Partnering Agreement (each, an "***Apatorsen Transaction***") be deemed an Acquisition Transaction.

"***Agreement***" shall mean the Agreement and Plan of Merger and Reorganization to which this Exhibit A is attached, as it may be amended from time to time.

"***Arrow Affiliate***" shall mean any Person that is (or at any relevant time was) under common control with Arrow within the meaning of Sections 414(b), (c), (m) and (o) of the Code, and the regulations issued thereunder.

"***Arrow Associate***" shall mean any current or former employee, independent contractor, officer or director of Arrow or any Arrow Affiliate.

"***Arrow Board***" shall mean the board of directors of Arrow.

"***Arrow Capitalization Representations***" shall mean the representations and warranties of Arrow and Merger Subs set forth in the first sentence of Section 3.6(a) and Section 3.6(d).

"***Arrow Closing Price***" means the volume weighted average trading price of a share of Arrow Common Stock on NASDAQ for the five trading days ending the trading day immediately prior to the date upon which the First Merger becomes effective.

"***Arrow Common Stock***" shall mean the Common Stock, $0.001 par value per share, of Arrow.

"***Arrow Contract***" shall mean any Contract: (a) to which Arrow or OTI is a party; (b) by which Arrow, OTI or any Arrow IP Rights or any other asset of Arrow or OTI is or may become bound or under which Arrow or OTI has, or may become subject to, any obligation; or (c) under which Arrow or OTI has or may acquire any right or interest.

"***Arrow Fundamental Representations***" shall mean the representations and warranties of Arrow and Merger Subs set forth in Sections 3.1(a), 3.1(b), 3.3, 3.4, and 3.21.

"***Arrow IP Representations***" shall mean the representations and warranties of Arrow and Merger Subs set forth in Section 3.12.

"***Arrow IP Rights***" shall mean all Intellectual Property owned, licensed, or controlled by Arrow or its Subsidiaries that is necessary or used in the business of Arrow and its Subsidiaries as presently conducted.

"***Arrow IP Rights Agreement***" shall mean any instrument or agreement governing, related or pertaining to any Intellectual Property owned, licensed, or controlled by Arrow or its Subsidiaries.

"***Arrow Material Adverse Effect***" shall mean any Effect that, considered together with all other Effects that had occurred prior to the date of determination of the occurrence of the Arrow Material Adverse Effect, has or would reasonably be expected to have a material adverse effect on: the business, financial condition, assets, liabilities or results of operations of Arrow, OTI and Merger Subs, taken as a whole; *provided*, *however*, that none of the following shall be taken into account in determining whether there has been an Arrow Material Adverse Effect: (a) the existence of actual litigation itself (but for the avoidance of doubt, not the facts or circumstances underlying such litigation), arising from allegations of a breach of a fiduciary duty relating to this Agreement, (b) the termination, sublease or assignment of Arrow's facility lease, or failure to do the foregoing, (c) any Effect resulting from the announcement or pendency of the Mergers or the Contemplated Transactions, (d) any change in the stock price or trading volume of Arrow (provided that, subject to the provisions of this definition, the underlying causes of such changes or failures may be considered in determining whether there has been or would reasonably be expected to be an Arrow Material Adverse Effect), (e) any act or threat of terrorism or war anywhere in the world, any armed hostilities or terrorist activities anywhere in the world, any threat or escalation or armed hostilities or terrorist activities anywhere in the world or any governmental or other response or reaction to any of the foregoing, (f) any change in accounting requirements or principles or any change in applicable laws, rules or regulations or the interpretation thereof, or (g) any Effect in general economic or political conditions or in the industries in which Arrow operates (but only, in each case, to the extent such changes do not, individually or in the aggregate, have a disproportionate impact on Arrow, taken as a whole, relative to other Persons in similar businesses).

"***Arrow Options***" shall mean options or other rights to purchase shares of Arrow Common Stock issued by Arrow.

"***Arrow Registered IP***" shall mean all Arrow IP Rights that are registered, filed or issued under the authority of, with or by any Governmental Body, including all patents, registered copyrights and registered trademarks and all applications for any of the foregoing.

"***Arrow Reverse Stock Split***" shall mean a reverse stock split of Arrow Common Stock not to exceed a combination of 10 for 1 that the Arrow Board (in consultation with the Company Board) determines is necessary or advisable in order for the Arrow Common Stock to satisfy one or more of the requirements for qualifying the Arrow Common Stock for quotation on NASDAQ and in compliance with the terms of this Agreement, the Mergers and the Contemplated Transactions.

"***Arrow Triggering Event***" shall be deemed to have occurred if: (a) Arrow shall have failed to include in the Registration Statement the Arrow Board Recommendation; (b) the Arrow Board shall have approved, endorsed or recommended any Acquisition Proposal; (c) Arrow shall have entered into any letter of intent or similar document or any Contract relating to any Acquisition Proposal (other than a confidentiality agreement permitted pursuant to Section 4.3); or (d) Arrow or any director or officer of Arrow shall have willfully and intentionally breached the provisions set forth in Section 4.3 of the Agreement.

"***Arrow Unaudited Interim Balance Sheet***" shall mean the unaudited balance sheet of Arrow as of September 30, 2016, included in Arrow's Report on Form 10-Q for the fiscal quarter ended September 30, 2016, as filed with the SEC.

"***Business Day***" shall mean any day other than a day on which banks in the State of New York or the State of California are authorized or obligated to be closed.

"***Buyer Parties***" means Arrow, OTI, Merger Sub 1, and Merger Sub 2.

"***Closing Financial Certificate***" shall mean a certificate executed by the chief executive officer of the Company dated as of the Closing Date, certifying, as of the Closing, the Company's balance sheet prepared in accordance with GAAP.

"***COBRA***" means the Consolidated Omnibus Budget Reconciliation Act of 1985, as set forth in Section 4980B of the Code and Part 6 of Title I of ERISA.

"***Code***" shall mean the Internal Revenue Code of 1986.

"***Company Affiliate***" shall mean any Person that is (or at any relevant time was) under common control with the Company within the meaning of Sections 414(b), (c), (m) and (o) of the Code, and the regulations issued thereunder.

"***Company Associate***" shall mean any current or former employee, independent contractor, officer or director of the Company or any Company Affiliate.

"***Company Board***" shall mean the board of directors of the Company.

"***Company Capital Stock***" shall mean the Company Common Stock.

"***Company Capitalization Representations***" shall mean the representations and warranties of the Company set forth in the first sentence of Section 2.6(a), and Section 2.6(d).

"***Company Common Stock***" shall mean the Common Stock, $0.01 par value per share, of the Company.

"***Company Contract***" shall mean any Contract: (a) to which the Company or any of its Subsidiaries is a Party; (b) by which the Company or any of its Subsidiaries or any Company IP Rights or any other asset of the Company or its Subsidiaries is or may become bound or under which the Company or any of its Subsidiaries has, or may become subject to, any obligation; or (c) under which the Company or any of its Subsidiaries has or may acquire any right or interest.

"***Company Equity Awards***" shall mean options or other rights to purchase shares of Company Capital Stock issued by the Company.

"***Company Fully-Diluted Shares***" shall mean the total number of issued Company Shares as of the date hereof plus the total number of shares of Company Common Stock issuable upon the exercise of all issued and outstanding Company Equity Awards as of the date hereof.

"***Company Fundamental Representations***" shall mean the representations and warranties of the Company set forth in Sections 2.1(a), 2.1(b), 2.3, 2.4, and 2.20.

"***Company Interim Balance Sheet***" shall mean the unaudited consolidated balance sheet of the Company and its consolidated Subsidiaries as of March 31, 2016 provided to Arrow prior to the date of this Agreement.

"***Company IP Representations***" shall mean the representations and warranties of the Company set forth in Section 2.12.

"***Company IP Rights***" shall mean all Intellectual Property owned, licensed, or controlled by the Company or its Subsidiaries that is necessary or used in the business of the Company and its Subsidiaries as presently conducted.

"***Company IP Rights Agreement***" shall mean any instrument or agreement governing, related or pertaining to any the Company IP Rights.

"***Company Material Adverse Effect***" shall mean any Effect that, considered together with all other Effects that had occurred prior to the date of determination of the occurrence of a Company Material Adverse Effect, has or would reasonably be expected to have a material adverse effect on the business, financial condition, assets, liabilities or results of operations of the Company and its Subsidiaries taken as a whole; *provided*, *however*, that none of the following shall be taken into account in determining whether there has been a Company Material Adverse Effect: (a) any rejection by a Governmental Body of a registration or filing by the Company relating to the Company IP Rights; (b) any Effect resulting from the announcement or pendency of the Mergers or the Contemplated Transactions; (c) any act or threat of terrorism or war anywhere in the world, any armed hostilities or terrorist activities anywhere in the world, any threat or escalation or armed hostilities or terrorist activities anywhere in the world or any governmental or other response or reaction to any of the foregoing; (d) any change in accounting requirements or principles or any change in applicable laws, rules or regulations or the interpretation thereof; or (e) any Effect in general economic or political conditions or in the industries in which the Company operates.

"***Company Registered IP***" shall mean all Company IP Rights that are registered, filed or issued under the authority of, with or by any Governmental Body, including all patents, registered copyrights and registered trademarks and all applications for any of the foregoing.

"***Company Transaction Expenses***" shall mean the sum of (i) the cash cost of any unpaid change of control payments or severance payments that are or become due to any employee of the Company in connection with the consummation of the Contemplated Transactions, (ii) the cash cost of any accrued and unpaid retention payments due to any employee of the Company as of the Closing Date and (iii) any remaining unpaid fees and expenses as of such date for which the Company is liable incurred by the Company in connection with this Agreement and the Contemplated Transactions or otherwise.

"***Company Triggering Event***" shall be deemed to have occurred if: (a) the Company shall have failed to include in the Information Statement the Company Board Recommendation; (b) the Company Board shall have approved, endorsed or recommended any Acquisition Proposal; (c) the Company shall have entered into any letter of intent or similar document or any Contract relating to any Acquisition Proposal (other than a confidentiality agreement permitted pursuant to Section 4.3); or (d) the Company or any director or officer agent of the Company shall have willfully and intentionally breached the provisions set forth in Section 4.3 of the Agreement.

"***Confidentiality Agreement***" shall mean the Confidentiality Agreement dated February 19, 2016, between the Company and Arrow.

"***Consent***" shall mean any approval, consent, ratification, permission, waiver or authorization (including any Governmental Authorization).

"***Contemplated Transactions***" shall mean the Mergers and the other transactions and actions contemplated by the Agreement.

"***Contract***" shall, with respect to any Person, mean any written agreement, contract, subcontract, lease (whether real or personal property), mortgage, understanding, arrangement, instrument, note, option, warranty, purchase order, license, sublicense, insurance policy, benefit plan or legally binding commitment or undertaking of any nature to which such Person is a party or by which such Person or any of its assets are bound or affected under applicable law.

"***DGCL***" shall mean the General Corporation Law of the State of Delaware.

"***Dissenting Shares***" means any shares of Company Capital Stock that are issued and outstanding immediately prior to the First Merger Effective Time and in respect of which appraisal or dissenters' rights shall have been perfected, and not waived, withdrawn or lost, in accordance with the DGCL, in connection with the First Merger.

"***Effect***" shall mean any effect, change, event, circumstance, or development.

"***Encumbrance***" shall mean any lien, pledge, hypothecation, charge, mortgage, security interest, encumbrance, claim, infringement, interference, option, right of first refusal, preemptive right, community property interest or restriction of any nature (including any restriction on the voting of any security, any restriction on the transfer of any security or other asset, any restriction on the receipt of any income derived from any asset, any restriction on the use of any asset and any restriction on the possession, exercise or transfer of any other attribute of ownership of any asset).

"***Enforceability Exceptions***" means the (i) laws of general application relating to bankruptcy, insolvency and the relief of debtors; and (ii) rules of law governing specific performance, injunctive relief and other equitable remedies.

"***Entity***" shall mean any corporation (including any non-profit corporation), partnership (including any general partnership, limited partnership or limited liability partnership), joint venture, estate, trust, company (including any company limited by shares, limited liability company or joint stock company), firm, society or other enterprise, association, organization or entity, and each of its successors.

"***Environmental Law***" means any federal, state, local or foreign Legal Requirement relating to pollution or protection of human health or the environment (including ambient air, surface water, ground water, land surface or subsurface strata), including any law or regulation relating to emissions, discharges, releases or threatened releases of Hazardous Materials, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials.

"***ERISA***" shall mean the Employee Retirement Income Security Act of 1974, as amended.

"***Exchange Act***" shall mean the Securities Exchange Act of 1934, as amended.

"***Exchange Ratio***" shall mean 4,242.8904; *provided*, that, to the extent (i) the total Company Fully-Diluted Shares as of the First Effective Time (expressed on an as-converted to Company Common Stock basis) is greater or less than the Company Fully-Diluted Shares as of the date hereof or (ii) the total number of issued and outstanding shares of Arrow Common Stock (the "***Arrow Outstanding Shares***") as of the First Effective Time is greater or less than the Arrow Outstanding Shares as of the date hereof, the Exchange Ratio shall be decreased or

increased, as applicable, such that, immediately following the Effective Time, (a) 25% of the outstanding shares of Common Stock of Arrow shall be held by the Persons who were holders of Arrow Common Stock immediately prior to the First Effective Time and (b) 75% of the outstanding shares of Common Stock of Arrow shall be held by the Persons who were holders of Company Common Stock immediately prior to the First Effective Time.

"***Expense Reimbursement***" shall mean any reimbursement to the Company and its Affiliates pursuant to the Reimbursement Letter.

"***Governmental Authority***" means any court or tribunal, governmental, quasi-governmental or regulatory body, administrative agency or bureau, commission or authority or other body exercising similar powers or authority.

"***Governmental Authorization***" shall mean any: (a) permit, license, certificate, franchise, permission, variance, exceptions, orders, clearance, registration, qualification or authorization issued, granted, given or otherwise made available by or under the authority of any Governmental Body or pursuant to any Legal Requirement; or (b) right under any Contract with any Governmental Body.

"***Governmental Body***" shall mean any: (a) nation, state, commonwealth, province, territory, county, municipality, district or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign or other government; (c) governmental or quasi-Governmental Authority of any nature (including any governmental division, department, agency, commission, instrumentality, official, ministry, fund, foundation, center, organization, unit, body or Entity and any court or other tribunal, and for the avoidance of doubt, any Taxing authority); or (d) self-regulatory organization (including NASDAQ).

"***Hazardous Materials***" shall mean any pollutant, chemical, substance and any toxic, infectious, carcinogenic, reactive, corrosive, ignitable or flammable chemical, or chemical compound, or hazardous substance, material or waste, whether solid, liquid or gas, that is subject to regulation, control or remediation under any Environmental Law, including without limitation, crude oil or any fraction thereof, and petroleum products or by-products.

"***HSR Act***" shall mean the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended.

"***Information Statement***" shall mean the information statement to be sent to the Company's stockholders in connection with the approval of this Agreement and the Mergers.

"***Intellectual Property***" shall mean all intellectual property and other similar proprietary rights in any jurisdiction, whether registered or not, including such rights in and to: (a) United States, foreign and international patents (including all reissues, divisions, provisionals, continuations, continuations-in-part, re-examinations, renewals, substitutions and extensions thereof), patent applications, including provisional applications, statutory invention registrations, invention disclosures and inventions, and other patent rights, (b) trademarks, service marks, trade names, business names, brand names, trade dress, logos and other source identifiers together with all goodwill associated therewith, including registrations and applications for registration and renewals thereof (collectively, "***Trademarks***"), (c) copyrights, works of authorship (whether or not copyrightable), designs, design registrations, database rights, including registrations and applications for registration and renewals thereof, and (d) trade secrets and trade secret rights arising under common law, state law, federal law or laws of foreign countries, in each case to the extent any such trade secrets derive economic value (actual or potential) from not being generally known to other persons who can obtain economic value from its disclosure or use (collectively, "***Trade Secrets***").

"***Key Employee***" shall mean, with respect to the Company or Arrow, an executive officer or any employee that reports directly to the board of directors or Chief Executive Officer or Chief Operating Officer.

"***Knowledge***" means, with respect to an individual, that such individual is actually aware of the relevant fact or such individual would reasonably be expected to know such fact in the ordinary course of the performance of the individual's employee or professional responsibility or following reasonable investigation of the subject matter presented. Any Person that is an Entity shall have Knowledge if any officer of such Person as of the date such knowledge is imputed has Knowledge of such fact or other matter.

"***Legal Proceeding***" shall mean any action, suit, litigation, arbitration, proceeding (including any civil, criminal, administrative, investigative or appellate proceeding), hearing, inquiry, audit, examination or investigation commenced, brought, conducted or heard by or before, or otherwise involving, any court or other Governmental Body or any arbitrator or arbitration panel.

"***Legal Requirement***" shall mean any federal, state, foreign, material local or municipal or other law, statute, constitution, principle of common law, resolution, ordinance, code, edict, decree, rule, regulation, ruling or requirement issued, enacted, adopted, promulgated, implemented or otherwise put into effect by or under the authority of any Governmental Body (or under the authority of NASDAQ or the Financial Industry Regulatory Authority).

"***Merger Sub 1 Board***" shall mean the board of directors of Merger Sub 1.

"***Merger Sub 2 Board***" shall mean the board of directors of Merger Sub 2.

"***Multiemployer Plan***" shall mean (a) a "multiemployer plan," as defined in Section 3(37) or 4001(a)(3) of ERISA, or (b) a plan which if maintained or administered in or otherwise subject to the laws of the United States would be described in paragraph (a).

"***Multiple Employer Plan***" shall mean (a) a "multiple employer plan" within the meaning of Section 413(c) of the Code or Section 3(40) of ERISA, or (b) a plan which if maintained or administered in or otherwise subject to the laws of the United States would be described in paragraph (a).

"***NASDAQ***" shall mean The NASDAQ Capital Market.

"***Ordinary Course of Business***" shall mean, in the case of each of the Company and Arrow, such actions taken in the ordinary course of its normal operations and consistent with its past practices; *provided*, in the case of Arrow, "Ordinary Course of Business" shall also include any actions set forth in the Wind-Down Plan.

"***Organizational Documents***" means, with respect to any Person (other than an individual), (a) the certificate or articles of association or incorporation or organization or limited partnership or limited liability company, and any joint venture, limited liability company, operating or partnership agreement and other similar documents adopted or filed in connection with the creation, formation or organization of such Person and (b) all by-laws, regulations and similar documents or agreements relating to the organization or governance of such Person, in each case, as amended or supplemented.

"***Party***" or "***Parties***" shall mean the Company, Merger Sub 1, Merger Sub 2, OTI and Arrow.

"***Permitted Encumbrance***" shall mean: (a) any liens for current Taxes not yet due and payable or for Taxes that are being contested in good faith and for which adequate reserves have been made on the Company Interim Balance Sheet or the Arrow Unaudited Interim Balance Sheet, as applicable; (b) minor liens that have arisen in the Ordinary Course of Business and that do not (in any case or in the aggregate) materially detract from the value of the assets subject thereto or materially impair the operations of the Company or any of its Subsidiaries or Arrow, as applicable.

"***Person***" shall mean any individual, Entity or Governmental Body.

"***Personal Data***" shall mean (a) a natural person's name, street address, telephone number, e-mail address, photograph, Social Security number or tax identification number, driver's license number, passport number, credit card number, bank information uniquely associated with such natural person, or customer or account number, biometric identifiers (including without limitation video or photographic images, fingerprints, and voice biometric data relating to individuals), health-related information or data uniquely associated with such natural person, or any other piece of information that allows the location of, identification of, or contact with a specific natural person; (b) any other information if such information is defined as "personal data", "personally identifiable information", "individually identifiable health information," or "personal information" under any applicable Legal Requirement; and (c) any information that is uniquely associated, directly or indirectly (by, for example, records linked via unique keys), with any of the foregoing.

"***Proxy Statement***" shall mean the proxy statement to be sent to Arrow's stockholders in connection with the Arrow Stockholders' Meeting.

"***Registration Statement***" shall mean the registration statement on Form S-4 (or any other applicable form under the Securities Act to register Arrow Common Stock) to be filed with the SEC by Arrow registering the public offering and sale of Arrow Common Stock to some or all holders of Company Capital Stock in the First Merger, as such registration statement may be amended prior to the time it is declared effective by the SEC.

"***Representatives***" shall mean directors, officers, employees, agents, attorneys, accountants, investment bankers, advisors and representatives.

"***Sarbanes-Oxley Act***" shall mean the Sarbanes-Oxley Act of 2002.

"***SEC***" shall mean the United States Securities and Exchange Commission.

"***Securities Act***" shall mean the Securities Act of 1933, as amended.

"***Subsequent Transaction***" shall mean any Acquisition Transaction that results or would result in any third party beneficially owning securities of a Party representing more than 50% of the voting power of the outstanding securities of a Party or owning or exclusively licensing tangible or intangible assets representing more than 50% of the fair market value of the assets of a Party and its Subsidiaries, taken as a whole.

An entity shall be deemed to be a "***Subsidiary***" of another Person if such Person directly or indirectly owns or purports to own, beneficially or of record, (a) an amount of voting securities of other interests in such entity that is sufficient to enable such Person to elect at least a majority of the members of such entity's board of directors or other governing body, or (b) at least 50% of the outstanding equity, voting, beneficial or financial interests in such Entity.

"***Superior Offer***" shall mean an unsolicited bona fide written offer by a third party to enter into (i) a merger, consolidation, amalgamation, share exchange, business combination, issuance of securities, acquisition of securities, reorganization, recapitalization, tender offer, exchange offer or other similar transaction as a result of which either (A) the Party's stockholders prior to such transaction in the aggregate cease to own at least 50% of the voting securities of the entity surviving or resulting from such transaction (or the ultimate parent entity thereof) or (B) in which a Person or "group" (as defined in the Exchange Act and the rules promulgated thereunder) directly or indirectly acquires beneficial or record ownership of securities representing 50% or more of the Party's capital stock or (ii) a sale, lease, exchange transfer, license, acquisition or disposition of any business or other disposition of at least 50% of the assets of the Party or its Subsidiaries, taken as a whole, in a single transaction or a series of related transactions that: (a) was not obtained or made as a direct or indirect result of a breach of (or in violation of) this Agreement; and (b) is on terms and conditions that the Arrow Board or the Company Board, as applicable, determines in good faith, after obtaining and taking into account such matters that it deems relevant following consultation with its outside legal counsel and financial advisor, if any: (x) is

reasonably likely to be more favorable, from a financial point of view, to Arrow's stockholders or the Company's stockholders, as applicable, than the terms of the Mergers; and (y) is reasonably capable of being consummated; *provided*, *however*, that any such offer shall not be deemed to be a "Superior Offer" if any financing required to consummate the transaction contemplated by such offer is not committed and is not reasonably capable of being obtained by such third party, or if the consummation of such transaction is contingent on any such financing being obtained.

"***Tax***" shall mean any federal, state, local, foreign or other tax, including any income tax, franchise tax, capital gains tax, gross receipts tax, value-added tax, surtax, estimated tax, unemployment tax, national health insurance tax, escheat, environmental, excise tax, ad valorem tax, transfer tax, stamp tax, sales tax, use tax, property tax, business tax, withholding tax, payroll tax, customs duty, alternative or add-on minimum or other tax of any kind whatsoever, and including any fine, penalty, addition to tax or interest, whether disputed or not.

"***Tax Act***" shall mean the *Income Tax Act* (Canada), as amended or supplemented from time to time.

"***Tax Return***" shall mean any return (including any information return), report, statement, declaration, estimate, schedule, notice, notification, form, election, certificate or other document or information, and any amendment or supplement to any of the foregoing, filed with or submitted to, or required to be filed with or submitted to, any Governmental Body in connection with the determination, assessment, collection or payment of any Tax or in connection with the administration, implementation or enforcement of or compliance with any Legal Requirement relating to any Tax.

"***Treasury Regulations***" shall mean the United States Treasury regulations promulgated under the Code.

"***Wind-Down Plan***" shall mean the written plan set forth on **Schedule B**, for the wind-down of certain operations of Arrow and its Subsidiaries.

b) Each of the following terms is defined in the Section set forth opposite such term:

Term	Section
409A Plan	3.17(q)
Agreement	Exhibit A
Acquisition Inquiry	Exhibit A
Acquisition Proposal	Exhibit A
Acquisition Transaction	Exhibit A
Apatorsen Transaction	Exhibit A
Arrow	Preamble
Arrow Affiliate	Exhibit A
Arrow Associate	Exhibit A
Arrow Board	Exhibit A
Arrow Board Recommendation	5.3(b)
Arrow Capitalization Representations	Exhibit A
Arrow Closing Price	Exhibit A
Arrow Common Stock	Exhibit A
Arrow Contract	Exhibit A
Arrow Disclosure Schedule	3
Arrow Employee Plan	3.17(e)
Arrow Fundamental Representations	Exhibit A
Arrow IP Representations	Exhibit A
Arrow IP Rights	Exhibit A
Arrow IP Rights Agreement	Exhibit A
Arrow Material Adverse Effect	Exhibit A

Term	Section
Arrow Material Contract	3.13
Arrow Options	Exhibit A
Arrow Permits	3.14(b)
Arrow Product Candidates	3.14(d)
Arrow Real Estate Leases	3.11
Arrow Registered IP	
Arrow Regulatory Permits	3.14(d)
Arrow Reverse Stock Split	Exhibit A
Arrow SEC Documents	3.7(a)
Arrow Stock Plans	3.6(b)
Arrow Stockholders' Meeting	5.3(a)
Arrow Stockholder Support Agreements	Recitals
Arrow Triggering Event	Exhibit A
Arrow Unaudited Interim Balance Sheet	Exhibit A
Business Day	Exhibit A
Buyer Parties	Exhibit A
Capitalization Date	3.6(a)
Certifications	3.7(a)
Closing	1.4
Closing Date	1.4
COBRA	Exhibit A
Code	Exhibit A
Company	Preamble
Company 409A Plan	2.17(p)
Company Affiliate	Exhibit A
Company Allocation Schedule	1.12(b)
Company Associate	Exhibit A
Company Board	Exhibit A
Company Board Recommendation	5.2(b)
Company Capital Stock	Exhibit A
Company Capitalization Representations	Exhibit A
Company Common Stock	Exhibit A
Company Contract	Exhibit A
Company Disclosure Schedule	2
Company Employee Plan	2.17(e)
Company Equity Awards	Exhibit A
Company Financials	2.7(a)
Company Fully-Diluted Shares	Exhibit A
Company Fundamental Representations	Exhibit A
Company Interim Balance Sheet	Exhibit A
Company IP Representations	Exhibit A
Company IP Rights	Exhibit A
Company IP Rights Agreement	Exhibit A
Company Material Adverse Effect	Exhibit A
Company Material Contract	2.13
Company Permits	2.14(b)
Company Product Candidates	2.14(d)
Company Real Estate Leases	2.11
Company Registered IP	Exhibit A
Company Regulatory Permits	2.14(d)
Company Stock Certificate	1.11

Term	Section
Company Stockholder Support Agreements	Recitals
Company Stockholder Written Consent	5.2(a)
Company Transaction Expenses	Exhibit A
Company Triggering Event	Exhibit A
Confidentiality Agreement	Exhibit A
Consent	Exhibit A
Contemplated Transactions	Exhibit A
Contract	Exhibit A
CVR Agreement	Recitals
D&O Indemnified Parties	5.8(a)
Dissenting Shares	Exhibit A
DGCL	Exhibit A
Drug Regulatory Agency	2.14(c)
Effect	Exhibit A
EMA	2.14(c)
Encumbrance	Exhibit A
Enforceability Exceptions	Exhibit A
Entity	Exhibit A
Environmental Law	Exhibit A
ERISA	Exhibit A
Exchange Act	Exhibit A
Exchange Agent	1.12(a)
Exchange Fund	1.12(a)
Exchange Ratio	Exhibit A
Existing Company D&O Policies	2.19(b)
Existing Arrow D&O Policies	3.19(b)
Expense Reimbursement	Exhibit A
FDA	2.14(c)
FDCA	2.14(c)
First Certificate of Merger	1.4
First Merger	Recitals
First Merger Effective Time	1.4
GAAP	2.7(a)
Governmental Authority	Exhibit A
Governmental Authorization	Exhibit A
Governmental Body	Exhibit A
Hazardous Materials	Exhibit A
HSR Act	Exhibit A
Information Statement	Exhibit A
Initial Surviving Corporation	Recitals
Intellectual Property	Exhibit A
Intended Tax Treatment	Recitals
Key Employee	Exhibit A
Knowledge	Exhibit A
Legal Proceeding	Exhibit A
Legal Requirement	Exhibit A
Liability	3.9
Lock-up Agreement	7.5
Material Litigation	8.4
Merger Sub 1	Preamble
Merger Sub 1 Board	Exhibit A

Term	Section
Merger Sub 1 Common Stock	1.9(d)
Merger Sub 2	Preamble
Merger Sub 2 Board	Exhibit A
Merger Subs	Preamble
Mergers	Recitals
Multiemployer Plan	Exhibit A
Multiple Employer Plan	Exhibit A
NASDAQ	Exhibit A
Ordinary Course of Business	Exhibit A
Organizational Documents	Exhibit A
OTI	3.1(a)
Parties	Exhibit A
Party	Exhibit A
Permitted Encumbrance	Exhibit A
Person	Exhibit A
Personal Data	Exhibit A
Pre-Closing Period	4.1(a)
Proxy Statement	Exhibit A
Registration Statement	Exhibit A
Reimbursement Letter	9.3(a)
Related Tax Person	5.12(c)
Representatives	Exhibit A
Required Company Stockholder Vote	2.4
Required Arrow Stockholder Vote	3.4
Sarbanes-Oxley Act	Exhibit A
SEC	Exhibit A
Second Certificate of Merger	1.4
Second Merger	Recitals
Second Merger Effective Time	1.4
Section 4.3(a) Breach	9.1(h)
Securities Act	Exhibit A
Selected Directors	5.14
Subsequent Transaction	Exhibit A
Subsidiary	Exhibit A
Superior Offer	Exhibit A
Surviving Corporation	Recitals
Tax	Exhibit A
Tax Act	Exhibit A
Tax Return	Exhibit A
Third Party Expenses	9.3(c)
Transfer Taxes	5.12(e)
Treasury Regulations	Exhibit A
Wind-Down Plan	Exhibit A

ANNEX B

FORM OF CERTIFICATE OF AMENDMENT OF
SECOND AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF
ONCOGENEX PHARMACEUTICALS, INC.

OncoGenex Pharmaceuticals, Inc., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "**Corporation**"), DOES HEREBY CERTIFY:

FIRST: The name of the corporation is OncoGenex Pharmaceuticals, Inc. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of Delaware on March 22, 1995 under the name Sonus Pharmaceuticals, Inc.

SECOND: The Amendment of the Second Amended and Restated Certificate of Incorporation of the Corporation in the form set forth in the following resolution has been duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware by the directors and stockholders of the Corporation:

RESOLVED, the Second Amended and Restated Certificate of Incorporation as presently in effect be, and the same hereby is, amended to add the following two paragraphs to precede the first paragraph of Exhibit A, Article IV of the Second Amended and Restated Certificate of Incorporation of the Corporation:

"Contingent and effective upon the filing of this Certificate of Amendment to the Second Amended Restated Certificate of Incorporation (the "Certificate of Amendment"), each [ ] ([ ]) shares of the Corporation's Common Stock, par value $0.001 per share (the "Common Stock"), issued and outstanding prior to the effective time shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value $0.001 per share, of the Corporation (the "Reverse Split"). No fractional share shall be issued in connection with the foregoing combination of the shares pursuant to the Reverse Split. The Corporation will pay in cash the fair value of such fractional shares, without interest and as determined in good faith by the Board of Directors of the Corporation when those entitled to receive such fractional shares are determined.

The Reverse Split shall occur automatically without any further action by the holders of Common Stock, and whether or not the certificates representing such shares have been surrendered to the Corporation; provided, however, that the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable as a result of the Reverse Split unless the existing certificates evidencing the applicable shares of stock prior to the Reverse Split are either delivered to the Corporation, or the holder notifies the Corporation that such certificates have been lost, stolen or destroyed, and executes an agreement satisfactory to the Corporation to indemnify the Corporation from any loss incurred by it in connection with such certificates."

THIRD: The Certificate of Amendment of the Second Amended and Restated Certificate of Incorporation so adopted reads in full as set forth above and is hereby incorporated herein by this reference. All other provisions of the Amended and Restated Certificate of Incorporation remain in full force and effect.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed by its Chief Executive Officer this day of , 2017.

ONCOGENEX PHARMACEUTICALS, INC.

By: _____
Scott Cormack, Chief Executive Officer

ANNEX C

FORM OF CERTIFICATE OF AMENDMENT OF
SECOND AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF
ONCOGENEX PHARMACEUTICALS, INC.

OncoGenex Pharmaceuticals, Inc., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "***Corporation***"), DOES HEREBY CERTIFY:

FIRST: The name of the corporation is OncoGenex Pharmaceuticals, Inc. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of Delaware on March 22, 1995 under the name Sonus Pharmaceuticals, Inc.

SECOND: The Amendment of the Second Amended and Restated Certificate of Incorporation of the Corporation in the form set forth in the following resolution has been duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware by the directors and stockholders of the Corporation:

RESOLVED, that Exhibit A, Article I of the Second Amended and Restated Certificate of Incorporation as presently in effect be, and the same hereby is, amended and restated to read in its entirety as follows:

The name of this corporation is Achieve Life Sciences, Inc.

THIRD: The Certificate of Amendment of the Second Amended and Restated Certificate of Incorporation so adopted reads in full as set forth above and is hereby incorporated herein by this reference. All other provisions of the Second Amended and Restated Certificate of Incorporation remain in full force and effect.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed by its Chief Executive Officer this day of , 2017.

ONCOGENEX PHARMACEUTICALS, INC.

By: _____
Richard Stewart, Chief Executive Officer

ANNEX D
OPINION LETTER OF MTS SECURITIES, LLC

MTS SECURITIES, LLC

January 5, 2017

Board of Directors
OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway
Bothell, Washington 98011

Members of the Board of Directors:

We understand that OncoGenex Pharmaceuticals, Inc., a Delaware corporation (the "Company"), proposes to enter into an Agreement and Plan of Merger and Reorganization, expected to be dated as of January 5, 2017 (the "Merger Agreement"), by and among the Company, Ash Acquisition Sub, Inc., a Delaware corporation ("Merger Sub 1"), Ash Acquisition Sub 2, Inc., a Delaware corporation ("Merger Sub 2"), and Achieve Life Science, Inc., a Delaware corporation (the "Target"), which provides, among other things: (i) for the merger of Merger Sub 1 with and into the Target (the "First Merger"), with the Target continuing as a direct, wholly owned subsidiary of the Company (the "Initial Surviving Corporation"); and (ii) promptly following the First Merger, the merger of the Initial Surviving Corporation with and into Merger Sub 2 (the "Second Merger" and together with the First Merger, the "Mergers") with Merger Sub 2 continuing as the surviving entity in the Second Merger as a direct wholly owned subsidiary of the Company. As a result of the First Merger, each outstanding share of the Target's common stock, par value $0.01 per share, shall be converted solely into the right to receive a number of shares of common stock of the Company, par value $0.001 per share (the "Company Common Stock") equal to the Exchange Ratio. We also understand that the Exchange Ratio will be subject to adjustment as provided in the Merger Agreement based on increases or decreases in the number of Company Fully-Diluted Shares (the "Exchange Ratio Adjustment"). The terms and conditions of the Mergers are more fully set forth in the Merger Agreement and capitalized terms used but not defined herein shall have the meanings ascribed to such terms in the Merger Agreement.

You have requested our opinion as to the fairness, from a financial point of view, of the Exchange Ratio to the Company.

In the course of performing our review and analyses for rendering the opinion set forth below, we have:

i. reviewed the financial terms of a draft copy of the Merger Agreement as of January 4, 2017, which was the most recent draft available to us (the "Draft Merger Agreement");

ii. reviewed certain publicly available business and financial information concerning the Company and the industries in which it operates;

iii. reviewed certain internal financial analyses and forecasts of the Company and the Target prepared by and provided to us by the management of the Company relating to each of the Company's and the Target's business, including certain benefits to be realized as a result of the Mergers (the "Projections"), and utilized per instruction of the Company;

iv. conducted discussions with members of senior management and representatives of the Company and the Target concerning the matters described in clauses (ii)-(iii) above, the other strategic alternatives considered or pursued by the Company since August 16, 2016, the likelihood of the Company being able to enter into partnership arrangements or obtain financing to the extent necessary to finance the Company's strategic plan, and certain other matters we believed necessary or appropriate to our inquiry;

v. compared the financial and operating performance of the Target with publicly available information concerning other publicly-traded companies, including certain publicly traded securities of such other companies, that we deemed relevant;

vi. reviewed and analyzed, based on the Projections, the projected cash flows to be generated by the Target to determine the present value of the Target's discounted cash flows; and

vii. performed such other financial studies, analyses and investigations and considered such other information as we deemed appropriate for the purposes of the opinion set forth below.

In arriving at the opinion set forth below, we have assumed and relied upon, without assuming liability or responsibility for independent verification, the accuracy and completeness of all of the financial, legal, regulatory, tax, accounting and other information that was publicly available or was provided to, discussed with or reviewed by us. We are not legal, regulatory, tax or financial reporting experts and have relied, with your consent, on the assessments made by advisors to the Company with respect to such issues. We have not conducted any independent verification of the Projections. Without limiting the generality of the foregoing, with respect to the Projections, we have assumed, with your consent, and based upon discussions with the Company's management, that they have been reasonably prepared in good faith, that the Projections are the best currently available estimates and judgments of the management of the Company of the future results of operations and financial performance of the Company and the Target. We express no view as to the Projections or the assumptions on which they are based.

In arriving at the opinion set forth below, we have made no analysis of, and express no opinion as to, the adequacy of the reserves of the Company or the Target and have relied upon information supplied to us by the Company as to such adequacy. In addition, we have not made any independent evaluations or appraisals of the assets or liabilities (including any contingent derivatives or off-balance-sheet assets or liabilities) of the Company or the Target or any of their respective subsidiaries, and we have not been furnished with any such evaluations or appraisals, nor have we evaluated the solvency of the Company, the Target or any other entity under any state or federal law relating to bankruptcy, insolvency or similar matters. We have assumed that there has been no material change in the assets, financial condition, business or prospects of the Company since the date of the most recent relevant financial statements made available to us. Without limiting the generality of the foregoing, we have undertaken no independent analysis of any pending or threatened litigation, regulatory action, possible unasserted claims or other contingent liabilities, to which the Company, the Target or any of their respective affiliates is a party or may be subject, and at the direction of the Company and with its consent, our opinion makes no assumption concerning, and therefore does not consider, the possible assertion of claims, outcomes or damages arising out of any such matters. We have also assumed that neither the Company nor the Target is party to any material pending transaction that has not been disclosed to us, including without limitation any financing, recapitalization, acquisition or merger, divestiture or spin-off, other than the Mergers.

We have assumed that the representations and warranties of each party contained in the Merger Agreement and in all other related documents and instruments that are referred to therein are and will be true and correct as of the date or the dates made or deemed made, that each party thereto will fully and timely perform all of the covenants and agreements required to be performed by it under the Merger Agreement and any other agreement contemplated thereby, that the Mergers will be consummated pursuant to the terms of the Merger Agreement without amendments thereto, and that all conditions to the consummation of the Mergers will be satisfied without waiver thereof. We have assumed that the final form of the Merger Agreement will be in all material respects identical to the Draft Merger Agreement. We have, with your consent, further assumed that the Exchange Ratio Adjustment will not result in any adjustment to the Exchange Ratio that is material to our analysis. We have also assumed that any governmental, regulatory and other consents and approvals contemplated in connection with the Mergers will be obtained and that, in the course of obtaining any of those consents, no restrictions will be imposed or waivers made that would have an adverse effect on the Company or the contemplated benefits of the Mergers.

Our opinion set forth below is necessarily based on economic, market, financial and other conditions as they exist, and on the information made available to us, as of the date of this letter. We have not considered any potential legislative or regulatory changes currently being considered by the United States Congress, the Securities and Exchange Commission (the "SEC"), or any other governmental or regulatory bodies, or any changes in accounting methods or generally accepted accounting principles that may be adopted by the SEC or the Financial Accounting Standards Board. It should be understood that, although subsequent developments may affect the conclusion reached in such opinion, we do not have any obligation to update, revise or reaffirm the opinion set forth below. Our opinion set forth below addresses solely the fairness, from a financial point of view, of the Exchange Ratio to the Company and does not address any other terms in the Merger Agreement, or any other agreement contemplated by the Merger Agreement or relating to the Mergers or any other aspect or implication of the Mergers, including without limitation, the form or structure of the Mergers or the fairness of the Mergers or the Exchange Ratio to the holders of Company Common Stock or of any other securities or creditors or any other constituency of the Company. Our opinion does not address the Company's underlying business decision to proceed with the Mergers or the relative merits of the Mergers compared to other alternatives available to the Company. We express no opinion as to the prices or ranges of prices at which shares of securities of any person, including the Company, will trade at any time, including following the announcement or consummation of the Mergers. We have not been requested to opine as to, and our opinion does not in any manner address, the amount or nature of compensation to any of the officers, directors or employees of any party to the Mergers, or any class of such persons relative to the compensation to be paid to the security holders of the Target in connection with the Mergers or with respect to the fairness of any such compensation.

It is understood that this letter is provided to the Board of Directors of the Company for your information in connection with your consideration of the Mergers and may not be used for any other purpose or disclosed, referred to, or communicated (in whole or in part) to any third party for any purpose whatsoever without our prior written consent, except that a copy of this letter may be included in its entirety in any filing the Company is required to make with the SEC in connection with the Mergers if such inclusion is required by applicable law. The opinion set forth below does not constitute a recommendation to the Board of Directors or any stockholder of the Company or the Target as to how to vote on or to take any other action in connection with the Mergers.

As part of our investment banking services, we are regularly engaged in the valuation of businesses and securities in connection with mergers and acquisitions, and for other purposes. We have acted as the Company's financial advisor in connection with the Mergers and will receive a fee for our services, a significant portion of which is contingent upon consummation of the Mergers. In addition, the Company has agreed to reimburse our expenses and indemnify us for certain liabilities that may arise out of our engagement. We will also receive an additional fee for rendering the opinion set forth below. In the two years prior to the date hereof, we or our affiliates have provided financial advisory and financing services for the Company and have received customary fees of $100,000 in connection with such services. We or such affiliates may also seek to provide such services to the Company and the Target and/or certain of their respective affiliates in the future and expect to receive fees for the rendering of these services.

The opinion set forth below was reviewed and approved by a fairness committee of MTS Securities, LLC.

Based upon and subject to the foregoing, it is our opinion as of the date hereof that the Exchange Ratio is fair, from a financial point of view, to the Company.

Very truly yours,

/s/ MTS SECURITIES, LLC
MTS SECURITIES, LLC

ANNEX E

SECTION 262 OF THE DELAWARE GENERAL CORPORATION LAW

§262 Appraisal rights.

(a) Any stockholder of a corporation of this State who holds shares of stock on the date of the making of a demand pursuant to subsection (d) of this section with respect to such shares, who continuously holds such shares through the effective date of the merger or consolidation, who has otherwise complied with subsection (d) of this section and who has neither voted in favor of the merger or consolidation nor consented thereto in writing pursuant to § 228 of this title shall be entitled to an appraisal by the Court of Chancery of the fair value of the stockholder's shares of stock under the circumstances described in subsections (b) and (c) of this section. As used in this section, the word "stockholder" means a holder of record of stock in a corporation; the words "stock" and "share" mean and include what is ordinarily meant by those words; and the words "depository receipt" mean a receipt or other instrument issued by a depository representing an interest in 1 or more shares, or fractions thereof, solely of stock of a corporation, which stock is deposited with the depository.

(b) Appraisal rights shall be available for the shares of any class or series of stock of a constituent corporation in a merger or consolidation to be effected pursuant to § 251 (other than a merger effected pursuant to § 251(g) of this title and, subject to paragraph (b)(3) of this section, § 251(h) of this title), § 252, § 254, § 255, § 256, § 257, § 258, § 263 or § 264 of this title:

(1) Provided, however, that, except as expressly provided in § 363(b) of this title, no appraisal rights under this section shall be available for the shares of any class or series of stock, which stock, or depository receipts in respect thereof, at the record date fixed to determine the stockholders entitled to receive notice of the meeting of stockholders to act upon the agreement of merger or consolidation, were either: (i) listed on a national securities exchange or (ii) held of record by more than 2,000 holders; and further provided that no appraisal rights shall be available for any shares of stock of the constituent corporation surviving a merger if the merger did not require for its approval the vote of the stockholders of the surviving corporation as provided in § 251(f) of this title.

(2) Notwithstanding paragraph (b)(1) of this section, appraisal rights under this section shall be available for the shares of any class or series of stock of a constituent corporation if the holders thereof are required by the terms of an agreement of merger or consolidation pursuant to §§ 251, 252, 254, 255, 256, 257, 258, 263 and 264 of this title to accept for such stock anything except:

a. Shares of stock of the corporation surviving or resulting from such merger or consolidation, or depository receipts in respect thereof;

b. Shares of stock of any other corporation, or depository receipts in respect thereof, which shares of stock (or depository receipts in respect thereof) or depository receipts at the effective date of the merger or consolidation will be either listed on a national securities exchange or held of record by more than 2,000 holders;

c. Cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a. and b. of this section; or

d. Any combination of the shares of stock, depository receipts and cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a., b. and c. of this section.

(3) In the event all of the stock of a subsidiary Delaware corporation party to a merger effected under § 251(h), § 253 or § 267 of this title is not owned by the parent immediately prior to the merger, appraisal rights shall be available for the shares of the subsidiary Delaware corporation.

(4) In the event of an amendment to a corporation's certificate of incorporation contemplated by § 363(a) of this title, appraisal rights shall be available as contemplated by § 363(b) of this title, and the

procedures of this section, including those set forth in subsections (d) and (e) of this section, shall apply as nearly as practicable, with the word "amendment" substituted for the words "merger or consolidation," and the word "corporation" substituted for the words "constituent corporation" and/or "surviving or resulting corporation."

(c) Any corporation may provide in its certificate of incorporation that appraisal rights under this section shall be available for the shares of any class or series of its stock as a result of an amendment to its certificate of incorporation, any merger or consolidation in which the corporation is a constituent corporation or the sale of all or substantially all of the assets of the corporation. If the certificate of incorporation contains such a provision, the provisions of this section, including those set forth in subsections (d), (e), and (g) of this section, shall apply as nearly as is practicable.

(d) Appraisal rights shall be perfected as follows:

(1) If a proposed merger or consolidation for which appraisal rights are provided under this section is to be submitted for approval at a meeting of stockholders, the corporation, not less than 20 days prior to the meeting, shall notify each of its stockholders who was such on the record date for notice of such meeting (or such members who received notice in accordance with § 255(c) of this title) with respect to shares for which appraisal rights are available pursuant to subsection (b) or (c) of this section that appraisal rights are available for any or all of the shares of the constituent corporations, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Each stockholder electing to demand the appraisal of such stockholder's shares shall deliver to the corporation, before the taking of the vote on the merger or consolidation, a written demand for appraisal of such stockholder's shares. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such stockholder's shares. A proxy or vote against the merger or consolidation shall not constitute such a demand. A stockholder electing to take such action must do so by a separate written demand as herein provided. Within 10 days after the effective date of such merger or consolidation, the surviving or resulting corporation shall notify each stockholder of each constituent corporation who has complied with this subsection and has not voted in favor of or consented to the merger or consolidation of the date that the merger or consolidation has become effective; or

(2) If the merger or consolidation was approved pursuant to § 228, § 251(h), § 253, or § 267 of this title, then either a constituent corporation before the effective date of the merger or consolidation or the surviving or resulting corporation within 10 days thereafter shall notify each of the holders of any class or series of stock of such constituent corporation who are entitled to appraisal rights of the approval of the merger or consolidation and that appraisal rights are available for any or all shares of such class or series of stock of such constituent corporation, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Such notice may, and, if given on or after the effective date of the merger or consolidation, shall, also notify such stockholders of the effective date of the merger or consolidation. Any stockholder entitled to appraisal rights may, within 20 days after the date of mailing of such notice or, in the case of a merger approved pursuant to § 251(h) of this title, within the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days after the date of mailing of such notice, demand in writing from the surviving or resulting corporation the appraisal of such holder's shares. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such holder's shares. If such notice did not notify stockholders of the effective date of the merger or consolidation, either (i) each such constituent corporation shall send a second notice before the effective date of the merger or consolidation notifying each of the holders of any class or series of stock of such constituent corporation that are entitled to appraisal rights of the effective date of the merger or consolidation or (ii) the surviving or resulting corporation shall send such a second notice to all such holders on or within 10 days after such effective date; provided, however, that if such second notice is sent more than 20 days following the sending of

the first notice or, in the case of a merger approved pursuant to § 251(h) of this title, later than the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days following the sending of the first notice, such second notice need only be sent to each stockholder who is entitled to appraisal rights and who has demanded appraisal of such holder's shares in accordance with this subsection. An affidavit of the secretary or assistant secretary or of the transfer agent of the corporation that is required to give either notice that such notice has been given shall, in the absence of fraud, be prima facie evidence of the facts stated therein. For purposes of determining the stockholders entitled to receive either notice, each constituent corporation may fix, in advance, a record date that shall be not more than 10 days prior to the date the notice is given, provided, that if the notice is given on or after the effective date of the merger or consolidation, the record date shall be such effective date. If no record date is fixed and the notice is given prior to the effective date, the record date shall be the close of business on the day next preceding the day on which the notice is given.

(e) Within 120 days after the effective date of the merger or consolidation, the surviving or resulting corporation or any stockholder who has complied with subsections (a) and (d) of this section hereof and who is otherwise entitled to appraisal rights, may commence an appraisal proceeding by filing a petition in the Court of Chancery demanding a determination of the value of the stock of all such stockholders. Notwithstanding the foregoing, at any time within 60 days after the effective date of the merger or consolidation, any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party shall have the right to withdraw such stockholder's demand for appraisal and to accept the terms offered upon the merger or consolidation. Within 120 days after the effective date of the merger or consolidation, any stockholder who has complied with the requirements of subsections (a) and (d) of this section hereof, upon written request, shall be entitled to receive from the corporation surviving the merger or resulting from the consolidation a statement setting forth the aggregate number of shares not voted in favor of the merger or consolidation and with respect to which demands for appraisal have been received and the aggregate number of holders of such shares. Such written statement shall be mailed to the stockholder within 10 days after such stockholder's written request for such a statement is received by the surviving or resulting corporation or within 10 days after expiration of the period for delivery of demands for appraisal under subsection (d) of this section hereof, whichever is later. Notwithstanding subsection (a) of this section, a person who is the beneficial owner of shares of such stock held either in a voting trust or by a nominee on behalf of such person may, in such person's own name, file a petition or request from the corporation the statement described in this subsection.

(f) Upon the filing of any such petition by a stockholder, service of a copy thereof shall be made upon the surviving or resulting corporation, which shall within 20 days after such service file in the office of the Register in Chancery in which the petition was filed a duly verified list containing the names and addresses of all stockholders who have demanded payment for their shares and with whom agreements as to the value of their shares have not been reached by the surviving or resulting corporation. If the petition shall be filed by the surviving or resulting corporation, the petition shall be accompanied by such a duly verified list. The Register in Chancery, if so ordered by the Court, shall give notice of the time and place fixed for the hearing of such petition by registered or certified mail to the surviving or resulting corporation and to the stockholders shown on the list at the addresses therein stated. Such notice shall also be given by 1 or more publications at least 1 week before the day of the hearing, in a newspaper of general circulation published in the City of Wilmington, Delaware or such publication as the Court deems advisable. The forms of the notices by mail and by publication shall be approved by the Court, and the costs thereof shall be borne by the surviving or resulting corporation.

(g) At the hearing on such petition, the Court shall determine the stockholders who have complied with this section and who have become entitled to appraisal rights. The Court may require the stockholders who have demanded an appraisal for their shares and who hold stock represented by certificates to submit their certificates of stock to the Register in Chancery for notation thereon of the pendency of the appraisal proceedings; and if any stockholder fails to comply with such direction, the Court may dismiss the proceedings as to such stockholder. If immediately before the merger or consolidation the shares of the class

or series of stock of the constituent corporation as to which appraisal rights are available were listed on a national securities exchange, the Court shall dismiss the proceedings as to all holders of such shares who are otherwise entitled to appraisal rights unless (1) the total number of shares entitled to appraisal exceeds 1% of the outstanding shares of the class or series eligible for appraisal, (2) the value of the consideration provided in the merger or consolidation for such total number of shares exceeds $1 million, or (3) the merger was approved pursuant to § 253 or § 267 of this title.

(h) After the Court determines the stockholders entitled to an appraisal, the appraisal proceeding shall be conducted in accordance with the rules of the Court of Chancery, including any rules specifically governing appraisal proceedings. Through such proceeding the Court shall determine the fair value of the shares exclusive of any element of value arising from the accomplishment or expectation of the merger or consolidation, together with interest, if any, to be paid upon the amount determined to be the fair value. In determining such fair value, the Court shall take into account all relevant factors. Unless the Court in its discretion determines otherwise for good cause shown, and except as provided in this subsection, interest from the effective date of the merger through the date of payment of the judgment shall be compounded quarterly and shall accrue at 5% over the Federal Reserve discount rate (including any surcharge) as established from time to time during the period between the effective date of the merger and the date of payment of the judgment. At any time before the entry of judgment in the proceedings, the surviving corporation may pay to each stockholder entitled to appraisal an amount in cash, in which case interest shall accrue thereafter as provided herein only upon the sum of (1) the difference, if any, between the amount so paid and the fair value of the shares as determined by the Court, and (2) interest theretofore accrued, unless paid at that time. Upon application by the surviving or resulting corporation or by any stockholder entitled to participate in the appraisal proceeding, the Court may, in its discretion, proceed to trial upon the appraisal prior to the final determination of the stockholders entitled to an appraisal. Any stockholder whose name appears on the list filed by the surviving or resulting corporation pursuant to subsection (f) of this section and who has submitted such stockholder's certificates of stock to the Register in Chancery, if such is required, may participate fully in all proceedings until it is finally determined that such stockholder is not entitled to appraisal rights under this section.

(i) The Court shall direct the payment of the fair value of the shares, together with interest, if any, by the surviving or resulting corporation to the stockholders entitled thereto. Payment shall be so made to each such stockholder, in the case of holders of uncertificated stock forthwith, and the case of holders of shares represented by certificates upon the surrender to the corporation of the certificates representing such stock. The Court's decree may be enforced as other decrees in the Court of Chancery may be enforced, whether such surviving or resulting corporation be a corporation of this State or of any state.

(j) The costs of the proceeding may be determined by the Court and taxed upon the parties as the Court deems equitable in the circumstances. Upon application of a stockholder, the Court may order all or a portion of the expenses incurred by any stockholder in connection with the appraisal proceeding, including, without limitation, reasonable attorney's fees and the fees and expenses of experts, to be charged pro rata against the value of all the shares entitled to an appraisal.

(k) From and after the effective date of the merger or consolidation, no stockholder who has demanded appraisal rights as provided in subsection (d) of this section shall be entitled to vote such stock for any purpose or to receive payment of dividends or other distributions on the stock (except dividends or other distributions payable to stockholders of record at a date which is prior to the effective date of the merger or consolidation); provided, however, that if no petition for an appraisal shall be filed within the time provided in subsection (e) of this section, or if such stockholder shall deliver to the surviving or resulting corporation a written withdrawal of such stockholder's demand for an appraisal and an acceptance of the merger or consolidation, either within 60 days after the effective date of the merger or consolidation as provided in subsection (e) of this section or thereafter with the written approval of the corporation, then the right of such stockholder to an appraisal shall cease. Notwithstanding the foregoing, no appraisal proceeding in the Court of Chancery shall be dismissed as to any stockholder without the approval of the Court, and such approval may be conditioned upon such terms as the Court deems just; provided, however that this provision shall not

affect the right of any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party to withdraw such stockholder's demand for appraisal and to accept the terms offered upon the merger or consolidation within 60 days after the effective date of the merger or consolidation, as set forth in subsection (e) of this section.

(*l*) The shares of the surviving or resulting corporation to which the shares of such objecting stockholders would have been converted had they assented to the merger or consolidation shall have the status of authorized and unissued shares of the surviving or resulting corporation.

ANNEX F

CONTINGENT VALUE RIGHTS AGREEMENT

THIS CONTINGENT VALUE RIGHTS AGREEMENT, dated as of **[●]**, (this "Agreement"), is entered into by and among OncoGenex Pharmaceuticals, Inc., a Delaware corporation ("Arrow"), Achieve Life Science, Inc., a Delaware corporation (the "Company"), and [●], a [●], as Rights Agent.

RECITALS

WHEREAS, Arrow, Ash Acquisition Sub, Inc., Inc., a Delaware corporation ("Merger Sub 1"), Ash Acquisition Sub 2, Inc., a Delaware corporation ("Merger Sub 2"; and together with Merger Sub 1, "Merger Subs"), and the Company have entered into an Agreement and Plan of Merger and Reorganization, dated as of January 5, 2017 (the "Merger Agreement"), which contemplates, among other things, (i) the merger of Merger Sub 1 with and into the Company (the "First Merger") with the Company continuing as the initial surviving corporation (the "Initial Surviving Corporation") and promptly following the First Merger, the Initial Surviving Corporation shall merge with and into Merger Sub 2 (the "Second Merger"; together with the First Merger, the "Mergers") with Merger Sub 2 continuing as the surviving corporation and as a wholly owned subsidiary of Arrow; and (ii) the current stockholders of the Company shall become the majority stockholders of Arrow. After the completion of the Mergers, Arrow shall, among other things, change its name to "Achieve Life Science, Inc." (referred to herein as "Achieve") and the Company will be a wholly owned subsidiary of Achieve.

NOW, THEREFORE, in consideration of the foregoing and the consummation of the transactions referred to above, Arrow, the Company and Rights Agent agree, for the equal and proportionate benefit of all Holders, as follows:

ARTICLE I

DEFINITIONS; CERTAIN RULES OF CONSTRUCTION

Section 1.1 Definitions. As used in this Agreement, the following terms will have the following meanings:

"Achieve Common Stock" means the common stock, par value $0.001, of Achieve (or any successor entity).

"Acting Holders" means, at the time of determination, Holders of not less than a majority of the outstanding CVRs as set forth in the CVR Register.

"Affiliate" means as to any Person, any other Person that, directly or indirectly, controls, or is controlled by, or is under common control with, such Person. For this purpose, "control" (including, with its correlative meanings, "controlled by" and "under common control with") shall mean the possession, directly or indirectly, of the power to direct or cause the direction of management or policies of a Person, whether through the ownership of securities or partnership or other ownership interests, by contract or otherwise.

"Assignee" means (a) in Achieve's sole discretion and without the consent of any other party, any controlled Affiliate of Achieve, but only for so long as it remains a controlled Affiliate of Achieve, or (b) with the prior written consent of the Acting Holders, any other Person.

"Board of Directors" means the board of directors of Achieve.

"Board Resolution" means a resolution certified by a duly authorized officer of Achieve to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification, and delivered to the Rights Agent.

"Business Day" means any day other than a Saturday, Sunday or a day on which banking institutions in Sunnyvale, California and New York, New York are authorized or obligated by law or executive order to remain closed.

"Clinical Milestone" means the completion of a human clinical trial of the Product designed to support Regulatory Approval.

"Code" shall mean the Internal Revenue Code of 1986, as amended and the rules and regulations promulgated thereunder.

"CVRs" means the rights of Holders to receive 80% of the CVR Payment Amount; provided, however, that Achieve may elect to make the CVR Payment with cash or shares of Achieve Common Stock, and that any shares of Achieve Common Stock issued in satisfaction of Achieve's obligations under this Agreement shall have a value equal to the volume weighted average price of Achieve Common Stock for the ten trading days immediately preceding the issuance of such Achieve Common Stock. Such Achieve Common Stock shall be freely tradable upon receipt.

"CVR Payment" means the amount of the payment to be made to the Holders from the CVR Payment Amount.

"CVR Payment Amount" means the cash, equity or any other consideration received by Achieve or an Affiliate of Achieve (or which Achieve or an Affiliate of Achieve has a right to receive), whether directly or indirectly, pursuant to a Partnering Agreement if any Milestone is achieved during the CVR Term. It is hereby acknowledged and agreed by all Holders that any CVR Payment that may become payable hereunder shall be net of (and Achieve shall have the full power and authority to set off against any CVR Payment Amount) the sum of (a) any liabilities required to be reflected in the financial statements in accordance with GAAP incurred by Achieve under any Partnering Agreement, whether incurred directly by Achieve or an Affiliate or pursuant to indemnification obligations of Achieve or an Affiliate under any Partnering Agreement, and (b) any out-of-pocket fees or expenses (including reasonable attorneys' fees and expenses) incurred by or on behalf of Achieve or an Affiliate or for which Achieve or an Affiliate is responsible, in connection with any litigation or threatened litigation or any investigation by a Governmental Body, in connection with any Product ("Third Party Expenses"). All Third Party Expenses shall be determined by Achieve and true and correct copies of reasonable documentation supporting such Third Party Expenses shall be included in any Payment Triggering Event Certificate.

"CVR Register" means a register maintained by the Rights Agent.

"CVR Term" means a period of time beginning with the closing of the Merger and ending on the five year anniversary of this Agreement.

"Delaware Courts" means the Chancery Court of the State of Delaware and any state appellate court therefrom or, if (but only if) such court lacks subject matter jurisdiction, the United States District Court sitting in New Castle County in the State of Delaware and any appellate court therefrom.

"Diligent Efforts" on the part of Achieve means that (a) Achieve promptly assigns responsibility for the negotiation of a Term Sheet or Partnering Agreement to the following individuals: [●] and [●] (provided, if one or more of such individuals terminate as employees, consultants, or contractors of Achieve, the Board of Directors shall, as soon as reasonably practicable, appoint a replacement for such terminated individual), and such individuals carry out their responsibilities in a reasonably diligent manner; and (b) Achieve management and Board of Directors regularly monitor the progress of such individuals and promptly evaluate any proposed Term Sheet or Partnering Agreement. Nothing in this Agreement shall be deemed to require Achieve to approve any Term Sheet or Partnering Agreement if the Board of Directors determines that any such approval would not be in the best interests of Achieve stockholders or would otherwise violate any fiduciary duties of the Board of Directors.

"Entity" means any corporation (including any non-profit corporation), general partnership, limited partnership, limited liability partnership, joint venture, estate, trust, company (including any company

limited by shares, limited liability company or joint stock company), firm, society or other enterprise, association, organization or entity.

“EMA” means the European Medicines Agency, or any successor agency.

“EU” means the European Union.

“FDA” means the United States Food and Drug Administration, or any successor agency.

“Governmental Body” means any: (a) nation, state, commonwealth, province, territory, county, municipality, district or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign or other government; or (c) governmental or quasi-governmental authority of any nature including any governmental division, department, agency, commission, instrumentality, official, ministry, fund, foundation, center, organization, unit, body or Entity and any court, arbitrator or other tribunal.

“Holder” means a Person in whose name a CVR is registered in the CVR Register at the applicable time.

“Milestone” means any Clinical Milestone, Regulatory Approval, Sales-Based Milestone and/or Up-Front Milestone.

“Officer’s Certificate” means a certificate signed by an authorized officer of Achieve, in his or her capacity as such an authorized officer, and delivered to the Rights Agent.

“OTI” means OncoGenex Technologies Inc., a company incorporated under the federal laws of Canada.

“Partnering Agreement” means a partnering arrangement, collaboration agreement, license or sublicense agreement, asset sale, stock sale (including the sale of the capital stock of OTI) or similar arrangement by which the rights to develop, manufacture and/or commercialize the Product is granted, licensed, assigned or otherwise conveyed (including by operation of law) to a third party for which Achieve is entitled to receive payments from such third party in connection with the achievement of one or more Milestones.

“Payment Triggering Event” means the achievement of any Milestone.

“Permitted Transfer” means: a transfer of CVRs (a) upon death of a Holder by will or intestacy; (b) pursuant to a court order or (c) by operation of law (including by consolidation or merger) or without consideration in connection with the dissolution, liquidation or termination of any corporation, limited liability company, partnership or other entity.

“Person” means any individual, Entity or Governmental Body.

“Product” means any pharmaceutical product or combination of co-administered pharmaceutical products that contain(s) an antisense inhibitor designed to inhibit hsp27 as an active pharmaceutical ingredient, alone or in combination with one or more additional active pharmaceutical ingredients and including all formulations and line extensions thereof.

“Regulatory Approval” means the approval (whether full, accelerated, conditional or otherwise) from the FDA, the EMA or similar agency for the development or commercialization of the Product in the United States, the EU or any EU member country (and/or the United Kingdom) in accordance with applicable Law.

“Rights Agent” means the Rights Agent named in the first paragraph of this Agreement, until a successor Rights Agent will have become such pursuant to the applicable provisions of this Agreement, and thereafter “Rights Agent” will mean such successor Rights Agent.

“Sales-Based Milestone” means any milestone (not including on-going royalty payments measured by the amount of sales of the Product) related to the commercialization of the Product, including first commercial sale in any country, so long as such first commercial sale occurs during the CVR Term.

“Tax” shall mean any tax (including any income tax, franchise tax, capital gains tax, gross receipts tax, value-added tax, surtax, estimated tax, unemployment tax, national health insurance tax, excise tax, premium, alternative or minimum tax, ad valorem tax, transfer tax, stamp tax, sales tax, use tax, property

tax, business tax, escheat or unclaimed property, withholding tax or payroll tax), levy, assessment, tariff, impost, imposition, duty (including any customs duty) or other tax or similar charge of any kind whatsoever, including any charge or amount (including any fine, penalty, interest or other additions thereto) related thereto, imposed, assessed or collected by or under the authority of any Governmental Body, including as a result of being or having been a member of an affiliated, consolidated, controlled, fiscal, combined, unitary or aggregate group or being a transferee of or successor to any Person or as a result of any express obligation to assume such Taxes or to indemnify any other Person.

"Up-Front Milestone" shall mean an up-front payment with no additional milestone payments for clinical or regulatory approvals or sales-based royalties pursuant to an asset sale, stock sale (including the sale of the capital stock of OTI), or similar transaction, by which the rights to develop, manufacture and/or commercialize the Product is sold (including by operation of law) to a third party.

Section 1.2 Rules of Construction. Except as otherwise explicitly specified to the contrary, (a) references to a Section means a Section of this Agreement unless another agreement is specified, (b) the word "including" (in its various forms) means "including without limitation," (c) references to a particular statute or regulation include all rules and regulations thereunder and any successor statute, rules or regulation, in each case as amended or otherwise modified from time to time, (d) words in the singular or plural form include the plural and singular form, respectively, (e) references to a particular Person include such Person's successors and assigns to the extent not prohibited by this Agreement or by applicable law, (f) reference to any agreement, document or instrument means such agreement, document or instrument, as well as all addenda, exhibits, schedules or amendments thereto, in each case, as amended, modified or restated and in effect from time to time in accordance with the terms thereof, (g) Section headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement, and (h) all references to dollars or "$" refer to United States dollars.

ARTICLE II

CONTINGENT VALUE RIGHTS

Section 2.1 CVRs. The CVRs represent the rights of Holders (granted to the initial Holders in connection with the Merger Agreement) to receive contingent payments pursuant to this Agreement.

Section 2.2 Nontransferable. The CVRs may not be sold, assigned, transferred, pledged, encumbered or in any other manner transferred or disposed of, in whole or in part, other than through a Permitted Transfer. Any attempted sale, assignment, transfer, pledge, encumbrance or disposition of CVRs, in whole or in part, in violation of this Section 2.2 shall be void *ab initio* and of no effect.

Section 2.3 No Certificate; Registration; Registration of Transfer; Change of Address.

(a) The CVRs will not be evidenced by a certificate or other instrument.

(b) The Rights Agent will keep and maintain the CVR Register.

(c) Subject to the restrictions on transferability set forth in Section 2.2, every request made to transfer a CVR must be in writing and accompanied by a written instrument of transfer in form reasonably satisfactory to the Rights Agent pursuant to its guidelines, duly executed by the Holder thereof, the Holder's attorney-in-fact duly authorized in writing, the Holder's personal representative duly authorized in writing or the Holder's survivor (with written documentation evidencing such Person's status as the Holder's survivor), and setting forth in reasonable detail the circumstances relating to the transfer. Upon receipt of such written notice, the Rights Agent will, subject to its reasonable determination that the transfer instrument is in proper form and the transfer constitutes a Permitted Transfer and otherwise complies with the other terms and conditions of this Agreement (including the provisions of Section 2.2), register the transfer of the CVRs in

the CVR Register. Achieve and the Rights Agent may require payment of a sum sufficient to cover any stamp or other Tax or Governmental Body charge that is imposed in connection with any such registration of transfer. The Rights Agent shall have no duty or obligation to take any action under any section of this Agreement that requires the payment by a Holder of a CVR of applicable Taxes or charges unless and until the Rights Agent is satisfied that all such Taxes or charges have been paid. All duly transferred CVRs registered in the CVR Register will be the valid obligations of Achieve and will entitle the transferee to the same benefits and rights under this Agreement as those held immediately prior to the transfer by the transferor. No transfer of a CVR will be valid until registered in the CVR Register in accordance with this Agreement.

(d) A Holder may make a written request to the Rights Agent to change such Holder's address of record in the CVR Register. The written request must be duly executed by the Holder. Upon receipt of such written notice, the Rights Agent will promptly record the change of address in the CVR Register.

Section 2.4 Payment Procedures; Notices.

(a) For each Payment Triggering Event during the CVR Term, Achieve shall deliver to the Rights Agent (i) a written notice indicating that a Payment Triggering Event has occurred and that Achieve or an Affiliate of Achieve has received payment under the Partnering Agreement (the "Payment Triggering Event Notice") and an Officer's Certificate certifying the date of the Payment Triggering Event and that the Holders are entitled to receive the applicable CVR Payment (the "Payment Triggering Event Certificate"), (ii) any letter of instruction reasonably required by the Rights Agent and (iii) the payment required by Section 4.2.

(b) The Rights Agent will promptly, and in any event within ten (10) Business Days of receipt of a Payment Triggering Event Notice, send each Holder at its registered address a copy of such Payment Triggering Event Notice as well as any letter of instruction reasonably required by the Rights Agent and pay the applicable CVR Payment Amount to each of the Holders to the address of each Holder as reflected in the CVR Register as of the close of business on the date of the Payment Triggering Event Notice or, if the CVR Payment Amount is not deposited concurrently with the delivery of the Payment Triggering Event Notice, within one Business Day of the Rights Agent receipt of the CVR Payment Amount.

(c) Achieve or its Affiliate shall be entitled to deduct and withhold, or cause the Rights Agent to deduct and withhold, from any CVR Payment Amount or any other amounts otherwise payable pursuant to this Agreement such amounts as may be required to be deducted and withheld therefrom under applicable Tax law, as may reasonably be determined by Achieve, its Affiliates or the Rights Agent. Prior to making any such Tax withholdings or causing any such Tax withholdings to be made with respect to any Holder, Achieve shall instruct the Rights Agent to solicit IRS Form W-9s or W-8s, or any other appropriate forms or information, from Holders in order to provide a reasonable opportunity for the Holder to timely provide any necessary Tax forms (including an IRS Form W-9 or an applicable IRS Form W-8) in order to avoid or reduce such withholding, and such CVR Payment may be reasonably delayed in order to gather such necessary Tax forms. Achieve, its Affiliates and the Rights Agent may assume all such forms in its possession or provided by any Holder are valid under applicable law until subsequently notified by such Holder. Achieve or its Affiliate shall, or shall cause the Rights Agent to, take all action that may be necessary to ensure that any amounts withheld in respect of Taxes are promptly remitted to the appropriate Governmental Body. To the extent any amounts are so deducted and withheld and properly remitted to the appropriate Governmental Body, such amounts shall be treated for all purposes of this Agreement as having been paid to the person in respect of whom such deduction and withholding was made, and as required by applicable law, Achieve shall deliver (or shall cause the Rights Agent to deliver) to the person to whom such amounts would otherwise have been paid an original IRS Form 1099 or other reasonably acceptable evidence of such withholding.

(d) Any portion of any CVR Payment Amount that remains undistributed to a Holder twelve (12) months after the date of the delivery of the applicable Payment Triggering Event Notice will be delivered by the Rights Agent to Achieve, upon demand, and any Holder will thereafter look only to Achieve for payment of such CVR Payment Amount, without interest and subject to Section 2.4(e).

(e) Neither Achieve nor the Rights Agent will be liable to any person in respect of any CVR Payment Amount delivered to a public official pursuant to any applicable abandoned property, escheat or similar law. If, despite Achieve's and/or the Rights Agent's commercially reasonable efforts to deliver a CVR Payment Amount to the applicable Holder, such CVR Payment Amount has not been paid prior to twelve (12) months after receipt of the CVR Payment Amount by the Rights Agent (or immediately prior to such earlier date on which such CVR Payment Amount would otherwise escheat to or become the property of any Governmental Body), any such CVR Payment Amount will, to the extent permitted by applicable law, become the property of Achieve, free and clear of all claims or interest of any person previously entitled thereto. In addition to and not in limitation of any other indemnity obligation herein, Achieve agrees to indemnify and hold harmless Rights Agent with respect to any liability, penalty, cost or expense Rights Agent may incur or be subject to in connection with transferring such property to Achieve.

Section 2.5 No Voting, Dividends or Interest; No Equity or Ownership Interest in Achieve

(a) The CVRs will not have any voting or dividend rights, and interest will not accrue on any amounts payable on the CVRs to any Holder.

(b) The CVRs will not represent any equity or ownership interest in Achieve, any constituent company to the Merger or any of their respective Affiliates (for the sake of clarity, it being understood that if Achieve elects to issue shares of common stock of Achieve to satisfy its payment obligations under this Agreement, such shares of common stock of Achieve shall represent equity and ownership interests in Achieve).

(c) It is hereby acknowledged and agreed that the CVRs and the possibility of any payment hereunder with respect thereto are highly speculative, and it is highly possible that Holders will not receive any payments under this Agreement or in connection with the CVRs. It is highly possible that no Milestone will occur prior to the expiration of the CVR Term and accordingly it is highly possible that there will not be any Milestone that may be the subject of a CVR Payment Amount. It is acknowledged and agreed that this Section 2.5(c) is an essential and material term of this Agreement.

Section 2.6 Ability to Abandon CVR. A Holder may at any time, at such Holder's option, abandon all of such Holder's remaining rights in a CVR by transferring such CVR to Achieve without consideration therefor. Nothing in this Agreement shall prohibit Achieve or any of its Affiliates from offering to acquire or acquiring any CVRs for consideration from the Holders, in private transactions or otherwise, in its sole discretion. Any CVRs acquired by Achieve or any of its Affiliates shall be automatically deemed extinguished and no longer outstanding for purposes of the definition of Acting Holders and Article V and Section 6.3 hereunder.

ARTICLE III

THE RIGHTS AGENT

Section 3.1 Certain Duties and Responsibilities. The Rights Agent is hereby appointed, authorized and empowered to act on behalf of the Holders, and to execute, deliver and receive all agreements, documents, instruments and consents on behalf of and as agent for each Holder at any time in connection with, and that may be necessary or appropriate to accomplish the intent and implement the provisions of this Agreement, including without limitation for purposes of (a) confirming the satisfaction of Achieve's obligations under this Agreement, including receiving and reviewing any Payment Triggering Event Certificate and (b) determining matters with respect to the amounts to be paid to the Holders pursuant to this Agreement. The Rights Agent will not have any liability for any actions taken or not taken in connection with this Agreement, except to the extent of its willful or intentional misconduct, bad faith or gross negligence.

Section 3.2 Certain Rights of Rights Agent. The Rights Agent undertakes to perform such duties and only such duties as are specifically set forth in this Agreement, and no implied covenants or obligations will be read into

this Agreement against the Rights Agent. The Rights Agent may not assign any of its obligations under this agreement. In addition:

(a) the Rights Agent may rely and will be protected and held harmless by the proper party or parties in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order or other paper or document reasonably believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) whenever the Rights Agent will deem it reasonably necessary that a matter be proved or established by Achieve prior to taking, suffering or omitting any action hereunder, the Rights Agent may rely upon an Officer's Certificate, which such Officer's Certificate shall be, if signed by the party or parties required to consent to such action, shall be full authorization and protection to the Rights Agent, and the Rights Agent shall, in the absence of bad faith, gross negligence or willful or intentional misconduct on its part, incur no liability and be held harmless by Achieve for or in respect of any action taken, suffered or omitted to be taken by it under the provisions of this Agreement in reliance upon such Officer's Certificate;

(c) the Rights Agent may engage and consult with counsel of its selection and the written advice of such counsel or any opinion of counsel will be full and complete authorization and protection to the Rights Agent with respect of any action taken, suffered or omitted to be taken by it hereunder in good faith and in reliance thereon;

(d) the permissive rights of the Rights Agent to do things enumerated in this Agreement will not be construed as a duty;

(e) the Rights Agent will not be required to give any note or surety in respect of the execution of such powers or otherwise in respect of the premises;

(f) the Rights Agent shall not be liable for or by reason of, and shall be held harmless by Achieve with respect to, any of the statements of fact or recitals contained in this Agreement or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by Achieve only;

(g) except as otherwise set forth in this Agreement, the Rights Agent will have no liability and shall be held harmless by Achieve in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution and delivery hereof by the Rights Agent and the enforceability of this Agreement against the Rights Agent assuming the due execution and delivery hereof by the other parties hereto); nor shall it be responsible for any breach by Achieve or any other party to this Agreement of any covenant or condition contained in this Agreement;

(h) Achieve agrees to indemnify Rights Agent for, and hold Rights Agent harmless against, any loss, liability, claim, demands, suits or expense arising out of or in connection with Rights Agent's duties under this Agreement, including the reasonable costs and expenses of defending Rights Agent against any claims, charges, demands, suits or loss, unless such loss has been finally determined by a court of competent jurisdiction to be a result of Rights Agent's gross negligence, bad faith or willful or intentional misconduct;

(i) Achieve agrees (1) to pay the fees and expenses of the Rights Agent in connection with this Agreement as agreed upon in writing by the Rights Agent and Achieve on or prior to the date hereof and (2) to reimburse the Rights Agent for all Taxes and Governmental Body charges, reasonable and documented out-of-pocket expenses incurred, and paid out of its own separate funds, by the Rights Agent in the execution of this Agreement (other than Taxes imposed on or measured by the Rights Agent's net income and franchise or similar Taxes imposed on it (in lieu of net income Taxes)). The Rights Agent will also be entitled to reimbursement from Achieve for all reasonable, necessary and documented out-of-pocket expenses paid or incurred by it in connection with the administration by the Rights Agent of its duties hereunder; and

(j) No provision of this Agreement shall require the Rights Agent to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder or in the exercise of its rights if there shall be reasonable grounds for believing that repayment of such funds or adequate indemnification against such risk or liability is not reasonably assured to it.

Section 3.3 Resignation and Removal; Appointment of Successor.

(a) Rights Agent may resign at any time by giving written notice thereof to Achieve specifying a date when such resignation will take effect, which notice will be sent at least sixty (60) days prior to the date so specified but in no event will such resignation become effective until a successor Rights Agent has been appointed. Achieve has the right to remove Rights Agent at any time by a Board Resolution specifying a date when such removal will take effect but no such removal will become effective until a successor Rights Agent has been appointed. Notice of such removal will be given by Achieve to Rights Agent, which notice will be sent at least thirty (30) days prior to the date so specified.

(b) If the Rights Agent provides notice of its intent to resign, is removed pursuant to Section 3.3(a) or becomes incapable of acting, Achieve will, as soon as is commercially reasonably possible, appoint a qualified successor Rights Agent reasonably satisfactory to the Acting Holders who, unless otherwise consented to in writing by the Acting Holders, shall be a stock transfer agent of national reputation or the corporate trust department of a commercial bank. The successor Rights Agent so appointed will, upon its acceptance of such appointment in accordance with this Section 3.3(b), become the successor Rights Agent.

(c) Achieve will give notice of each resignation and each removal of a Rights Agent and each appointment of a successor Rights Agent by mailing written notice of such event by first-class mail to the Holders as their names and addresses appear in the CVR Register. Each notice will include the name and address of the successor Rights Agent. If Achieve fails to send such notice within ten (10) Business Days after acceptance of appointment by a successor Rights Agent in accordance with Section 3.4, the successor Rights Agent will cause the notice to be mailed at the reasonable expense of Achieve.

Section 3.4 Acceptance of Appointment by Successor. Every successor Rights Agent appointed pursuant to Section 3.3(b) hereunder will execute, acknowledge and deliver to Achieve and to the retiring Rights Agent an instrument accepting such appointment and a counterpart of this Agreement, and thereupon such successor Rights Agent, without any further act, deed or conveyance, will become vested with all the rights, powers, trusts and duties of the retiring Rights Agent. On request of Achieve or the successor Rights Agent, the retiring Rights Agent will execute and deliver an instrument transferring to the successor Rights Agent all the rights, powers and trusts of the retiring Rights Agent.

ARTICLE IV

COVENANTS

Section 4.1 List of Holders. Achieve will furnish or cause to be furnished to the Rights Agent, in such form as Achieve receives from Achieve's transfer agent (or other agent performing similar services for Achieve), the names and addresses of the Holders within thirty (30) Business Days of the Effective Time.

Section 4.2 Payment of CVR Payment Amounts. For each Payment Triggering Event achieved in accordance with this Agreement, Achieve will, as promptly as practicable following the delivery of any Payment Triggering Event Notice to the Rights Agent, deposit with the Rights Agent, for payment to the Holders in accordance with Section 2.4, the aggregate amount of cash, securities or other consideration necessary to pay the CVR Payment Amount set forth in such Payment Triggering Event Notice to each Holder.

Section 4.3 Books and Records. Achieve shall, and shall cause its Affiliates to, keep records in sufficient detail to enable the Holders to determine whether any of the Milestones are achieved and any amounts payable hereunder.

Section 4.4 Diligence Obligation.

(a) For a period of 6 months after the first to occur of (i) the presentation of the final data from the Borealis-2 clinical trial by Arrow at the February 2017 Genitourinary Cancers Symposium or (ii) February 28, 2017

(the "Diligence Period"), Arrow and Achieve shall use Diligent Efforts to enter into a term sheet for a Partnering Agreement (such term sheet, whether or not binding, "Term Sheet"). The obligations of Arrow and Achieve to use Diligent Efforts shall expire upon the termination of the earlier of (a) the expiration of the Diligence Period without execution of a Term Sheet, or (b) the execution of a Partnering Agreement.

(b) If a Term Sheet is entered into prior to the expiration of the Diligence Period, Arrow and Achieve shall use Diligent Efforts to enter into a Partnering Agreement pursuant to the terms of such Term Sheet. If a Term Sheet is not entered into prior to the expiration of the Diligence Period, no payments shall be made pursuant to Article II hereto.

Section 4.5. License Agreements. During the Diligence Period, Achieve shall not terminate the UBC or Ionis license agreements related to apatorsen. Ash shall use commercially reasonable efforts to maintain the UBC and Ionis license agreements in good standing and shall comply with the terms of such agreements.

ARTICLE V

AMENDMENTS

Section 5.1 Amendments without Consent of Holders.

(a) Without the consent of any Holders or the Rights Agent, Achieve, when authorized by a Board Resolution, at any time and from time to time, may enter into one or more amendments hereto, for any of the following purposes:

(i) to evidence the succession of another Person to Achieve and the assumption by any such successor of the covenants of Achieve herein as provided in Section 6.3;

(ii) to add to the covenants of Achieve such further covenants, restrictions, conditions or provisions as Achieve and the Rights Agent will consider to be for the protection of the Holders; provided that, in each case, such provisions do not adversely affect the interests of the Holders;

(iii) to cure any ambiguity, to correct or supplement any provision herein that may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Agreement; provided that, in each case, such provisions do not adversely affect the interests of the Holders;

(iv) as may be necessary or appropriate to ensure that the CVRs are not subject to registration under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder;

(v) to evidence the succession of another Person as a successor Rights Agent and the assumption by any such successor of the covenants and obligations of the Rights Agent herein in accordance with Sections 3.3 and 3.4; or

(vi) any other amendments hereto for the purpose of adding, eliminating or changing any provisions of this Agreement, unless such addition, elimination or change is adverse to the interests of the Holders.

(b) Without the consent of any Holders, Achieve, when authorized by a Board Resolution, and the Rights Agent, in the Rights Agent's sole and absolute discretion, at any time and from time to time, may enter into one or more amendments hereto, to reduce the number of CVRs, in the event any Holder agrees to renounce such Holder's rights under this Agreement in accordance with Section 6.4.

(c) Promptly after the execution by Achieve and the Rights Agent of any amendment pursuant to the provisions of this Section 5.1, Achieve will mail (or cause the Rights Agent to mail) a notice thereof by first class mail to the Holders at their addresses as they appear on the CVR Register, setting forth such amendment.

Section 5.2 Amendments with Consent of Holders.

(a) Subject to Section 5.1 (which amendments pursuant to Section 5.1 may be made without the consent of the Holders), with the consent of the Acting Holders, whether evidenced in writing or taken at a meeting of the Holders, Achieve, when authorized by a Board Resolution, and the Rights Agent may enter into one or more amendments hereto for the purpose of adding, eliminating or changing any provisions of this Agreement, even if such addition, elimination or change is materially adverse to the interest of the Holders.

(b) Promptly after the execution by Achieve and the Rights Agent of any amendment pursuant to the provisions of this Section 5.2, Achieve will mail (or cause the Rights Agent to mail) a notice thereof by first class mail to the Holders at their addresses as they appear on the CVR Register, setting forth such amendment.

Section 5.3 Execution of Amendments. In executing any amendment permitted by this Article V, the Rights Agent will be entitled to receive, and will be fully protected in relying upon, a statement by Achieve stating that the execution of such amendment is authorized or permitted by this Agreement. The Rights Agent may, but is not obligated to, enter into any such amendment that affects the Rights Agent's own rights, privileges, covenants or duties under this Agreement or otherwise.

Section 5.4 Effect of Amendments. Upon the execution of any amendment under this Article V, this Agreement will be modified in accordance therewith, such amendment will form a part of this Agreement for all purposes and every Holder will be bound thereby.

ARTICLE VI

OTHER PROVISIONS OF GENERAL APPLICATION

Section 6.1 Notices to Rights Agent and Achieve. Any notice or other communication required or permitted hereunder shall be in writing and shall be deemed given when delivered in person, by overnight courier, by facsimile transmission (with receipt confirmed by telephone or by automatic transmission report) or by electronic mail, or two (2) Business Days after being sent by registered or certified mail (postage prepaid, return receipt requested), as follows:

If to the Rights Agent, to it at:

[●]

With a copy to:

[●]

If to Achieve, to it at:
Achieve Life Science, Inc.
30 Sunnyside Avenue
Mill Valley, California 94941
Attention: Rick Stewart
Email:

with a copy to:
Paul Hastings LLP
1117 S. California Avenue
Palo Alto, California 94304
Telephone: (650) 320-1830
Fax: (650) 320-1930
Attention: Rob R. Carlson
Email:

The Rights Agent or Achieve may specify a different address or facsimile number by giving notice in accordance with this Section 6.1.

Section 6.2 Notice to Holders. Where this Agreement provides for notice to Holders, such notice will be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to each Holder affected by such event, at the Holder's address as it appears in the CVR Register, not later than the latest date, and not earlier than the earliest date, if any, prescribed for the giving of such notice. In any case where notice to Holders is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder will affect the sufficiency of such notice with respect to other Holders.

Section 6.3 Achieve Successors and Assigns. Achieve may assign any or all of its rights, interests and obligations hereunder to an Assignee, in each case provided that the Assignee agrees to assume and be bound by all of the terms of this Agreement. Any Assignee may thereafter assign any or all of its rights, interests and obligations hereunder in the same manner as Achieve pursuant to the prior sentence. In connection with any assignment to an Assignee described in clause (a) above in this Section 6.3, Achieve (and the other assignor) shall agree to remain liable for the performance by each Assignee (and such other assignor, if applicable) of all obligations of Achieve hereunder, with such Assignee substituted for Achieve under this Agreement. This Agreement will be binding upon, inure to the benefit of and be enforceable by Achieve's successors and each Assignee. Each of Achieve's successors and Assignees shall expressly assume by an instrument supplemental hereto, executed and delivered to the Rights Agent, the due and punctual payment of the CVRs and the due and punctual performance and observance of all of the covenants and obligations of this Agreement to be performed or observed by Achieve. The Rights Agent may not assign this Agreement without Achieve's written consent. Any attempted assignment of this Agreement or any such rights in violation of this Section 6.3 shall be void and of no effect.

Section 6.4 Benefits of Agreement. Nothing in this Agreement, express or implied, will give to any Person (other than the Rights Agent, Achieve, Achieve's successors and Assignees, the Holders and the Holders' successors and assigns pursuant to a Permitted Transfer) any benefit or any legal or equitable right, remedy or claim under this Agreement or under any covenant or provision herein contained, all such covenants and provisions being for the sole benefit of the foregoing. The rights of Holders and their successors and assigns pursuant to Permitted Transfers are limited to those expressly provided in this Agreement and the Merger Agreement. Notwithstanding anything to the contrary contained herein, any Holder or Holder's successor or assign pursuant to a Permitted Transfer may agree to renounce, in whole or in part, its rights under this Agreement by written notice to the Rights Agent and Achieve, which notice, if given, shall be irrevocable.

Section 6.5 Governing Law; Jurisdiction; Waiver of Jury Trial.

(a) This Agreement, the CVRs and all actions arising under or in connection therewith shall be governed by and construed in accordance with the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law thereof.

(b) Each of the parties hereto (i) irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Delaware Courts; and (ii) consents to service of process by first class certified mail, return receipt requested, postage prepaid, to the address at which such party is to receive notice in accordance with Section 6.1. Each of the parties irrevocably and unconditionally (1) agrees not to commence any such action or proceeding except in the Delaware Courts, (2) agrees that any claim in respect of any such action or proceeding may be heard and determined in the Delaware Courts, (3) waives, to the fullest extent it may legally and effectively do so, any objection that it may now or hereafter have to the jurisdiction or laying of venue of any such action or proceeding in the Delaware Courts and (4) waives, to the fullest extent permitted by law, the defense of an inconvenient forum to the maintenance of such action or proceeding in the Delaware Courts.

(c) EACH OF THE PARTIES HERETO IRREVOCABLY WAIVES ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING BETWEEN THE PARTIES (WHETHER BASED ON CONTRACT, TORT OR OTHERWISE), INCLUDING ANY COUNTERCLAIM, ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE MERGERS CONTEMPLATED HEREBY OR THE ACTIONS OF ANY PARTY IN THE NEGOTIATION, ADMINISTRATION, PERFORMANCE AND ENFORCEMENT THEREOF. EACH PARTY HERETO (A) MAKES THIS WAIVER VOLUNTARILY AND (B) ACKNOWLEDGES THAT SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS CONTAINED IN THIS SECTION 6.5(C).

Section 6.6 Severability. If any provision of this Agreement is held invalid or unenforceable by any court of competent jurisdiction, the other provisions of this Agreement shall remain in full force and effect. Any provision of this Agreement held invalid or unenforceable only in part or degree shall remain in full force and effect to the extent not held invalid or unenforceable. The parties further agree to replace such invalid or unenforceable provision of this Agreement with a valid and enforceable provision that will achieve, to the extent possible, the economic, business and other purposes of such invalid or unenforceable provision.

Section 6.7 Counterparts and Signature. This Agreement may be executed in two or more counterparts (including by facsimile or by an electronic scan delivered by electronic mail), each of which shall be deemed an original but all of which together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each of the parties hereto and delivered to the other party, it being understood that the parties need not sign the same counterpart.

Section 6.8 Termination. This Agreement will be terminated and of no force or effect, the parties hereto will have no liability hereunder (other than with respect to monies due and owing by Achieve to Rights Agent), and no payments will be required to be made, upon the earlier of (a) the expiration of the CVR Term, or (b) the termination of any payment obligations pursuant to Section 4.4.

Section 6.9 Entire Agreement. This Agreement and the Merger Agreement (including the schedules, annexes and exhibits thereto and the documents and instruments referred to therein) contain the entire understanding of the parties hereto and thereto with reference to the transactions and matters contemplated hereby and thereby and supersedes all prior agreements, written or oral, among the parties with respect hereto and thereto.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, each of the parties has caused this Agreement to be executed on its behalf by its duly authorized officers as of the day and year first above written.

Achieve Life Science, Inc.

By: _____
Name:
Title:

OncoGenex Pharmaceuticals, Inc.

By: _____
Name:
Title:

[RIGHTS AGENT]

By: _____
Name:
Title:

ANNEX G

SUPPORT AGREEMENT

This **SUPPORT AGREEMENT** (this "Agreement"), dated as of January 5, 2017, is by and among OncoGenex Pharmaceuticals, Inc., a Delaware corporation (the "Company", or "Arrow"), and the equityholders of Achieve Life Science, Inc., a Delaware corporation ("Ash"), set forth on Schedule A hereto (each, an "Equityholder" and collectively, the "Equityholders").

WHEREAS, as of the date hereof, each Equityholder is the holder of the number of shares of common stock, par value $0.01 per share, of Ash ("Ash Common Stock") set forth opposite such Equityholder's name on Schedule A (all such shares of Ash Common Stock set forth on Schedule A, the "Subject Shares");

WHEREAS, Arrow, Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc. and the Company propose to enter into that certain Merger Agreement, dated as of the date hereof (the "Merger Agreement"). Capitalized terms used but not otherwise defined herein shall have the respective meanings ascribed to such terms in the Merger Agreement; and

WHEREAS, as a condition to the Company's willingness to enter into the Merger Agreement and as an inducement and in consideration therefor, each Equityholder (in such Equityholder's capacity as a holder of shares of Ash Common Stock) has agreed to, enter into this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth below and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, do hereby agree as follows:

ARTICLE I
VOTING AGREEMENT; GRANT OF PROXY

Each Equityholder hereby covenants and agrees that:

1.1. **Voting of Subject Shares**. Subject to the remaining terms of this Section 1.1, at every meeting of the holders of Ash Common Stock (the "Ash Stockholders"), however called, and at every adjournment or postponement thereof (or pursuant to a written consent if the Ash Stockholders act by written consent in lieu of a meeting), such Equityholder shall, or shall cause the holder of record on any applicable record date to, be present (in person or by proxy) and to vote such Equityholder's Subject Shares (a) to adopt the Merger Agreement and (b) to acknowledge that the adoption given thereby is irrevocable.

1.2. **No Inconsistent Arrangements**. Except as expressly permitted hereunder or under the Merger Agreement, such Equityholder shall not, directly or indirectly, (a) create any Encumbrance other than restrictions imposed by applicable Law or pursuant to this Agreement on any shares of Ash Common Stock, (b) transfer, sell, assign, encumber, pledge, grant, gift or otherwise dispose of (collectively, "Transfer"), or enter into any contract with respect to any Transfer of the shares of Ash Common Stock or any interest therein or publicly announce its intention to Transfer any of its shares of Ash Common Stock, (c) grant or permit the grant of any proxy, power of attorney or other authorization in or with respect to the shares of Ash Common Stock, (d) deposit or permit the deposit of the Subject Shares into a voting trust or enter into a voting agreement or arrangement with respect to the Subject Shares or (e) take any action that would make any representation or warranty of such Equityholder herein untrue or incorrect in any material respect, or have the effect of preventing such Equityholder from performing such Equityholder's obligations hereunder. Notwithstanding the foregoing, subject to any restrictions on transfer applicable to such shares of Ash Common Stock, (x) such Equityholder may make Transfers of the

shares of Ash Common Stock by will, operation of law, or for estate planning purposes, *provided*, the shares of Ash Common Stock shall continue to be bound by this Agreement and each transferee of such shares of Ash Common Stock shall agree in writing to be bound by the terms and conditions of this Agreement and either such Equityholder or the transferee shall provide the Company with a copy of such agreement promptly upon consummation of any such Transfer and (y) such Equityholder shall take all actions reasonably necessary to consummate the transactions contemplated by the Merger Agreement.

1.3. **Documentation and Information**. Such Equityholder shall permit and hereby authorizes the Company and Ash to publish and disclose in all documents and schedules filed with the SEC, and any press release or other disclosure document that the Company or Ash reasonably determines to be necessary in connection with the transactions contemplated by the Merger Agreement, such Equityholder's identity and ownership of the shares of Ash Common Stock and the nature of such Equityholder's commitments and obligations under this Agreement. Each of Arrow and Ash is an intended third-party beneficiary of this Section 1.3.

1.4. **Irrevocable Proxy.** Each Equityholder hereby revokes (or agrees to cause to be revoked) any proxies that such Equityholder has heretofore granted with respect to the Subject Shares. Such Equityholder hereby irrevocably appoints the Company, and any individual designated in writing by it, as attorney-in-fact and proxy for and on behalf of such Equityholder, for and in the name, place and stead of such Equityholder, to: (a) attend any and all meetings of the Ash Equityholders, (b) vote, express consent or dissent or issue instructions to the record holder to vote such Equityholder's Subject Shares in accordance with the provisions of Section 1.1 at any and all meetings of the Ash Equityholders or in connection with any action sought to be taken by written consent of the Ash Equityholders without a meeting and (c) grant or withhold, or issue instructions to the record holder to grant or withhold, consistent with the provisions of Section 1.1, all written consents with respect to the Subject Shares at any and all meetings of the Equityholders or in connection with any action sought to be taken by written consent without a meeting. The Company agrees not to exercise the proxy granted herein for any purpose other than the purposes expressly described in this Agreement. The foregoing proxy shall be deemed to be a proxy coupled with an interest, is irrevocable (and as such shall survive and not be affected by the death, incapacity, mental illness or insanity of such Equityholder, as applicable) until the termination of the Merger Agreement and shall not be terminated by operation of law or upon the occurrence of any other event other than the termination of this Agreement pursuant to Section 4.2. Such Equityholder authorizes such attorney and proxy to substitute any other Person to act hereunder, to revoke any substitution and to file this proxy and any substitution or revocation with the Secretary of Ash. Such Equityholder hereby affirms that the proxy set forth in this Section 1.4 is given in connection with and granted in consideration of and as an inducement to the Company to enter into the Merger Agreement and that such proxy is given to secure the obligations of such Equityholder under Section 1.1. The proxy set forth in this Section 1.4 is executed and intended to be irrevocable, subject, however, to its automatic termination upon the termination of this Agreement pursuant to Section 4.2.

1.5. **No Solicitation of Merger**. Without limiting and subject to the provisions of Section 4.14 hereof, such Equityholder shall not, directly or indirectly, knowingly take any action that Ash is not permitted to take pursuant to Section 4 of the Merger Agreement.

ARTICLE II
REPRESENTATIONS AND WARRANTIES OF THE EQUITYHOLDERS

Each Equityholder, severally but not jointly as to any other Equityholder, represents and warrants to the Company that:

2.1. **Authorization; Binding Agreement**. Such Equityholder has full legal capacity, right and authority to execute and deliver this Agreement and to perform such Equityholder's obligations hereunder and to consummate the transactions contemplated hereby. Such Equityholder has full power and authority to execute, deliver and perform this Agreement. This Agreement has been duly and validly executed and delivered by such

Equityholder, and constitutes a valid and binding obligation of such Equityholder enforceable against such Equityholder in accordance with its terms, subject to the Enforceability Exceptions. The execution and delivery by the Equityholder of this Agreement does not (a) conflict with or violate any law applicable to the Equityholder or by which any property or asset of the Equityholder is bound; or (b) result in any breach or default under any Contract to which the Equityholder is a party or to which any of the Equityholder's property or assets are subject, except, in each case, as would not reasonably be expected to adversely affect the ability of the Equityholder to consummate the transactions contemplated by this Agreement, the Merger Agreement or the ancillary agreements to which the Equityholder is to be a party pursuant to the Merger Agreement.

2.2. **Ownership of Ash Common Stock; Total Shares**. Such Equityholder is the sole record or beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of such Equityholder's shares of Ash Common Stock listed on Schedule A opposite such Equityholder's name and has good and marketable title to such shares of Ash Common Stock free and clear of any Encumbrance (including, with respect to shares of Ash Common Stock, any restriction on the right to vote or otherwise transfer the shares of Ash Common Stock), except as (a) provided hereunder and (b) pursuant to any applicable restrictions on transfer under the Securities Act. The shares of Ash Common Stock listed on Schedule A opposite such Equityholder's name constitute all of the shares of Ash Common Stock owned by such Equityholder as of the date hereof. Except pursuant to this Agreement, no Person has any contractual or other right or obligation to purchase or otherwise acquire any of such Equityholder's shares of Ash Common Stock.

2.3. **Voting Power**. Except as set forth on Schedule A, such Equityholder has full voting power, with respect to such Equityholder's Subject Shares, and full power of disposition, full power to issue instructions with respect to the matters set forth herein and full power to agree to all of the matters set forth in this Agreement, in each case with respect to all of such Equityholder's Subject Shares. None of such Equityholder's Subject Shares are subject to any proxy, voting trust or other agreement or arrangement with respect to the voting of the Subject Shares, except as provided hereunder.

2.4. **Reliance**. Such Equityholder has had the opportunity to review the Merger Agreement and this Agreement with counsel of such Equityholder's own choosing. Such Equityholder understands and acknowledges that the Company is entering into the Merger Agreement in reliance upon such Equityholder's execution, delivery and performance of this Agreement.

2.5. **Absence of Litigation**. With respect to such Equityholder, as of the date hereof, there is no action, suit, investigation or proceeding pending against, or, to the knowledge of such Equityholder, threatened against, such Equityholder or any of such Equityholder's properties or assets (including the shares of Ash Common Stock) that could reasonably be expected to prevent, delay or impair the ability of such Equityholder to perform its obligations hereunder or to consummate the transactions contemplated hereby.

2.6 **No Brokers**. Neither such Equityholder nor any of its Representatives or Affiliates has employed or made any agreement with any broker, finder or similar agent or any Person which will result in the obligation of such Equityholder, the Company, Ash, or any of their respective Affiliates to pay any finder's fee, brokerage fees or commission or similar payment in connection with the transactions contemplated hereby.

ARTICLE III
REPRESENTATIONS AND WARRANTIES OF THE COMPANY

The Company represents and warrant to each Equityholder that:

3.1. **Organization; Authorization**. The Company is a Delaware corporation. The consummation of the transactions contemplated hereby are within the Company's corporate powers and have been duly authorized by all necessary corporate actions on the part of the Company. The Company has full power and authority to execute, deliver and perform this Agreement.

3.2. **Binding Agreement**. This Agreement has been duly authorized, executed and delivered by the Company and constitutes a valid and binding obligation of the Company enforceable against the Company in accordance with its terms, subject to the Enforceability Exceptions.

ARTICLE IV
MISCELLANEOUS

4.1. **Notices**. All notices, requests and other communications to either party hereunder shall be in writing (including facsimile transmission) and shall be given, (a) if to the Company, in accordance with the provisions of the Merger Agreement and (b) if to any Equityholder, to such Equityholder's address set forth on a signature page hereto, or to such other address as such Equityholder may hereafter specify in writing to the Company for such purpose.

4.2. **Termination**. This Agreement shall terminate automatically and become void and of no further force or effect, without any notice or other action by any Person, upon the earlier of (a) the termination of the Merger Agreement in accordance with its terms and (b) the Closing. Upon termination of this Agreement, no party shall have any further obligations or liabilities under this Agreement; provided, however, that the provisions of this Article IV shall survive any termination of this Agreement.

4.3. **Amendments and Waivers**. Any provision of this Agreement may be amended or waived if such amendment or waiver is in writing and is signed, in the case of an amendment, by each party to this Agreement or, in the case of a waiver, by the party against whom the waiver is to be effective. No failure or delay by either party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

4.4. **Binding Effect; Benefit; Assignment**. The provisions of this Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and permitted assigns. Except as set forth in Section 1.3, no provision of this Agreement is intended to confer any rights, benefits, remedies, obligations or liabilities hereunder upon any person other than the parties hereto and their respective successors and assigns. Neither party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement without the consent of the other party hereto.

4.5. **Governing Law; Venue**. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware without regard to its rules of conflict of laws. The Company and each Equityholder hereby irrevocably and unconditionally consents to submit to the exclusive jurisdiction of the Delaware Court of Chancery, or if such court does not have proper jurisdiction, then the Federal court of the U.S. located in the State of Delaware, and appellate courts therefrom, (collectively, the "Delaware Courts") for any litigation arising out of or relating to this Agreement and the transactions contemplated hereby (and agrees not to commence any litigation relating thereto except in such courts), waives any objection to the laying of venue of any such litigation in the Delaware Courts and agrees not to plead or claim in any Delaware Court that such litigation brought therein has been brought in any inconvenient forum. Each of the parties hereto agrees that service of process may be made on such party by prepaid certified mail with a proof of mailing receipt validated by the United States Postal Service constituting evidence of valid service. Service made pursuant to the foregoing shall have the same legal force and effect as if served upon such party personally within the State of Delaware. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATED TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT.

4.6. **Counterparts**. The parties may execute this Agreement in one or more counterparts, each of which will be deemed an original and all of which, when taken together, will be deemed to constitute one and the same

agreement. Any signature page hereto delivered by facsimile machine or by e-mail (including in portable document format (pdf), as a joint photographic experts group (jpg) file, electronic signature, or otherwise) shall be binding to the same extent as an original signature page, with regard to any agreement subject to the terms hereof or any amendment thereto and may be used in lieu of the original signatures for all purposes. Each party that delivers such a signature page agrees to later deliver an original counterpart to any other party that requests it.

4.7. **Entire Agreement**. This Agreement constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all prior agreements and understandings, both oral and written, between the parties with respect to its subject matter.

4.8. **Severability**. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction or other Governmental Authority to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions of this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to either party. Upon such a determination, the parties shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible in an acceptable manner in order that the transactions contemplated hereby be consummated as originally contemplated to the fullest extent possible.

4.9. **Specific Performance**. The parties hereto agree that the Company would be irreparably damaged if for any reason any Equityholder fails to perform any of its obligations under this Agreement and that the Company may not have an adequate remedy at law for money damages in such event. Accordingly, the Company shall be entitled to specific performance and injunctive and other equitable relief to prevent breaches of this Agreement or to enforce specifically the performance of the terms and provisions hereof in any Delaware Court, in addition to any other remedy to which they are entitled at law or in equity, in each case without posting bond or other security, and without the necessity of proving actual damages.

4.10. **Headings**. The Section headings contained in this Agreement are inserted for convenience only and shall not affect in any way the meaning or interpretation of this Agreement.

4.11. **No Presumption**. This Agreement shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting or causing any instrument to be drafted.

4.12. **Further Assurances**. Each of the parties hereto will execute and deliver, or cause to be executed and delivered, all further documents and instruments and use their respective reasonable best efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary under applicable Law to perform their respective obligations as expressly set forth under this Agreement.

4.13. **Interpretation**. Unless the context otherwise requires, as used in this Agreement: (a) “or” is not exclusive; (b) “including” and its variants mean “including, without limitation” and its variants; (c) words defined in the singular have the parallel meaning in the plural and vice versa; (d) words of one gender shall be construed to apply to each gender; and (e) the terms “Article,” “Section” and “Schedule” refer to the specified Article, Section or Schedule of or to this Agreement.

4.14. **Obligations; Capacity as Equityholder**. The obligations of each Equityholder under this Agreement are several and not joint, and no Equityholder shall have any liability or obligation under this Agreement for any breach hereunder by any other Equityholder. Each Equityholder signs this Agreement solely in such Equityholder’s capacity as a holder of shares of Ash Common Stock, and not in such Equityholder’s capacity as a director, officer or employee of Ash or in such Equityholder’s capacity as a trustee or fiduciary of any employee benefit plan or trust. Notwithstanding anything herein to the contrary, nothing herein shall in any way restrict a director or officer of Ash in the exercise of his or her fiduciary duties as a director or officer of Ash or in his or

her capacity as a trustee or fiduciary of any employee benefit plan or trust, or prevent any director or officer of Ash or any trustee or fiduciary of any employee benefit plan or trust from taking any action in his or her capacity as such director, officer, trustee or fiduciary.

4.15. **Conversion or Exercise**. Nothing contained in this Agreement shall require any Equityholder (or shall entitle any proxy of such Equityholder) to (a) convert, exercise or exchange any option, warrants or convertible securities in order to obtain any underlying Subject Shares or (b) vote, or execute any consent with respect to, any Subject Shares underlying such options, warrants or convertible securities that have not yet been issued as of the applicable record date for that vote or consent.

4.16. **Representations and Warranties**. The representations and warranties contained in this Agreement and in any certificate or other writing delivered pursuant hereto shall not survive the Closing or the termination of this Agreement.

4.17. **No Agreement Until Executed**. Irrespective of negotiations among the parties or the exchanging of drafts of this Agreement, this Agreement shall not constitute or be deemed to evidence a contract, agreement, arrangement or understanding between the parties hereto unless and until (a) the Board of Directors of Ash has approved, for purposes of any applicable anti-takeover laws and regulations, and any applicable provision of Ash's organizational documents, the possible acquisition of the Company by Ash pursuant to the Merger Agreement and (b) the Merger Agreement is executed by all parties thereto.

(SIGNATURE PAGES FOLLOW)

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the date first written above.

ONCOGENEX PHARMACEUTICALS, INC.

By: _____

Name: _____

Title: _____

[Signature Page to Support Agreement]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the date first written above.

[ENTITY OR INDIVIDUAL EQUITYHOLDER]

By: _____

Name: _____

Title: _____

[Signature Page to Support Agreement]

Schedule A

Name of Equityholder	No. of Shares of Ash Common Stock
Richard Stewart	5,300
Anthony Clarke	1,500
Susan Clarke	1,000
Timothy Clarke	1,500
Robert Schacter	4,500
Ronald Martell	2,100
Caroline Loewy	630

SUPPORT AGREEMENT

This **SUPPORT AGREEMENT** (this "Agreement"), dated as of January 5, 2017, is by and among Achieve Life Science, Inc., a Delaware corporation (the "Company", or "Ash"), and the equityholders of OncoGenex Pharmaceuticals, Inc., a Delaware corporation ("Arrow"), set forth on Schedule A hereto (each, an "Equityholder" and collectively, the "Equityholders").

WHEREAS, as of the date hereof, each Equityholder is the holder of the number of shares of common stock, par value $0.001 per share, of Arrow ("Arrow Common Stock") and/or options to purchase shares of Arrow Common Stock ("Options") set forth opposite such Equityholder's name on Schedule A (all such shares of Arrow Common Stock set forth on Schedule A, together with any shares of Arrow Common Stock that are issued upon exercise of Options or otherwise hereafter issued to or otherwise acquired or owned by such Equityholder prior to the termination of this Agreement being referred to herein as the "Subject Shares");

WHEREAS, Arrow, Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc. and the Company propose to enter into that certain Merger Agreement, dated as of the date hereof (the "Merger Agreement"). Capitalized terms used but not otherwise defined herein shall have the respective meanings ascribed to such terms in the Merger Agreement; and

WHEREAS, as a condition to the Company's willingness to enter into the Merger Agreement and as an inducement and in consideration therefor, each Equityholder (in such Equityholder's capacity as a holder of shares of Arrow Common Stock and/or Options) has agreed to, enter into this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth below and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, do hereby agree as follows:

ARTICLE I
VOTING AGREEMENT; GRANT OF PROXY

Each Equityholder hereby covenants and agrees that:

1.1. **Voting of Subject Shares**. Subject to the remaining terms of this Section 1.1, at every meeting of the holders of Arrow Common Stock (the "Arrow Stockholders"), however called, and at every adjournment or postponement thereof (or pursuant to a written consent if the Arrow Stockholders act by written consent in lieu of a meeting), such Equityholder shall, or shall cause the holder of record on any applicable record date to, be present (in person or by proxy) and to vote such Equityholder's Subject Shares (a) in favor of the approval of (i) the Merger Agreement, (ii) the issuance of Arrow Common Stock in the First Merger, (iii) the Arrow Reverse Stock Split, (iv) any proposal to adjourn or postpone any meeting to a later date, if there are not sufficient votes for the approval of any of the foregoing matters on the date on which such meeting is held, and (v) any other proposal included in the Proxy Statement/Prospectus in connection with, or related to, the consummation of the Mergers that the Board of Directors of Arrow (the "Arrow Board") has recommended that the Arrow Stockholders vote in favor of; and (b) against any Acquisition Proposal with respect to Arrow.

1.2. **No Inconsistent Arrangements**. Except as expressly permitted hereunder or under the Merger Agreement, such Equityholder shall not, directly or indirectly, (a) create any Encumbrance other than restrictions imposed by applicable Law or pursuant to this Agreement on any shares of Arrow Common Stock or Options, (b) transfer, sell, assign, encumber, pledge, grant, gift or otherwise dispose of (collectively, "Transfer"), or enter into any contract with respect to any Transfer of the shares of Arrow Common Stock or Options or any interest therein or publicly announce its intention to Transfer any of its shares of Arrow Common Stock or Options, (c)

grant or permit the grant of any proxy, power of attorney or other authorization in or with respect to the shares of Arrow Common Stock or Options, (d) deposit or permit the deposit of the Subject Shares into a voting trust or enter into a voting agreement or arrangement with respect to the Subject Shares or (e) take any action that would make any representation or warranty of such Equityholder herein untrue or incorrect in any material respect, or have the effect of preventing such Equityholder from performing such Equityholder's obligations hereunder. Notwithstanding the foregoing, subject to any restrictions on transfer applicable to such shares of Arrow Common Stock or Options provided pursuant to the terms of the Option and any stock option plan under which such Option was granted, (x) such Equityholder may make Transfers of the shares of Arrow Common Stock or Options by will, operation of law, or for estate planning purposes, *provided*, the shares of Arrow Common Stock or Options, as applicable, shall continue to be bound by this Agreement and each transferee of such shares of Arrow Common Stock or Options shall agree in writing to be bound by the terms and conditions of this Agreement and either such Equityholder or the transferee shall provide the Company with a copy of such agreement promptly upon consummation of any such Transfer and (y) such Equityholder shall take all actions reasonably necessary to consummate the transactions contemplated by the Merger Agreement.

1.3. **Documentation and Information**. Such Equityholder shall permit and hereby authorizes the Company and Arrow to publish and disclose in all documents and schedules filed with the SEC, and any press release or other disclosure document that the Company or Arrow reasonably determines to be necessary in connection with the transactions contemplated by the Merger Agreement, such Equityholder's identity and ownership of the shares of Arrow Common Stock and/or Options and the nature of such Equityholder's commitments and obligations under this Agreement. Each of Arrow and Ash is an intended third-party beneficiary of this Section 1.3.

1.4. **Irrevocable Proxy.** Each Equityholder hereby revokes (or agrees to cause to be revoked) any proxies that such Equityholder has heretofore granted with respect to the Subject Shares. Such Equityholder hereby irrevocably appoints the Company, and any individual designated in writing by it, as attorney-in-fact and proxy for and on behalf of such Equityholder, for and in the name, place and stead of such Equityholder, to: (a) attend any and all meetings of the Arrow Equityholders, (b) vote, express consent or dissent or issue instructions to the record holder to vote such Equityholder's Subject Shares in accordance with the provisions of Section 1.1 at any and all meetings of the Arrow Equityholders or in connection with any action sought to be taken by written consent of the Arrow Equityholders without a meeting and (c) grant or withhold, or issue instructions to the record holder to grant or withhold, consistent with the provisions of Section 1.1, all written consents with respect to the Subject Shares at any and all meetings of the Equityholders or in connection with any action sought to be taken by written consent without a meeting. The Company agrees not to exercise the proxy granted herein for any purpose other than the purposes expressly described in this Agreement. The foregoing proxy shall be deemed to be a proxy coupled with an interest, is irrevocable (and as such shall survive and not be affected by the death, incapacity, mental illness or insanity of such Equityholder, as applicable) until the termination of the Merger Agreement and shall not be terminated by operation of law or upon the occurrence of any other event other than the termination of this Agreement pursuant to Section 4.2. Such Equityholder authorizes such attorney and proxy to substitute any other Person to act hereunder, to revoke any substitution and to file this proxy and any substitution or revocation with the Secretary of Arrow. Such Equityholder hereby affirms that the proxy set forth in this Section 1.4 is given in connection with and granted in consideration of and as an inducement to the Company to enter into the Merger Agreement and that such proxy is given to secure the obligations of such Equityholder under Section 1.1. The proxy set forth in this Section 1.4 is executed and intended to be irrevocable, subject, however, to its automatic termination upon the termination of this Agreement pursuant to Section 4.2.

1.5. **No Solicitation of Merger**. Without limiting and subject to the provisions of Section 4.14 hereof, such Equityholder shall not, directly or indirectly, knowingly take any action that Arrow is not permitted to take pursuant to Section 4 of the Merger Agreement.

ARTICLE II
REPRESENTATIONS AND WARRANTIES OF THE EQUITYHOLDERS

Each Equityholder, severally but not jointly as to any other Equityholder, represents and warrants to the Company that:

2.1. **Authorization; Binding Agreement**. Such Equityholder has full legal capacity, right and authority to execute and deliver this Agreement and to perform such Equityholder's obligations hereunder and to consummate the transactions contemplated hereby. Such Equityholder has full power and authority to execute, deliver and perform this Agreement. This Agreement has been duly and validly executed and delivered by such Equityholder, and constitutes a valid and binding obligation of such Equityholder enforceable against such Equityholder in accordance with its terms, subject to the Enforceability Exceptions. The execution and delivery by the Equityholder of this Agreement does not (a) conflict with or violate any law applicable to the Equityholder or by which any property or asset of the Equityholder is bound; or (b) result in any breach or default under any Contract to which the Equityholder is a party or to which any of the Equityholder's property or assets are subject, except, in each case, as would not reasonably be expected to adversely affect the ability of the Equityholder to consummate the transactions contemplated by this Agreement, the Merger Agreement or the ancillary agreements to which the Equityholder is to be a party pursuant to the Merger Agreement.

2.2. **Ownership of Arrow Common Stock and Options; Total Shares**. Such Equityholder is the sole record or beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of such Equityholder's shares of Arrow Common Stock and Options listed on Schedule A opposite such Equityholder's name and has good and marketable title to such shares of Arrow Common Stock and Options free and clear of any Encumbrance (including, with respect to shares of Arrow Common Stock, any restriction on the right to vote or otherwise transfer the shares of Arrow Common Stock), except as (a) provided hereunder, (b) pursuant to any applicable restrictions on transfer under the Securities Act, (c) subject to any risk of forfeiture with respect to any shares of Arrow Common Stock granted to such Equityholder under an employee benefit plan of Arrow and (d) with respect to Options, provided pursuant to the terms of the Option and any stock option plan under which such Option was granted. The shares of Arrow Common Stock and Options listed on Schedule A opposite such Equityholder's name constitute all of the shares of Arrow Common Stock and/or Options owned by such Equityholder as of the date hereof. Except pursuant to this Agreement, no Person has any contractual or other right or obligation to purchase or otherwise acquire any of such Equityholder's shares of Arrow Common Stock and Options.

2.3. **Voting Power**. Except as set forth on Schedule A, such Equityholder has full voting power, with respect to such Equityholder's Subject Shares, and full power of disposition, full power to issue instructions with respect to the matters set forth herein and full power to agree to all of the matters set forth in this Agreement, in each case with respect to all of such Equityholder's Subject Shares. None of such Equityholder's Subject Shares are subject to any proxy, voting trust or other agreement or arrangement with respect to the voting of the Subject Shares, except as provided hereunder.

2.4. **Reliance**. Such Equityholder has had the opportunity to review the Merger Agreement and this Agreement with counsel of such Equityholder's own choosing. Such Equityholder understands and acknowledges that the Company is entering into the Merger Agreement in reliance upon such Equityholder's execution, delivery and performance of this Agreement.

2.5. **Absence of Litigation**. With respect to such Equityholder, as of the date hereof, there is no action, suit, investigation or proceeding pending against, or, to the knowledge of such Equityholder, threatened against, such Equityholder or any of such Equityholder's properties or assets (including the shares of Arrow Common Stock and Options) that could reasonably be expected to prevent, delay or impair the ability of such Equityholder to perform its obligations hereunder or to consummate the transactions contemplated hereby.

2.6 **No Brokers**. Neither such Equityholder nor any of its Representatives or Affiliates has employed or made any agreement with any broker, finder or similar agent or any Person which will result in the obligation of such Equityholder, the Company, Arrow, or any of their respective Affiliates to pay any finder's fee, brokerage fees or commission or similar payment in connection with the transactions contemplated hereby.

ARTICLE III
REPRESENTATIONS AND WARRANTIES OF THE COMPANY

The Company represents and warrant to each Equityholder that:

3.1. **Organization; Authorization**. The Company is a Delaware corporation. The consummation of the transactions contemplated hereby are within the Company's corporate powers and have been duly authorized by all necessary corporate actions on the part of the Company. The Company has full power and authority to execute, deliver and perform this Agreement.

3.2. **Binding Agreement**. This Agreement has been duly authorized, executed and delivered by the Company and constitutes a valid and binding obligation of the Company enforceable against the Company in accordance with its terms, subject to the Enforceability Exceptions.

ARTICLE IV
MISCELLANEOUS

4.1. **Notices**. All notices, requests and other communications to either party hereunder shall be in writing (including facsimile transmission) and shall be given, (a) if to the Company, in accordance with the provisions of the Merger Agreement and (b) if to any Equityholder, to such Equityholder's address set forth on a signature page hereto, or to such other address as such Equityholder may hereafter specify in writing to the Company for such purpose.

4.2. **Termination**. This Agreement shall terminate automatically and become void and of no further force or effect, without any notice or other action by any Person, upon the earlier of (a) the termination of the Merger Agreement in accordance with its terms and (b) the Closing. Upon termination of this Agreement, no party shall have any further obligations or liabilities under this Agreement; provided, however, that the provisions of this Article IV shall survive any termination of this Agreement.

4.3. **Amendments and Waivers**. Any provision of this Agreement may be amended or waived if such amendment or waiver is in writing and is signed, in the case of an amendment, by each party to this Agreement or, in the case of a waiver, by the party against whom the waiver is to be effective. No failure or delay by either party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

4.4. **Binding Effect; Benefit; Assignment**. The provisions of this Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and permitted assigns. Except as set forth in Section 1.3, no provision of this Agreement is intended to confer any rights, benefits, remedies, obligations or liabilities hereunder upon any person other than the parties hereto and their respective successors and assigns. Neither party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement without the consent of the other party hereto.

4.5. **Governing Law; Venue**. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware without regard to its rules of conflict of laws. The Company and each Equityholder

hereby irrevocably and unconditionally consents to submit to the exclusive jurisdiction of the Delaware Court of Chancery, or if such court does not have proper jurisdiction, then the Federal court of the U.S. located in the State of Delaware, and appellate courts therefrom, (collectively, the "Delaware Courts") for any litigation arising out of or relating to this Agreement and the transactions contemplated hereby (and agrees not to commence any litigation relating thereto except in such courts), waives any objection to the laying of venue of any such litigation in the Delaware Courts and agrees not to plead or claim in any Delaware Court that such litigation brought therein has been brought in any inconvenient forum. Each of the parties hereto agrees that service of process may be made on such party by prepaid certified mail with a proof of mailing receipt validated by the United States Postal Service constituting evidence of valid service. Service made pursuant to the foregoing shall have the same legal force and effect as if served upon such party personally within the State of Delaware. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATED TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT.

4.6. **Counterparts**. The parties may execute this Agreement in one or more counterparts, each of which will be deemed an original and all of which, when taken together, will be deemed to constitute one and the same agreement. Any signature page hereto delivered by facsimile machine or by e-mail (including in portable document format (pdf), as a joint photographic experts group (jpg) file, electronic signature, or otherwise) shall be binding to the same extent as an original signature page, with regard to any agreement subject to the terms hereof or any amendment thereto and may be used in lieu of the original signatures for all purposes. Each party that delivers such a signature page agrees to later deliver an original counterpart to any other party that requests it.

4.7. **Entire Agreement**. This Agreement constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all prior agreements and understandings, both oral and written, between the parties with respect to its subject matter.

4.8. **Severability**. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction or other Governmental Authority to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions of this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to either party. Upon such a determination, the parties shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible in an acceptable manner in order that the transactions contemplated hereby be consummated as originally contemplated to the fullest extent possible.

4.9. **Specific Performance**. The parties hereto agree that the Company would be irreparably damaged if for any reason any Equityholder fails to perform any of its obligations under this Agreement and that the Company may not have an adequate remedy at law for money damages in such event. Accordingly, the Company shall be entitled to specific performance and injunctive and other equitable relief to prevent breaches of this Agreement or to enforce specifically the performance of the terms and provisions hereof in any Delaware Court, in addition to any other remedy to which they are entitled at law or in equity, in each case without posting bond or other security, and without the necessity of proving actual damages.

4.10. **Headings**. The Section headings contained in this Agreement are inserted for convenience only and shall not affect in any way the meaning or interpretation of this Agreement.

4.11. **No Presumption**. This Agreement shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting or causing any instrument to be drafted.

4.12. **Further Assurances**. Each of the parties hereto will execute and deliver, or cause to be executed and delivered, all further documents and instruments and use their respective reasonable best efforts to take, or cause

to be taken, all actions and to do, or cause to be done, all things necessary under applicable Law to perform their respective obligations as expressly set forth under this Agreement.

4.13. **Interpretation**. Unless the context otherwise requires, as used in this Agreement: (a) "or" is not exclusive; (b) "including" and its variants mean "including, without limitation" and its variants; (c) words defined in the singular have the parallel meaning in the plural and vice versa; (d) words of one gender shall be construed to apply to each gender; and (e) the terms "Article," "Section" and "Schedule" refer to the specified Article, Section or Schedule of or to this Agreement.

4.14. **Obligations; Capacity as Equityholder**. The obligations of each Equityholder under this Agreement are several and not joint, and no Equityholder shall have any liability or obligation under this Agreement for any breach hereunder by any other Equityholder. Each Equityholder signs this Agreement solely in such Equityholder's capacity as a holder of shares of Arrow Common Stock and/or a holder of Options, and not in such Equityholder's capacity as a director, officer or employee of Arrow or in such Equityholder's capacity as a trustee or fiduciary of any employee benefit plan or trust. Notwithstanding anything herein to the contrary, nothing herein shall in any way restrict a director or officer of Arrow in the exercise of his or her fiduciary duties as a director or officer of Arrow or in his or her capacity as a trustee or fiduciary of any employee benefit plan or trust, or prevent any director or officer of Arrow or any trustee or fiduciary of any employee benefit plan or trust from taking any action in his or her capacity as such director, officer, trustee or fiduciary.

4.15. **Conversion or Exercise**. Nothing contained in this Agreement shall require any Equityholder (or shall entitle any proxy of such Equityholder) to (a) convert, exercise or exchange any Option, warrants or convertible securities in order to obtain any underlying Subject Shares or (b) vote, or execute any consent with respect to, any Subject Shares underlying such Options, warrants or convertible securities that have not yet been issued as of the applicable record date for that vote or consent.

4.16. **Representations and Warranties**. The representations and warranties contained in this Agreement and in any certificate or other writing delivered pursuant hereto shall not survive the Closing or the termination of this Agreement.

4.17. **No Agreement Until Executed**. Irrespective of negotiations among the parties or the exchanging of drafts of this Agreement, this Agreement shall not constitute or be deemed to evidence a contract, agreement, arrangement or understanding between the parties hereto unless and until (a) the Arrow Board has approved, for purposes of any applicable anti-takeover laws and regulations, and any applicable provision of Arrow's organizational documents, the possible acquisition of the Company by Arrow pursuant to the Merger Agreement and (b) the Merger Agreement is executed by all parties thereto.

(SIGNATURE PAGES FOLLOW)

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the date first written above.

ACHIEVE LIFE SCIENCE, INC.

By: _____
Name: _____
Title: _____

[Signature Page to Support Agreement]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the date first written above.

[ENTITY OR INDIVIDUAL EQUITYHOLDER]

By: _____

Name: _____

Title: _____

[Signature Page to Support Agreement]

Schedule A

Name of Equityholder	No. of Shares of Arrow Common Stock
Scott Cormack	129,428
Jack Goldstein	17,500
David Smith	9,500
Neil Clendennin	22,421
Martin Mattingly	10,500
John Bencich	9,484
Cindy Jacobs	77,416
Michelle Griffin	73,743
Stewart Parker	12,500

Name of Equityholder	Options to Purchase Arrow Common Stock
Scott Cormack	565,000
Jack Goldstein	59,461
David Smith	50,500
Neil Clendennin	48,500
Martin Mattingly	50,500
John Bencich	177,500
Cindy Jacobs	264,500
Michelle Griffin	271,000
Stewart Parker	50,461

ANNEX H

Lock-up Agreement

[●], 2017

OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway
Bothell, WA 98011

Re: Lock-up Agreement

Ladies and Gentlemen:

The undersigned signatory of this lock-up agreement (this "***Lock-Up Agreement***") understands that Achieve Life Science, Inc. (the "***Company***") proposes to enter into a Merger Agreement (the "***Merger Agreement***") with OncoGenex Pharmaceuticals, Inc. ("***Arrow***"), Ash Acquisition Sub, Inc., and Ash Acquisition Sub 2, Inc. Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Merger Agreement.

As material inducement to each of the Parties to enter into the Merger Agreement and to consummate the transactions contemplated by the Merger Agreement, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned hereby irrevocably agrees that, subject to the exceptions set forth herein, without the prior written consent of Arrow, the undersigned will not, during the period commencing upon the Closing and ending on the date that is 180 days after the Closing Date (the "***Lock-Up Period***"):

(i) offer, pledge, sell, contract to sell, sell any option, warrant or contract to purchase, purchase any option, warrant or contract to sell, grant any option, right or warrant to purchase, transfer or dispose of, directly or indirectly, any shares of Arrow Capital Stock or any securities convertible into or exercisable or exchangeable for Arrow Capital Stock (including without limitation, Arrow Capital Stock or such other securities which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant), in each case, that are owned of record or beneficially by the undersigned (including holding as a custodian), or publicly disclose the intention to make any such offer, sale, purchase, pledge, grant, transfer or disposition,

(ii) enter into any swap, short sale, hedge or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Arrow Capital Stock or such other securities described in clause (i) that are currently or hereafter owned either of record or beneficially (as defined in Rule 13d-3 under the Exchange Act) by the undersigned and whether any such transaction described in clause (i) above or this clause (ii) is to be settled by delivery of Arrow Capital Stock or such other securities, in cash or otherwise, or

(iii) make any demand for or exercise any similar right with respect to the registration of any shares of Arrow Capital Stock or any security convertible into or exercisable or exchangeable for Arrow Capital Stock.

The restrictions and obligations contemplated by this Lock-Up Agreement shall not apply to:

(a) transfers of Arrow Capital Stock or securities convertible into or exercisable or exchangeable for Arrow Capital Stock:

(i) if the undersigned is a natural person, (A) as a bona fide gift to any person related to the undersigned by blood or adoption who is an immediate family member of the undersigned, or by marriage

or domestic partnership (a "***Family Member***"), or to a trust formed for the benefit of the undersigned or any of the undersigned's Family Members, (B) to the undersigned's estate, following the death of the undersigned, by will, intestacy or other operation of law, (C) as a bona fide gift to a charitable organization, (D) by operation of law pursuant to a qualified domestic order or in connection with a divorce settlement or (E) to any partnership, corporation or limited liability company which is controlled by the undersigned and/or by any such Family Member(s);

(ii) if the undersigned is a corporation, partnership or other business entity, (A) to another corporation, partnership or other business entity that is an affiliate (as defined under Rule 12b-2 of the Exchange Act) of the undersigned, including investment funds or other entities under common control or management with the undersigned, (B) as a distribution or dividend to equity holders (including, without limitation, general or limited partners and members) of the undersigned (including upon the liquidation and dissolution of the undersigned pursuant to a plan of liquidation approved by the undersigned's equity holders) or (C) as a bona fide gift to a charitable organization; or

(iii) if the undersigned is a trust, to any grantors or beneficiaries of the trust;

provided that, in the case of any transfer or distribution pursuant to this clause (a), such transfer is not for value and each donee, heir, beneficiary or other transferee or distributee shall sign and deliver to Arrow a lock-up agreement in the form of this Lock-Up Agreement with respect to the shares of Arrow Capital Stock or such other securities that have been so transferred or distributed;

(b) the exercise of options to purchase, or subscribe for, shares of Arrow Capital Stock and any related transfer of shares of Arrow Capital Stock to Arrow (i) deemed to occur upon the cashless exercise of such options, or (ii) for the purpose of paying the exercise price of such options or for paying taxes (including estimated taxes) due as a result of the exercise of such options (or the disposition to Arrow of any shares of restricted stock granted pursuant to the terms of any employee benefit plan or restricted stock purchase agreement);

(c) transfers or other dispositions by the undersigned of shares of Arrow Capital Stock purchased by the undersigned following the Closing in the open market; or

(d) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of Arrow Capital Stock; *provided* that such plan does not provide for the transfer of shares of Arrow Capital Stock during the Lock-Up Period;

and *provided, further*, that with respect to any transfer or distribution pursuant to each of (a), (b), (c) or (d) above, no filing by any party (donor, donee, transferor, transferee, distributor or distributee, as the case may be) under the Exchange Act or other public announcement shall be required or shall be made voluntarily in connection with such transfer or disposition during the Lock-Up Period (other than in respect of a required filing under the Exchange Act in connection with the exercise of an option to purchase Arrow Capital Stock following such individual's termination of employment with Arrow that would otherwise expire during the Lock-Up Period, provided that, for the avoidance of doubt, the underlying shares of Arrow Capital Stock shall continue to be subject to the restrictions on transfer set forth herein).

Any attempted transfer in violation of this Lock-Up Agreement will be of no effect and null and void, regardless of whether the purported transferee has any actual or constructive knowledge of the transfer restrictions set forth in this Lock-Up Agreement, and will not be recorded on the share register of Arrow. In order to ensure compliance with the restrictions referred to herein, the undersigned agrees that Arrow and the Transfer Agent are hereby authorized to decline to make any transfer of Arrow Capital Stock or securities convertible into or exercisable or exchangeable for Arrow Capital Stock if such transfer would constitute a violation or breach of this Lock-Up Agreement. Arrow may cause the legend set forth below, or a legend substantially equivalent

thereto, to be placed upon any certificate(s) or other documents, ledgers or instruments evidencing the undersigned's ownership of Arrow Capital Stock:

THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO AND MAY ONLY BE TRANSFERRED IN COMPLIANCE WITH A LOCK-UP AGREEMENT, A COPY OF WHICH IS ON FILE AT THE REGISTERED OFFICE OF ARROW.

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Lock-Up Agreement and that, upon request, the undersigned will execute any additional documents necessary in connection with the enforcement thereof. All authority herein conferred or agreed to be conferred hereunder, and any obligations of the undersigned, shall be binding upon the successors, assigns, heirs or personal representatives of the undersigned.

In the event that any holder of shares of Arrow Capital Stock or any securities convertible into or exercisable or exchangeable for Arrow Capital Stock that is subject to an agreement which is substantially similar to this Lock-Up Agreement entered into by such holder, other than Arrow or the undersigned, is permitted by Arrow to sell or otherwise transfer or dispose of shares of Arrow Capital Stock or any securities convertible into or exercisable or exchangeable for Arrow Capital Stock for value other than as permitted by this Lock-Up Agreement or a substantially similar agreement entered into by such holder, the same percentage of shares of Arrow Capital Stock or any securities convertible into or exercisable or exchangeable for Arrow Capital Stock held by the undersigned shall be immediately and fully released on the same terms from any remaining restrictions set forth herein.

The undersigned understands that, if the Merger Agreement is terminated in accordance with its terms prior to the Closing, the undersigned shall be automatically released from all restrictions and obligations under this Lock-Up Agreement upon such termination and this Lock-Up Agreement shall terminate with immediate effect.

This Lock-Up Agreement, and any claim, controversy or dispute arising under or related to this Lock-Up Agreement, shall be governed by and construed in accordance with the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of laws.

Any and all remedies herein expressly conferred upon Arrow will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity, and the exercise by Arrow of any one remedy will not preclude the exercise of any other remedy. The undersigned agrees that irreparable damage would occur to Arrow in the event that any of the provisions of this Lock-Up Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that Arrow shall be entitled to an injunction or injunctions to prevent breaches of this Lock-Up Agreement and to enforce specifically the terms and provisions hereof in any court of the United States or any state having jurisdiction, this being in addition to any other remedy to which Arrow is entitled at law or in equity, and the undersigned waives any bond, surety or other security that might be required of Arrow with respect thereto.

This Lock-Up Agreement may be executed in several counterparts, each of which shall be deemed an original and all of which shall constitute one and the same instrument. The exchange of a fully executed Lock-Up Agreement (in counterparts or otherwise) by Arrow and the undersigned by facsimile or electronic transmission in .PDF format shall be sufficient to bind such parties to the terms and conditions of this Lock-Up Agreement.

(Signature Page Follows)

Very truly yours,

By: _____
Name:
Title:

Accepted and Agreed by
OncoGenex Pharmaceuticals, Inc.:

By _____
Name: _____
Title: _____

PART II

INFORMATION NOT REQUIRED IN PROXY STATEMENT/PROSPECTUS/INFORMATION STATEMENT

Item 20. ***Indemnification of Directors and Officers***

As permitted by the DGCL, OncoGenex's certificate of incorporation eliminates the liability of directors to OncoGenex or its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent otherwise required by the DGCL.

The certificate of incorporation further provides that OncoGenex will indemnify any person who is or was made a party to any proceeding by reason of the fact that such person is or was a director or officer of OncoGenex against expenses, judgments, fines, penalties, and amounts paid in settlement incurred in connection therewith to the fullest extent authorized by the DGCL. OncoGenex's bylaws provide for a similar indemnity to directors and officers of OncoGenex to the fullest extent authorized by the DGCL.

OncoGenex's bylaws authorize OncoGenex's board of directors to enter into indemnification contracts with each of its officers and directors. OncoGenex has entered into indemnification contracts with each of its directors and executive officers. The indemnification contracts provide for the indemnification of directors and officers against all expenses, liability, and loss actually reasonably incurred to the fullest extent permitted by OncoGenex's certificate of incorporation, bylaws, and applicable law.

OncoGenex's bylaws also authorize OncoGenex to maintain insurance to protect any director or officer against any expense, liability, or loss, whether or not OncoGenex would have the power to indemnify such person against such expense, liability, or loss under the DGCL. OncoGenex maintains such insurance.

Item 21. ***Exhibits and Financial Statement Schedules***

(a) Exhibit Index

A list of exhibits filed with this registration statement on Form S-4 is set forth on the Exhibit Index and is incorporated herein by reference.

(b) Financial Statements

The financial statements filed with this registration statement on Form S-4 are set forth on the Financial Statement Index and is incorporated herein by reference.

Item 22. ***Undertakings***

(a) The undersigned registrant hereby undertakes

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range

may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933, to any purchaser: if the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes as follows:

(1) That, prior to any public reoffering of the securities registered hereunder through use of a prospectus which is a part of this registration statement, by any person or party who is deemed to be an underwriter within the meaning of Rule 145(c), the issuer undertakes that such reoffering prospectus will contain the information called for by the applicable registration form with respect to reofferings by persons who may be deemed underwriters, in addition to the information called for by the other items of the applicable form.

(2) That, every prospectus (i) that is filed pursuant to paragraph (c)(1) immediately preceding, or (ii) that purports to meet the requirements of Section 10(a)(3) of the Securities Act and is used in connection with an offering of securities subject to Rule 415, will be filed as a part of an amendment to the registration statement and will not be used until such amendment is effective, and that, for purposes of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(e) The undersigned registrant hereby undertakes to respond to requests for information that is incorporated by reference into this prospectus pursuant to Item 4, 10(b), 11, or 13 of this Form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.

(f) The undersigned registrant hereby undertakes to supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in the registration statement when it became effective.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-4 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Bothell, State of Washington, on May 3, 2017.

ONCOGENEX PHARMACEUTICALS, INC.

By: /s/ Scott Cormack
Scott Cormack
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

By:	/s/ Scott Cormack Scott Cormack	Chief Executive Officer, President and Director (principal executive officer)	Date: May 3, 2017
By:	/s/ John Bencich John Bencich	Chief Financial Officer (principal financial and accounting officer)	Date: May 3, 2017
By:	* Neil Clendeninn	Director	Date: May 3, 2017
By:	* Jack Goldstein	Director	Date: May 3, 2017
By:	* Martin Mattingly	Director	Date: May 3, 2017
By:	* H. Stewart Parker	Director	Date: May 3, 2017
By:	* David Smith	Director	Date: May 3, 2017

*By: /s/ John Bencich
John Bencich
Attorney-in-Fact

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EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
2.1**	Agreement and Plan of Merger and Reorganization, dated as of January 5, 2017, by and among OncoGenex Pharmaceuticals, Inc., Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc. and Achieve Life Science, Inc.	8-K	033-80623	2.1	January 5, 2017	
2.2	Amendment No. 1 to Agreement and Plan of Merger and Reorganization, dated as of May 3, 2017, by and among OncoGenex Pharmaceuticals, Inc., Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc. and Achieve Life Science, Inc.					X
3.1	Second Amended and Restated Certificate of Incorporation filed on May 24, 2013	8-K	033-80623	3.1	May 29, 2013	
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation	8-K	033-80623	3.1	May 22, 2015	
3.1	Sixth Amended and Restated Bylaws of OncoGenex Pharmaceuticals, Inc.	8-K	033-80623	3.1	January 5, 2017	
4.1	Specimen Certificate of Common Stock	10-Q	000-21243	4.1	November 10, 2008	
4.7	Form of Series A Warrant	8-K	033-80623	4.1	June 27, 2014	
4.8	Form of Series A-1 Warrant	8-K	033-80623	4.1	April 30, 2015	
4.9	Form of Pre-Funded Series B Warrant	8-K	033-80623	4.2	June 27, 2014	
4.10	Form of Series B Warrant	8-K	033-80623	4.3	June 27, 2014	
5.1	Opinion of Fenwick & West LLP regarding the validity of securities.					X
8.1	Opinion of Fenwick & West LLP regarding tax matters related to the merger					X
8.2	Opinion of Paul Hastings LLP regarding tax matters related to the merger					X

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Exhibit Number	Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
8.3	Opinion of Fenwick & West LLP regarding tax matters related to the contingent value rights					X
10.1	Sonus Pharmaceuticals, Inc. 2007 Performance Incentive Plan (the "2007 Plan")	DEF14A	000-21243	Appendix A	April 3, 2007	
10.2	Form of Sonus Pharmaceuticals, Inc. Stock Option Agreement (pertaining to the 2007 Plan)	10-Q	000-21243	10.1	November 9, 2007	
10.3	Form of OncoGenex Pharmaceuticals, Inc. 2010 Stock Option Agreement	8-K	033-80623	10.1	June 14, 2010	
10.4	Form of OncoGenex Pharmaceuticals, Inc. 2010 Restricted Stock Purchase Agreement	8-K	033-80623	10.2	June 14, 2010	
10.5	Form of OncoGenex Pharmaceuticals, Inc. 2010 Restricted Stock Unit Agreement	10-Q	033-80623	10.2	November 3, 2011	
10.6	OncoGenex Pharmaceuticals, Inc. 2010 Performance Incentive Plan, as amended and restated	DEF 14A	033-80623	A	April 16, 2015	
10.7	Form of Indemnification Agreement for Officers and Directors of the Company	S-1	33-96112	10.19	September 25, 1995	
10.8	Form of Indemnification Agreement between OncoGenex Technologies Inc. and each of Scott Cormack and Cindy Jacobs	F-1	333-139293	10.7	December 13, 2006	
10.9	Form of Indemnification Agreement between OncoGenex Technologies Inc. and Neil Clendeninn	F-1	333-139293	10.8	December 13, 2006	
10.10	Employment Agreement between OncoGenex Technologies Inc. and the Company and Scott Cormack dated as of November 4, 2009	10-Q	033-80623	10.25	November 5, 2009	

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Exhibit Number	Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
10.11	Employment Agreement between the Company and Cindy Jacobs dated as of November 3, 2009	10-Q	033-80623	10.27	November 5, 2009	
10.12	Employment Agreement between OncoGenex Pharmaceuticals, Inc. and John Bencich	8-K	033-80623	10.1	August 7, 2014	
10.13+	Collaboration and License Agreement between OncoGenex Technologies Inc. and Isis Pharmaceuticals, Inc. effective as of January 5, 2005 (OGX-427)	F-1, Amendment No. 1	333-139293	10.11	January 29, 2007	
10.14+	License Agreement between OncoGenex Technologies Inc. and the University of British Columbia effective as of April 5, 2005, and Amending Agreement dated as of August 30, 2006 (OGX-427)	F-1, Amendment No. 1	333-139293	10.14	January 29, 2007	
10.15	Second Amending Agreement as of August 7, 2008 between the University of British Columbia and OncoGenex Technologies Inc. (OGX-427)	10-Q	000-21243	10.40	November 10, 2008	
10.16	Office Lease by and between Grosvenor International (Atlantic Freeholds) Limited and OncoGenex Pharmaceuticals, Inc., dated February 11, 2015	8-K	033-80623	10.1	February 12, 2015	
10.17	Form of Support Agreement, by and between OncoGenex Pharmaceuticals, Inc. and certain directors, officers and stockholders of Achieve Life Science, Inc.	8-K	033-80623	10.1	January 5, 2017	
10.18	Form of Support Agreement, by and between Achieve Life Science, Inc. and certain directors and officers of OncoGenex Pharmaceuticals, Inc.	8-K	033-80623	10.2	January 5, 2017	

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Exhibit Number	Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
10.19	Form of Lock-Up Agreement, by and between OncoGenex Pharmaceuticals, Inc. and certain directors, officers and stockholders of Achieve Life Science, Inc. and OncoGenex Pharmaceuticals, Inc.	8-K	033-80623	10.3	January 5, 2017	
10.20	Form of CVR Agreement, by and between OncoGenex Pharmaceuticals, Inc., Achieve Life Science, Inc. and a Rights Agent to be determined.	8-K	033-80623	10.4	January 5, 2017	
10.21++	Exclusive License Agreement, by and between Sopharma Joint Stock Company and Extab Corporation, dated May 26, 2009.					X
10.22++	Variation of Contract, by and between Sopharma AD and Extab Corporation, dated May 14, 2015.					X
10.23++	Commercial Agreement on Supply of Pharmaceutical Products, by and between Sopharma AD and Extab Corporation, dated February 1, 2010.					X
10.24++	Variation of Contract, by and between Sopharma AD and Extab Corporation, dated May 14, 2015.					X
10.25++	Technical and Quality Agreement, by and between Sopharma AD and Extab Corporation, dated May 14, 2015.					X
10.26	Consulting Agreement, by and between Ricanto Limited and Extab Pharma, Inc., dated September 17, 2015.					X
10.27++	License of Technology, by and between University of Bristol and Achieve Life Science, Inc., dated July 13, 2016					X

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Exhibit Number	Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
10.28	Letter Agreement dated December 14, 2016 between Achieve Life Science, Inc. and Sopharma AD					X
21.1	Subsidiaries of the Registrant	10-K	033-80623	21.1	February 23, 2017	
23.1	Consent of Ernst & Young LLP					X
23.2	Consent of PricewaterhouseCoopers LLP					X
23.3	Consent of Fenwick & West LLP (included in Exhibit 5.1 hereto)					X
23.4	Consent of Fenwick & West LLP (included in Exhibit 8.1 hereto)					X
23.5	Consent of Paul Hastings LLP (included in Exhibit 8.2 hereto)					X
23.6	Consent of Fenwick & West LLP (included in Exhibit 8.3 hereto)					X
24.1	Power of Attorney (included on the signature page hereto)	S-4	333-216961	24.1	March 27, 2017	
99.1*	Form of Proxy Card for the OncoGenex Pharmaceuticals, Inc. Special Meeting of Stockholders.					
99.2	Consent of MTS Securities, LLC					X
99.3	Proposed Certificate of Amendment to the Second Amended and Restated Certificate of Incorporation of OncoGenex Pharmaceuticals, Inc. (included as Annex B to the proxy statement/prospectus/information statement forming a part of this Registration Statement).	S-4	333-216961	99.3	March 27, 2017	

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Exhibit Number	Description	Incorporated by Reference				Filed/ Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
99.4	Proposed Certificate of Amendment to the Second Amended and Restated Certificate of Incorporation of OncoGenex Pharmaceuticals, Inc. (included as Annex C to the proxy statement/prospectus/information statement forming a part of this Registration Statement).	S-4	333-216961	99.4	March 27, 2017	
99.5	Consent of Richard Stewart to be named as director.	S-4	333-216961	99.5	March 27, 2017	
99.6	Consent of Dr. Anthony Clarke to be named as director.	S-4	333-216961	99.6	March 27, 2017	
101.INS	XBRL Instance Document					
101.SCH	XBRL Taxonomy Extension Schema Document					
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					

* To be filed by amendment.

** The schedules and exhibits to the Merger Agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the Securities and Exchange Commission upon request.

\+ Confidential portions of this exhibit have been omitted and filed separately with the Commission pursuant to confidential treatment granted under Rule 24b-2 promulgated under the Securities Exchange Act of 1934, as amended.

++ Confidential portions of this exhibit have been omitted and filed separately with the Commission pursuant to a confidential treatment request under Rule 406 promulgated under the Securities Act of 1933, as amended.

AMENDMENT NO. 1
TO
AGREEMENT AND PLAN OF MERGER AND REORGANIZATION

This Amendment No. 1 to Agreement and Plan of Merger and Reorganization (this "**Amendment**") is made as of May 3, 2017 by and among OncoGenex Pharmaceuticals, Inc., a Delaware corporation ("**Arrow**"), Ash Acquisition Sub, Inc., a Delaware corporation ("**Merger Sub 1**"), Ash Acquisition Sub 2, Inc., a Delaware corporation ("**Merger Sub 2**"; together with Merger Sub 1, "**Merger Subs**"), and Achieve Life Science, Inc. (the "**Company**") in certain respects that certain Agreement and Plan of Merger and Reorganization (the "**Merger Agreement**"), dated as of January 5, 2017, previously entered into by and among Arrow, Merger Sub 1, Merger Sub 2 and the Company. Capitalized terms used but not defined in this Amendment shall have the meanings given to such terms in the Merger Agreement.

RECITALS

WHEREAS, Arrow, Merger Sub 1, Merger Sub 2 and the Company are parties to the Merger Agreement.

WHEREAS, Arrow, Merger Sub 1, Merger Sub 2 and the Company desire to amend the Merger Agreement on the terms and conditions set forth herein.

WHEREAS, Section 10.2 of the Merger Agreement provides that the Merger Agreement may be amended with the approval of the respective boards of directors of the Company, Merger Subs and Arrow at any time (whether before or after the adoption and approval of this Agreement by the Company's stockholders or before or after the approval of issuance of shares of Arrow Common Stock in the First Merger by Arrow's stockholders) by an instrument in writing signed on behalf of each of the Company, Merger Subs and Arrow.

WHEREAS, the respective boards of directors of the Company, Merger Subs and Arrow have approved the amendment of the Merger Agreement pursuant to this Amendment.

NOW, THEREFORE, in consideration of the foregoing recitals and for other good and valuable consideration, the adequacy and sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

1. Amendment of Definition used in the Merger Agreement. The following defined term used in the Merger Agreement, as defined in Exhibit A to the Merger Agreement, shall bear the following meaning:

"***Arrow Reverse Stock Split***" shall mean a reverse stock split of Arrow Common Stock not to exceed a combination of 15 for 1 that the Arrow Board (in consultation with the Company Board) determines is necessary or advisable in order for the Arrow Common Stock to satisfy one or more of the requirements for qualifying the Arrow Common Stock for quotation on NASDAQ and in compliance with the terms of this Agreement, the Mergers and the Contemplated Transactions.

2. No Other Changes. Except as expressly amended by this Amendment, all of the terms of the Merger Agreement shall remain in full force and effect.

3. General Provisions.

3.1. Effect of this Amendment. In the event of any inconsistency or conflict between the provisions of the Merger Agreement and this Amendment, the provisions of this Amendment will prevail and govern. All references to the Merger Agreement or in any exhibit or schedule thereto shall hereinafter refer to the Merger Agreement as amended by this Amendment.

3.2. Governing Law. This Amendment shall be governed by the provisions of Section 10.5 of the Merger Agreement.

3.3. Counterparts. This Amendment may be executed in any number of counterparts, each of which shall be enforceable against the parties actually executing such counterparts, and all of which together shall constitute one instrument.

[Signature Pages Follow]

The parties have executed this Amendment No. 1 to Agreement and Plan of Merger and Reorganization as of the date first written above.

ONCOGENEX PHARMACEUTICALS, INC.

By: /s/ Scott Cormack
Name: Scott Cormack
Title: President & CEO

ASH ACQUISITION SUB, INC.

By: /s/ Scott Cormack
Name: Scott Cormack
Title: President

ASH ACQUISITION SUB 2, INC.

By: /s/ Scott Cormack
Name: Scott Cormack
Title: President

ACHIEVE LIFE SCIENCE, INC.

By: /s/ Richard Stewart
Name: Richard Stewart
Title: Chairman

Exhibit 5.1

Fenwick
FENWICK & WEST LLP
1191 SECOND AVENUE, 10TH FLOOR SEATTLE, WA 98101
TEL: 206.389.4510 FAX: 206.389.4511 WWW.FENWICK.COM

May 3, 2017

OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway
Bothell, Washington 98011

Gentlemen and Ladies:

At your request, we have examined the Registration Statement on Form S-4 (File Number 333-216961) filed by OncoGenex Pharmaceuticals, Inc., a Delaware corporation (the "***Company***"), with the Securities and Exchange Commission (the "***Commission***") on March 27, 2017, as amended (the "***Registration Statement***") in connection with the registration under the Securities Act of 1933, as amended (the "***Securities Act***"), of an aggregate of 90,076,564 shares of the Company's Common Stock (the "***Stock***").

In connection with our opinion expressed below we have examined originals or copies of the Company's Second Amended and Restated Certificate of Incorporation, as amended (the "***Certificate***") and Sixth Amended and Restated Bylaws (the "***Bylaws***"), the Agreement and Plan of Merger and Reorganization pursuant to which the Stock will be issued (the "***Merger Agreement***"), certain corporate proceedings of the Company's board of directors and stockholders relating to the Registration Statement, the Certificate, the Bylaws and the Merger Agreement, and such other agreements, documents, certificates and statements of the Company, its transfer agent and public or government officials, as we have deemed advisable, and have examined such questions of law as we have considered necessary. We have assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures on documents submitted to us, the conformity to originals of all documents submitted to us as copies, and the absence of any undisclosed termination, waiver or amendment to any document reviewed by us. In giving our opinion, we have also relied upon a good standing certificate issued by the Delaware Secretary of State and representations made to us by the Company.

We render this opinion only with respect to, and express no opinion herein concerning the application or effect of the laws of any jurisdiction other than, the existing laws of the Delaware General Corporation Law.

In connection with our opinion expressed below, we have assumed that, at or prior to the time of the delivery of any shares of Stock, the Registration Statement will have been declared effective under the Securities Act of 1933, as amended, that the registration will apply to such shares of Stock and will not have been modified or rescinded and that there will not have occurred any change in law affecting the validity of the issuance of such shares of Stock. In addition, we have assumed that the Company will have a sufficient number of authorized and unissued shares of Common Stock available for issuance under the Certificate, when the Stock is issued in accordance with the terms of the Merger Agreement without the breach or violation of any other agreement, commitment or obligation of the Company.

Based upon the foregoing, we are of the opinion that the up to 90,076,564 shares of Stock to be issued by the Company, when issued in accordance with the terms of the Merger Agreement, and delivered in the manner and for the consideration stated in the Registration Statement and the Proxy Statement/Prospectus/Information Statement, will be validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement and further consent to all references to us, if any, in the Registration Statement, the Proxy Statement/Prospectus/Information Statement constituting a part thereof and any amendments thereto. We do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder. This opinion is intended solely for use in connection with issuance of the Stock, in accordance with the terms of the Merger Agreement, pursuant to the Registration Statement and is not to be relied upon for any other purpose. In providing this letter, we are opining only as to the specific legal issues expressly set forth above, and no opinion shall be inferred as to any other matter or matters. This opinion is rendered on, and speaks only as of, the date of this letter first written above, and does not address any potential change in facts of law that may occur after the date of this opinion letter. We assume no obligation to advise you of any fact, circumstance, event or change in the law or the facts that may hereafter be brought to our attention, whether or not such occurrence would affect or modify any of the opinions expressed herein.

Very truly yours,

/s/ FENWICK & WEST LLP

Exhibit 8.1

FENWICK & WEST LLP
1191 SECOND AVENUE, 10TH FLOOR SEATTLE, WA 98101
TEL: 206.389.4510 FAX: 206.389.4511 WWW.FENWICK.COM

May 3, 2017

OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway
Bothell, Washington 98011

Re: Merger of Achieve Life Science, Inc. and OncoGenex Pharmaceuticals, Inc.

Ladies and Gentlemen,

We have acted as your counsel in connection with the proposed merger of Ash Acquisition Sub, Inc., a Delaware corporation ("Merger Sub 1"), and a wholly owned subsidiary of OncoGenex Pharmaceuticals, Inc., a Delaware corporation ("OncoGenex"), with and into Achieve Life Science, Inc., a Delaware corporation ("Achieve"), (the "First Merger") with Achieve becoming a wholly-owned subsidiary of OncoGenex and the surviving corporation of the First Merger (the "Initial Surviving Corporation"), and, promptly following the First Merger and as part of the same plan and arrangement, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc. ("Merger Sub 2"), a Delaware corporation and wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity in the second merger as a direct wholly owned subsidiary of OncoGenex (the First Merger and the second merger, together, are referred to as the "Merger") in accordance with that certain Agreement and Plan of Merger and Reorganization (the "Merger Agreement") dated as of January 5, 2017. The Merger is described in the Registration Statement on Form S-4 of OncoGenex (as amended or supplemented, the "Registration Statement") filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended, including the proxy statement/prospectus/information statement forming a part thereof (the "Proxy Statement/Prospectus/Information Statement"). At your request, and in connection with the filing of the Registration Statement, we are rendering our opinion that the Merger will constitute a "reorganization" within the meaning of Section 368 of the U.S. Internal Revenue Code of 1986, as amended (the "Code").

In rendering our opinion, we have examined the following documents (the "Documents"):

(a) The Merger Agreement;

(b) The Registration Statement;

(c) Certain representations and other statements made by OncoGenex and Achieve in letters delivered to us in connection with this opinion; and

(d) Such other documents and records as we have deemed necessary in order to enable us to render our opinion.

In rendering our opinion, we have assumed, without any independent investigation or verification of any kind, that all of the information as to factual matters contained in the Documents is true, correct, and complete. Any inaccuracy with respect to factual matters contained in the Documents or incompleteness in our understanding of the facts could alter the conclusion reached in our opinion.

In addition, for purposes of rendering our opinion, we have assumed with your permission that (i) all signatures on all Documents reviewed by us are genuine, (ii) all Documents submitted to us as originals are true and correct, (iii) all Documents submitted to us as copies are true and correct copies of the originals thereof, (iv) each natural person signing any Document reviewed by us had the legal capacity to do so, and (v) the Merger and the transactions contemplated in the Merger Agreement will be effected in accordance with the terms thereof.

It is our opinion that the Merger will constitute a reorganization within the meaning of Section 368(a) of the Code. Subject to the limitations and qualifications set forth in this letter and the section titled “Material U.S. Federal Income Tax Consequences of the Merger” of the Proxy Statement/Prospectus/Information Statement, we confirm that the section titled “Material U.S. Federal Income Tax Consequences of the Merger” of the Proxy Statement/Prospectus/Information Statement constitutes our opinion of the material U.S. federal income tax consequences of the Merger. Other than that expressed therein, we express no opinion on the tax consequences of the Merger under state, local and foreign tax laws.

This opinion is being rendered solely in connection with the filing of the Registration Statement. This opinion is rendered only as of the date hereof, and we undertake no obligation to supplement, update or revise the opinion after the date hereof to reflect any changes (including changes that have retroactive effect) in applicable law or factual matters arising subsequent to the date hereof or the impact of any information, document, certificate, record, statement, representation, covenant, agreement or assumption relied upon herein that becomes untrue, incorrect or incomplete.

Our opinion is based upon the Code, applicable U.S. Treasury Regulations promulgated or proposed under the Code, published administrative rulings and procedures, judicial decisions and other applicable authorities, all as in effect on the date hereof, which are subject to change (possibly with retroactive effect) so as to affect the conclusions stated herein. Moreover, there can be no assurance that our opinion will be accepted by the Internal Revenue Service or, if challenged, by a court. Further, if the facts vary from those relied upon (including if any representation, covenant, warranty or assumption upon which we have relied is inaccurate, incomplete, breached or ineffective), our opinion contained herein could be inapplicable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to us under the heading “Material U.S. Federal Income Tax Consequences of the Merger” therein. In giving such consent, we do not hereby admit that we are in the category

of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations promulgated thereunder, nor do we thereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term “experts” as used in the Securities Act.

Very truly yours,

/s/ FENWICK & WEST LLP

PAUL HASTINGS

May 2, 2017

Achieve Life Science, Inc.
30 Sunnyside Avenue
Mill Valley, California 94941

Re: Merger of Achieve Life Science, Inc. and OncoGenex Pharmaceuticals, Inc.

Ladies and Gentlemen,

We have acted as your counsel in connection with the proposed merger of Ash Acquisition Sub, Inc., a Delaware corporation ("Merger Sub 1"), and a wholly owned subsidiary of OncoGenex Pharmaceuticals, Inc., a Delaware corporation ("OncoGenex"), with and into Achieve Life Science, Inc., a Delaware corporation ("Achieve"), (the "First Merger") with Achieve becoming a wholly-owned subsidiary of OncoGenex and the surviving corporation of the First Merger (the "Initial Surviving Corporation"). Promptly following the First Merger and as part of the same plan and arrangement, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc. ("Merger Sub 2"), a Delaware corporation and wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity in the second merger as a direct wholly owned subsidiary of OncoGenex (the First Merger and the second merger, together, are referred to as the "Merger") in accordance with that certain Agreement and Plan of Merger and Reorganization (the "Merger Agreement") dated as of January 5, 2017. The Merger is described in the Registration Statement on Form S-4 of OncoGenex (as amended or supplemented, the "Registration Statement") filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended, including the proxy statement/prospectus/information statement forming a part thereof (the "Proxy Statement/Prospectus/Information Statement"). At your request, and in connection with the filing of the Registration Statement, we are rendering our opinion that the Merger will constitute a "reorganization" within the meaning of Section 368 of the U.S. Internal Revenue Code of 1986, as amended (the "Code").

In rendering our opinion, we have examined the following documents (the "Documents"):

(a) The Merger Agreement;

(b) The Registration Statement;

(c) Certain representations and other statements made by OncoGenex and Achieve in letters delivered to us in connection with this opinion; and

(d) Such other documents and records as we have deemed necessary in order to enable us to render our opinion.

In rendering our opinion, we have assumed, without any independent investigation or verification of any kind, that all of the information as to factual matters contained in the Documents is true, correct, and complete. Any inaccuracy with respect to factual matters contained in the Documents or incompleteness in our understanding of the facts could alter the conclusion reached in our opinion.

In addition, for purposes of rendering our opinion, we have assumed with your permission that (i) all signatures on all Documents reviewed by us are genuine, (ii) all Documents submitted to us as originals are true and correct, (iii) all Documents submitted to us as copies are true and correct copies of the originals thereof, (iv) each natural person signing any Document reviewed by us had the legal capacity to do so, and (v) the Merger and the transactions contemplated in the Merger Agreement will be effected in accordance with the terms thereof.

It is our opinion that the Merger will constitute a reorganization within the meaning of Section 368(a) of the Code. Subject to the limitations and qualifications set forth in this letter and the section titled “Material U.S. Federal Income Tax Consequences of the Merger” of the Proxy Statement/Prospectus/Information Statement, we confirm that the section titled “Material U.S. Federal Income Tax Consequences of the Merger” of the Proxy Statement/Prospectus/Information Statement constitutes our opinion of the material U.S. federal income tax consequences of the Merger. Other than that expressed therein, we express no opinion on the tax consequences of the Merger under state, local and foreign tax laws.

This opinion is being rendered solely in connection with the filing of the Registration Statement. This opinion is rendered only as of the date hereof, and we undertake no obligation to supplement, update or revise the opinion after the date hereof to reflect any changes (including changes that have retroactive effect) in applicable law or factual matters arising subsequent to the date hereof or the impact of any information, document, certificate, record, statement, representation, covenant, agreement or assumption relied upon herein that becomes untrue, incorrect or incomplete.

Our opinion is based upon the Code, applicable U.S. Treasury Regulations promulgated or proposed under the Code, published administrative rulings and procedures, judicial decisions and other applicable authorities, all as in effect on the date hereof, which are subject to change

(possibly with retroactive effect) so as to affect the conclusions stated herein. Moreover, there can be no assurance that our opinion will be accepted by the Internal Revenue Service or, if challenged, by a court. Further, if the facts vary from those relied upon (including if any representation, covenant, warranty or assumption upon which we have relied is inaccurate, incomplete, breached or ineffective), our opinion contained herein could be inapplicable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to us under the heading "Material U.S. Federal Income Tax Consequences of the Merger" therein. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations promulgated thereunder, nor do we thereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term "experts" as used in the Securities Act.

Sincerely,

/s/ PAUL HASTINGS LLP

Exhibit 8.3

Fenwick
FENWICK & WEST LLP
1191 SECOND AVENUE, 10TH FLOOR SEATTLE, WA 98101
TEL: 206.389.4510 FAX: 206.389.4511 WWW.FENWICK.COM

May 3, 2017

OncoGenex Pharmaceuticals, Inc.
19820 North Creek Parkway
Bothell, Washington 98011

Re: Contingent Value Rights (CVRs) Issued by OncoGenex Pharmaceuticals, Inc.

Ladies and Gentlemen,

At your request, and in connection with the filing of the Registration Statement, as defined below, we are rendering our opinion regarding the federal income tax consequences under the U.S. Internal Revenue Code of 1986, as amended (the "Code") of the distribution and issuance of contingent value rights ("CVRs") to common stockholders of OncoGenex Pharmaceuticals, Inc., a Delaware corporation ("OncoGenex"), prior to completion of the First Merger, as defined below, and under the terms expressed in the form of the CVR agreement attached as Annex F to the Registration Statement on Form S-4 of OncoGenex (as amended or supplemented, the "Registration Statement") filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended, including the proxy statement/prospectus/information statement forming a part thereof (the "Proxy Statement/Prospectus/Information Statement"). Subsequent to the distribution and issuance of CVRs, and pursuant to that certain Agreement and Plan of Merger and Reorganization (the "Merger Agreement") dated as of January 5, 2017, Ash Acquisition Sub, Inc., a Delaware corporation ("Merger Sub 1"), and a wholly owned subsidiary of OncoGenex, is proposed to merge with and into Achieve Life Sciences, Inc. ("Achieve"), a Delaware corporation, (the "First Merger") with Achieve becoming a wholly-owned subsidiary of OncoGenex and the surviving corporation of the First Merger (the "Initial Surviving Corporation"), and, promptly following the First Merger and as part of the same plan and arrangement, the Initial Surviving Corporation will merge with and into Ash Acquisition Sub 2, Inc. ("Merger Sub 2"), a Delaware corporation and wholly owned subsidiary of OncoGenex, with Merger Sub 2 continuing as the surviving entity in the second merger as a direct wholly owned subsidiary of OncoGenex (the First Merger and the second merger, together, are referred to as the "Merger").

In rendering our opinion we have examined the following documents (the "Documents"):

(a) The form of the CVR agreement attached as Annex F to the Registration Statement;

(b) The Registration Statement;

(c) Certain representations and other statements made by OncoGenex in a letter delivered to us in connection with this opinion; and

(d) Such other documents and records as we have deemed necessary in order to enable us to render our opinion.

In rendering our opinion, we have assumed, without any independent investigation or verification of any kind, that all of the information as to factual matters contained in the Documents is true, correct, and complete. Any inaccuracy with respect to factual matters contained in the Documents or incompleteness in our understanding of the facts could alter the conclusion reached in our opinion.

In addition, for purposes of rendering our opinion, we have assumed with your permission that (i) all signatures on all Documents reviewed by us are genuine, (ii) all Documents submitted to us as originals are true and correct, (iii) all Documents submitted to us as copies are true and correct copies of the originals thereof, (iv) each natural person signing any Document reviewed by us had the legal capacity to do so, (v) the CVR agreement effected will be substantially similar to the form of the CVR Agreement attached as Annex F to the Proxy Statement/Prospectus/Information Statement, and (vi) the CVR agreement effected will be entered into prior to completion of the First Merger.

It is our opinion that the distribution and issuance of CVRs to holders of OncoGenex common stock prior to completion of the First Merger and under the terms expressed in the form of the CVR agreement attached as Annex F to the Proxy Statement/Prospectus/Information Statement is more likely than not to be treated as a distribution of property with respect to OncoGenex common stock under the Code. Subject to the limitations and qualifications set forth in this letter and the section titled "Tax Treatment of CVRs" of the Proxy Statement/Prospectus/Information Statement, we confirm that the section titled "Tax Treatment of CVRs" of the Proxy Statement/Prospectus/Information Statement constitutes our opinion of the material U.S. federal income tax consequences of the distribution and issuance of CVRs to common stockholders of OncoGenex prior to completion of the First Merger and under the terms expressed in the form of the CVR agreement attached as Annex F to the Proxy Statement/Prospectus/Information Statement. Other than that expressed in this letter and the section titled "Tax Treatment of CVRs" of the Proxy Statement/Prospectus/Information Statement, we express no opinion on the tax consequences of the distribution and issuance of CVRs under state, local and foreign tax laws. **Importantly, we are not opining on the federal income tax treatment under the Code of the distribution and issuance of CVRs to common stockholders of OncoGenex if the CVRs are not distributed and issued prior to completion of the First Merger or if the terms of the CVR agreement as effected are not substantially similar to the form of the CVR Agreement attached as Annex F to the Proxy Statement/Prospectus/Information Statement.**

This opinion is being rendered solely in connection with the filing of the Registration Statement. This opinion is rendered only as of the date hereof, and we undertake no obligation to supplement, update or revise the opinion after the date hereof to reflect any changes (including

changes that have retroactive effect) in applicable law or factual matters arising subsequent to the date hereof or the impact of any information, document, certificate, record, statement, representation, covenant, agreement or assumption relied upon herein that becomes untrue, incorrect or incomplete.

Our opinion is based upon the Code, applicable U.S. Treasury Regulations promulgated or proposed under the Code, published administrative rulings and procedures, judicial decisions and other applicable authorities, all as in effect on the date hereof, which are subject to change (possibly with retroactive effect) so as to affect the conclusions stated herein. Moreover, there can be no assurance that our opinion will be accepted by the Internal Revenue Service or, if challenged, by a court. Further, if the facts vary from those relied upon (including if any representation, covenant, warranty or assumption upon which we have relied is inaccurate, incomplete, breached or ineffective), our opinion contained herein could be inapplicable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to us under the heading “Tax Treatment of CVRs” therein. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations promulgated thereunder, nor do we thereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term “experts” as used in the Securities Act.

Very truly yours,

/s/ FENWICK & WEST LLP

Exhibit 10.21

***** Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

EXCLUSIVE LICENSE AGREEMENT

This License Agreement (the "**Agreement**") is made and entered into as of May 26, 2009 ("**Effective Date**") by and between Sopharma Joint Stock Company, a publicly listed company formed under the laws of Bulgaria, registered in Sofia City Court under No 19359, located at 16 Iliensko shosse str, 1220 Sofia, Bulgaria ("**Sopharma**") and Extab Corporation, a corporation organized under the laws of the State of Delaware, whose principal place of business is at Corporation Trust Centre, 1209 Orange Street, Wilmington, Delaware 19801, USA ("**Extab**"). Sopharma and Extab are sometimes each hereinafter referred to as a "**Party**" or collectively as "**Parties**."

WHEREAS, Sopharma is the owner of certain patent rights under EP/1586320 B1 for the territories of Bulgaria, Czech Republic, Germany, Estonia, France, Hungary, Italy, Lithuania, Latvia, Slovak Republic, Slovenia, Poland and Romania covering pharmaceutical compositions of the pharmaceutical product branded under the name Tabex® containing Cytisine;

WHEREAS, Sopharma is the owner of the trademark Tabex and all rights therein. Also Sopharma is the owner of certain technical information related to know-how, trade secrets, experimental data, formulas, expert opinions, experimental procedures, protocols, trademarks and other confidential and/or proprietary information covering pharmaceutical compositions useful for the treatment of certain human diseases and disorders;

WHEREAS, Sopharma desires that the patents and the technical information be developed additionally so that pharmaceutical compositions and commercial products resisting therefrom may be made available for Commercial Sale (as hereinafter defined) as treatments for nicotine addiction and various related human diseases and disorders;

WHEREAS, Extab desires to bring the scientific talent andknow-how to explicit Sopharma's patent rights and the technical information of Sopharma within the field of drug therapy, to bring the existing Sopharma product branded as Tabex to market within a designated territory for Commercial Sale, and to develop and market within that field and territory any improvement to that product; and

WHEREAS, Extab wishes to obtain from Sopharma the right for Extab to develop, manufacture, and sell the product under the trademark Tabex, and Sopharma is willing to grant a license to the patent rights, technical information and the trademark, subject to the tarns set forth below.

NOW, THEREFORE, in consideration of the above premises and the mutual covenants contained herein, the Parties hereby agree as follows:

1. DEFINITIONS.

When used in this Agreement, the following terms shall have the meanings set out in this Article 1. Except as otherwise explicitly provided, all references to Articles, Sections and Subsections shall refer to the Articles, Sections and Subsections of this Agreement, and all references to Schedules shall refer to the Schedules appended to this Agreement, all of which are incorporated herein by reference.

"**AAA**" shall have the meaning set forth in Section 11.2.

"**Active Agent**" shall mean Cytisine or the active pharmaceutical ingredients in the product branded by Sopharma as Tabex including Cytisine, as well as Intermediates, salts, esters and pharmaceutical compositions containing Cytisine or its bioequivalent.

"**Active Agent Product**" shall mean the pharmaceutical product containing Cytisine branded under the name Tabex or any pharmaceutical, device, or combination product that is composed of, or incorporates an Active Agent, a compound or moiety that includes Active Agent or is derived from, or substantially similar to Active Agent, or an Intermediate thereof or is developed utilizing Licensed Technology.

"**Affiliate**" shall mean any entity which controls, is controlled by or is under common control of a Party, where "control" means beneficial ownership of more than 50% of the outstanding shares or securities or the ability otherwise to elect a majority of the board of directors or other managing authority.

"**Approval**" shall mean an approval granted by a Regulatory Authority for the manufacture, sale, import and use of Active Agent Product in the Extab Territory excluding pricing and reimbursement approvals granted by such Regulatory Authority.

"**Commercial Sale**" shall mean any transaction that transfers to a purchaser, for value, physical possession and title to an Active Agent Product, after which transfer the seller has no right or power to determine the purchaser's resale price. Transfer of possession and title to or between Extab, an Affiliate of Extab, or sublicensee or an Affiliate of a sublicensee shall not constitute a Commercial Sale unless the Affiliate of Extab or sublicensee or an Affiliate of a sublicensee is an end user of the Active Agent Product.

"**Confidential Information**" shall have the meaning set forth in Section 10.1.

"**Controlled**" or "**Controlling**" shall mean possession, now or in the future, of the ability to grant a license or sublicense as provided for herein without violating the terms or any agreement or arrangement with, or the rights of, any Third Party.

"**Co-Owned New IP**" shall have the meaning set forth in Section 4.2(b).

"**Damages**" shall have the meaning set forth in Section 6.1.

"**EMEA**" shall mean the European Medicines Evaluation Agency (now known as European Medicines Agency) or any successor thereto which coordinates the scientific review and approval of human pharmaceutical or biologic products under the centralized procedure of the European Community.

"**EEA**" means countries which are from time to time signatories to the agreement on the European Economic Area, including, but not limited to, the member states from time to time of the European Union.

"**Extab Territory**" shall mean all countries, territories and regions of the world, excluding the Sopharma Territory.

"**FDA**" shall mean the United States Food and Drug Administration or any successor thereto.

"**Field**" shall mean the use of the Active Agent Product for chronic nicotinism (tabacism) for smoking cessation and other diseases where the Active Agent Product may have therapeutic benefit, including but not limited to Alzheimer's disease.

"**Improvements**" shall mean any and all enhancements, modifications, substitutions or beneficial alterations by Sopharma or its agents or Extab or its agents to the Licensed Technology, Active Agents or Intermediates thereof, or Active Agent Product owned or Controlled by Sopharma or Extab from time to time.

***Confidential Treatment Requested**

"**Intermediates**" shall mean all synthetic (or reaction) precursors, products or compounds including salts and esters of Active Agent or Active Agent Product, including various formulations of the Active Agent or its bioequivalent.

"**Insolvency Event**" in relation to either Party, means any one of the following:

(a) a notice shall have been issued to convene a meeting for the purpose of passing a resolution to wind up that Party or such a resolution shall have been passed other than a resolution for the solvent reconstruction or reorganisation of that Party or for the purpose of inclusion of any part of the share capital of that Party in the Official List of the Bulgarian Stock Exchange or London stock exchange or in the list of the American Stock Exchange or quotation of the same on the National Association of Securities Dealers Automated Quotation System or any quotation or listing on any other recognized stock exchange; or

(b) a resolution shall have been passed by that Party's directors to seek a winding up or administration order or a petition for a winding up or administration order shall have been presented against that Party or such an order shall have been made; or

(c) a receiver, administrative receiver, receiver and manager, interim receiver, custodian, sequestrator or similar officer is appointed in respect of that Party or over a substantial part of its assets or any Third Party takes steps to appoint such an officer in respect of that Party; or

(d) a step or event shall have been taken or arisen outside the United Kingdom which is similar or analogous to any of the steps or events listed at (a) to (c) above.

"**Licensed IP**" shall mean the Licensed Patent Rights; Licensed Technical Information; Licensed Technology and Licensed Trademark all covering the Active Agent Product and its Field.

"**Licensed Patent Rights**" shall mean any and all patents and patent applications, including also rights resulting in Improvements by Sopharma:

(a) any patents issuing from such patent applications;

(b) all patents and patent applications based on, corresponding to, or claiming the priority date(s) of any the foregoing;

(c) any reissues, term extensions (or other governmental actions which provide exclusive rights to the patent holder in the patented subject matter beyond the original patent expiration date), substitutions, confirmations, registrations, validations, re-examinations, additions, continuations, continued prosecutions, continuation-in-part, or divisions of or to any of the foregoing, whether foreign or domestic; and,

(d) all patents and patent applications arising from Improvements in the licensed Technology.

"**Licensed Technology**" shall mean technical and technology documentation and any subsequent Improvements.

"**Licensed Technical Information**" shall mean any know-how, trade secrets, experimental data, formulas, expert opinions, experimental procedures, protocols and other confidential and/or proprietary information controlled by Sopharma relating to Active Agents, Intermediates, Active Agent Products, or Improvements within the Field, whether patentable or not, including, but not limited to:

Such information necessary or useful for or relating to: (i) the conduct of research on Active Agent Product; (ii) the formulation, including sustained-release, and immediate-release, orally disintegrating, inhaled or any other formulations, manufacture, use and/or application of an Active Agent Product; or (iii) pertaining to the Registration of an Active Agent Product; (iv) any biological or chemical material, covered by the Sopharma Patent Rights, and any Improvement thereon or modification thereto; developed or acquired by or on behalf of Sopharma before, on, or after the Effective Date.

"**Licensed Trademark**" shall mean Tabex® or any trademark owned by Sopharma and used in connection with the marketing and sale of products containing the Active Agent.

"**Major Markets**" shall means Germany, France, Italy, Japan, Spain, UK, and the U.S.

"**MAA**" means *a* marketing authorization application filed in the EEA with a Regulatory Authority.

"**NDA**" shall mean a New Drug Application filed with the FDA requesting approval for commercialization of a product in the U.S.A.

"**Net Sales**" shall mean for any country in the Extab Territory, the grass receipts ("**Gross Sales**") representing sales of Active Agent Product in such country pursuant to this Agreement by Extab, its Affiliates and its and their respective sublicensees to Third Parties in finished product form (i.e., packaged and labeled for sate to the ultimate consumer), less deductions actually allowed or specifically allocated to Product for:

(a) transportation charges, including, without limitation, Insurance for transporting Active Agent Product to the extent that such charges are billed to the purchaser by Extab, its Affiliates and/or their respective sublicensees;

(b) sales, excise and consumption taxes and custom duties, and any other governmental charges imposed on the production, Importation, use or sale of Active Agent Product, to the extent that such charges are billed to the purchaser by Extab, its Affiliates and/or their respective sublicensees;

(c) trade, quantity, cash and other discounts allowed on Active Agent Product not already reflected in the amount invoiced;

(d) allowances or credits to customers on account of rejection or return of Active Agent Product;

(e) retroactive price reductions affecting Active Agent Product; and

(f) rebates, credits, charge backs, fees, reimbursements or similar payments that are granted to wholesalers and other distributors, government entities, managed care entities or other customers.

Each of the foregoing deductions from Gross Sales shall only be deducted once and only to the extent not otherwise deducted from Gross Sales. Any sales of Active Agent Product between Extab, its Affiliates and its or their sublicensees (for the purposes of contract manufacturing only), including all samples, will be excluded from the computation of Net Sales and no royalties will be payable on such sales. If Extab or its Affiliates sell Product as part of a bundle or group sale with other products not covered by this Agreement, and Extab or its Affiliates provide a discount, allowance or rebate to the purchaser of such products based on the invoiced prices for all products sold, such discount must be allocated pro-rata based on the selling prices of such products before taking into account the discount, allowance or rebate on Product provided as part of such bundle.

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If an Active Agent Product is sold or otherwise commercially exploited by Extab or its Affiliates in a manner such that the above means of calculating Net Sales is not possible or otherwise is inappropriate, the parties agree to negotiate in good faith a reasonable mechanism for fairly calculating the "Net Sales" resulting from such sales or other commercial exploitation. Net Sales shall be determined in accordance with international financial reporting standards (IFRS) applied in a consistent manner.

For the avoidance of doubt any disposal of Active Agent Product for, or use of Active Agent Product in, clinical orpre-clinical trials or as free samples (such samples to be in quantities common in the industry for this type of Product) shall not give rise to any deemed sale under this Agreement.

"**New IP**" shall mean intellectual property conceived and reduced to practice solely by or for Extab or its agents during the Term, including without limitation, New Patent Rights, New Technical information and New Technology all a result of developed and Improved Active Agent Product within the Field.

"**New Patent Rights**" shall mean any and all Improvements conceived and reduced to practice solely by or for Extab or its agents during the Term arising from the Licensed Products, and:

(a) any patents Issuing from such patent applications;

(b) all patents and patent applications based on, corresponding to, or claiming the priority date(s) of any of the foregoing;

(c) any reissues, term extensions (or other governmental actions which provide exclusive rights to the patent holder in the patented subject matter beyond the original patent expiration date), substitutions, confirmations, registrations, validations, re-examinations, additions, continuations, continued prosecutions, continuations-in-part, or divisions of or to any of the foregoing, whether foreign or domestic; and,

(d) all patents and patent applications arising from Improvements in the New Technology.

"**New Technology**" shall mean Improvements to the Licensed Technology.

"**New Technical Information**" shall mean any know-how, trade secrets, experimental data, formulas, expert opinions, experimental procedures, protocols and other confidential and/or proprietary information Controlled by Extab relating to Active Agents, Intermediates, Active Agent Products, or Improvements within the Field, whether patentable or not, including, but not limited to:

Such information necessary or useful for or relating to: (a) the conduct of research on Active Agent Product; (b) the formulation, including sustained-release, and immediate-release; orally disintegrating, inhaled or any other formulations, manufacture, use and/or application of an Active Agent Product; or (c) pertaining to the Registration of an Active Agent Product; (d) any biological or chemical material, covered by the New IP, and any Improvement thereon or modification thereto; developed or acquired by or on behalf of Extab before, on, or after the Effective Date; and, communicated to Extab within a reasonable time after such development or acquisition.

"**Non-Paying Partner**" shall have the meaning set forth in Section 7.4.

"**Paying Partner**" shall have the meaning set forth in Section 7.4.

"**Regulatory Authorities/Regulatory Authority**" shall mean, depending on the context, the FDA in the U.S.A. or the corresponding regulatory or governmental authority in a given country or regulatory jurisdiction of the Extab Territory with responsibility for granting regulatory approval and pricing/reimbursement approval, where appropriate, for the manufacture, marketing, sale or use of Active Agent Product in such country.

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"**Sopharma Territory**" shall mean Albania, Algeria, Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Finland, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Libya, Macedonia, Moldova, Mongolia, Norway, Poland, Romania, Russia, Serbia, Slovakia, Sweden, Tajikistan, Tunisia, Turkey, Turkmenistan, Ukraine, Uzbekistan and Vietnam.

"**Term**" shall have the meaning set forth in Section 9.1.

"**Third Party**" shall mean any party other than Sopharma or Extab or an Affiliate of either Sopharma or Extab,

"**United States**", "**US**" or "**USA**" shall mean the United States of America and its territories, possessions, and protectorates (inducing Puerto Rico), and the District of Columbia.

2. GRANT OF RIGHTS.

2.1 **License.** Subject to the terms and conditions hereof, Sopharma hereby grants to Extab and its Affiliates an exclusive license to use the Licensed IP within the Field and the Extab Territory, including the right to grant sublicenses under the Licensed IP to identify, discover, develop, make, have made, manufacture, use, offer for sale, sell, have sold, import, or have imported any Active Agent or Active Agent Product. The license includes the right to use the Licensed Trademark(s) in connection with the marketing, distribution and sale of the Active Agent Product.

Sopharma grants the License under the provision that Extab shall be obliged to exclusively purchase the Active Agent from Sopharma according to the conditions set out in the exclusive supply agreement between the Parties.

2.2 **Sublicenses**. Extab shall have the right to grant sublicenses under the Licensed Technology and Improvements consistent with the terms of this Agreement provided that Extab gives at least seven days prior written notice to Sopharma, and further provided, that such sublicenses are entered into in good faith. Extab shall deliver to Sopharma for informational purposes, and under an obligation of confidentiality, a copy of any sublicenses entered into pursuant to Section 3.5 hereof, and any modification or termination thereof, within 30 days after execution, modification, or termination and Extab shall ensure that:

(a) the sub-license agreement prohibits further sub-licensing by the sub-licensee, except to an Affiliate of the sub-licensee, without the prior written consent of Extab;

(b) the sub-license agreement imposes obligations of confidentiality on the sub-licensee which are no less protective than those set out in Section 10.

2.3 **Development and Commercialization.**

(a) Extab shall exercise, and shall require (where applicable) that its Affiliates and sub-licensees use, at its or their own expense, good faith reasonable efforts in developing Active Agent Product within the Field until Approval in each of the Major Markets and in commercializing Active Agent Product within the Field in each of the Major Markets.

(b) In commercializing Active Agent Product within the Field in each of the Major Markets, Extab shall, and Extab shall require that its Affiliates and sub-licensees shall (where applicable), at its or their own expense, use good faith reasonable efforts to commercialize the Active Agent Product and to maximize the revenues generated by sales of the Active Agent Product by itself or any sublicensee.

***Confidential Treatment Requested**

(c) For the purposes of this Section 2.3, "good faith reasonable efforts" shall mean those efforts that are similar to the efforts used by pharmaceutical companies generally in relation to other products under similar commercial circumstances that have similar commercial value, status and potential to Active Agent Product. The Parties acknowledge that all commercial decisions relating to the commercialization of the Active Agent Product shall be in the sole discretion of Extab, or its Affiliates or sublicensees (where appropriate). For the avoidance of doubt Extab shall not be required by this Section 2.3 or otherwise to continue with the commercialization of Active Agent Product if for safety or efficacy reasons it decides in good faith to abandon the same.

(d) Extab shall record in written form, to the extent practical, all technical and other information relating to its research, development and manufacturing activities hereunder which documents and such activities shall be consistent with standard practices of what is normal and customary in the industry. To the extent practical, such written records shall be kept separately from written records documenting other research, development or manufacturing activities of Extab. All such written records of Extab shall be maintained in a form sufficient to satisfy any relevant Regulatory Authority and shall be open to inspection by Sopharma during normal business hours upon reasonable prior written notice.

(e) In any country within the Extab Territory in which Extab is prohibited from using the Licensed Trademark, Extab may replace the Licensed Trademark with any trade name of its choice.

2.4 **Regulatory Filing**. Extab shall have sole responsibility, at its expense, for preparing, assembling and submitting all approval applications needed to achieve regulatory approval for Active Agent Product in the Extab Territory. Sopharma shall have sole responsibility, at its expense, for preparing, assembling and submitting all approval applications needed to achieve regulatory approval for Active Agent Product in the Sopharma Territory which are required for the exercise of Sopharma's rights to market Active Agent Product within the Sopharma Territory. Sopharma shall promptly provide Extab, at Sopharma's expense, with relevant Information in Sopharma's possession which may be required by Extab for the purposes of filing and/or maintaining Extab's approval applications. Extab shall promptly provide Sopharma, at Extab's expense, with relevant information in Extab's possession which may be required by Sopharma for the purposes of filing and/or maintaining Sopharma's approval applications.

2.5 **Drug Master File, Clinical Data**. During the Term, Extab shall have sole title to any drug master file, all drug master file data, and all clinical data related to Active Agent Product developed and funded by Extab during the Term, including all such data included in any regulatory filings permitted to be made by Extab under this Agreement. All regulatory filings in the Extab Territory made by Extab under this Agreement will be made in Extab's name and will be the sole property of Extab.

Extab shall provide Sopharma with any data contained within any drug master file, all drug master file data, and all clinical data related to Active Agent Product which is developed by Extab during the Term for use in all Sopharma Territories.

3. **PAYMENTS.**

3.1 **License Fee.** As consideration for the rights granted to Extab under this Agreement and as a nonrefundable andnon-creditable license fee, within 10 business days of the upon the Effective Date (but in any event not later than 30th April, 2009), Extab shall pay to Sopharma the sum of ten dollars ($10.00).

3.2 **Royalty Payments.**

(a) Extab shall pay to Sopharma without set-off or counterclaim (save as otherwise permitted by this Agreement) a royalty of […***…]% on Net Sales of Active Agent Product sold by Extab, its Affiliates, or sublicensees and their Affiliates in the Extab Territory throughout the Term.

***Confidential Treatment Requested**

(b) Royalty payments shall be made in accordance with Section 8.1.

(c) The calculation of the amount of royalties due under the provisions of Subsection 3.2(a) shall be in accordance with the following provisions:

(i) Royalties under Subsection 3.2(a) shall be payable only once with respect to an Active Agent Product, regardless of the number of claims of the Licensed IP pertaining to such Active Agent Product, or the number of countries in which the manufacture, use or sale of an Active Agent Product occurs.

(ii) If specific value is added to an Active Agent Product by special devices for dispensing or administering such Active Agent Product or by diluents or similar exogenous materials which accompany such Active Agent Product as it is sold, then the Parties shall make a commercially reasonable determination of an amount to be deducted from the gross amount invoiced for such Active Agent Product, in order to remove from the amount of Net Sales the specific value added to such Active Agent Product by such special devices or exogenous materials.

(iii) If Extab markets and sells the Active Agent Product, containing an Active Agent, in a country within the Extab Territory with compulsory licenses for such product with Active Agent, and which compulsory licenses have a maximum royalty rate lower than that which would otherwise apply to Net Sales of such Active Agent Product pursuant to Subsection 3.2 (a) must be granted in a country, and Net Sales under such compulsory licenses exceed […***…]% of the total Net Sales of all Active Agent Product containing such Active Agent in such country in any calendar quarter, or a governmental authority in a country imposes a maximum royalty rate lower than the rate that would otherwise apply to Net Sales of such Active Agent Product pursuant to Subsection 3.2(a) in such country, then the royalty rate that would otherwise apply for such calendar quarter in such country shall be reduced to equal such lower rate.

(d) If Extab receives payment from a Third Party for sales of the Active Agent Product pursuant to a sublicense granted by Extab under Licensed Technology in money or its equivalent (to include without limitation any royalty or sales based milestone), Extab shall pay Sopharma an amount in US Dollars equal to the greater of:

(i) […***…] percent ([…***…]%) of any such payment or value received by Extab; or

(ii) […***…] percent ([…***…]%) on Net Sales of Active Agent Product sold by such sublicensee in the Extab Territory

All other monies received by Extab in the form of sublicense payments shall accrue to the exclusive benefit of Extab and no payment shall be due Sopharma.

3.3 **Sublicenses**. No later than the one-year anniversary of the termination of this Agreement other than by virtue of a material breach by Sopharma, any sublicenses granted by Extab shall terminate. In lieu of termination, Extab may elect to assign to Sopharma some or all of the sublicenses, free of charges and expenses, and Sopharma shall be entitled to all rights (including payment of royalties and fees thereunder) and obligations of Extab thereunder. Termination of this Agreement due to the uncured material breach of Sopharma shall not affect existing sublicenses, which may continue under their terms.

4. OWNERSHIP OF CERTAIN INTELLECTUAL PROPERTY.

4.1 **Licensed IP**. Sopharma is and shall remain the sole owner of Licensed IP, and Extab has no rights in or to Licensed IP other than the rights specifically granted herein.

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4.2 New IP.

(a) Extab is and shall remain the sole and exclusive owner of any and all New IP Issued or registered in the Extab Territory. Sopharma has no rights in or to New IP in the Extab Territory other than the rights specifically granted herein.

(b) Extab and Sopharma shall jointly own New IP issued or registered in the Sopharma Territory ("**Co-Owned New IP**"). The Parties agree to execute any necessary assignments to cause the Co-Owned New IP to be jointly owned in the Sopharma Territory.

4.3 **Licensing of Co-Owned New IP**. Neither Party shall license the Co-Owned New IP within the Sopharma Territory without the written consent of the other. If Co-Owned New IP is licensed by either Party to a third party for all or any part of the Sopharma Territory, the Parties hereby agree that the licensing revenue from such license shall be distributed equally between the Parties within 60 days of its receipt by the licensing Party, and each licensing Party shall have a duty of accounting to the other for such revenue.

5. WARRANTIES AND REPRESENTATIONS.

5.1 **Representations by Sopharma**. Sopharma expressly represents and warrants:

(a) to its best knowledge, it has good and valid title to the Licensed Technology, and is not the subject of any pending or threatened legal action, including, but not limited to, any assertion by any Third Party that any of the intellectual property rights is invalid, unenforceable or violates the rights of any Third Party;

(b) it has the authority to grant the rights including the exclusive rights granted herein to Extab, and that such grant of rights hereunder are free and clear of any known claims, encumbrances, liens, security interests and rights of third parties;

(c) it has full power and authority to execute and deliver this Agreement and to perform its obligations hereunder;

(d) it has taken all necessary legal action to authorize the execution and delivery of this Agreement, and this Agreement constitutes the legal, valid and binding obligation of Extab enforceable against Extab in accordance with its terms; and

(e) it is not subject to any pending or threatened (I) voluntary or involuntary bankruptcy, liquidation or similar proceeding or order, (II) litigation, regulatory, judicial or arbitral proceeding or order, or (III) noncompetition, license, exclusivity or confidential agreement, any of which would likely affect its ability to enter into and/or perform its obligations under this Agreement.

5.2 **Representations by Extab**. Extab expressly represents that:

(a) it has full power and authority to execute and deliver this Agreement and to perform its obligations hereunder;

(b) it has taken all necessary legal action to authorize the execution and delivery of this Agreement, and this Agreement constitutes the legal, valid and binding obligation of Sopharma enforceable against Sopharma in accordance with its terms; and

(c) it is not subject to any pending or threatened (i) voluntary or involuntary bankruptcy, liquidation or similar proceeding or order, (ii) litigation, regulatory, judicial or arbitral proceeding or order, or (iii) noncompetition, license, exclusivity or confidential agreement, any of which would likely affect its ability to enter into and/or perform its obligations under this Agreement.

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5.3 **Warranty Disclaimer**. Other than that described in Sections 5.1 and 5.2, nothing in this Agreement is or shall be construed as:

(a) a warranty or representation by Sopharma as to the validity or scope of the Licensed IP;

(b) a warranty or representation that anything made, used, sold or otherwise disposed of under any license granted in this Agreement is or will be free from infringement of patents, copyrights and other rights of third parties;

(c) an obligation to bring or prosecute actions or suits against third parties for infringement, except to the extent and in the circumstances described in Section 7; or

(d) a grant by implication, estoppel, or otherwise of any licenses under patent applications or patents of Sopharma or other persons other than as provided in Section 2 hereof.

5.4 **No Warranty**. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, EACH PARTY MAKES NO REPRESENTATION AND EXTENDS NO WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The Parties understand that the development and commercialization of an Active Agent Product will involve approvals by regulatory authorities, and that neither Party is guaranteeing the safety or efficacy of such product, or that such Active Agent Product will receive the required approvals.

5.5 **Disclaimer of Liability**. In no event will either Party be liable to the other for any incidental, special or consequential damages resulting from the exercise of Extab's rights under the licenses granted pursuant to this Agreement or the use of the Licensed IP.

6. INDEMNIFICATION AND INSURANCE.

6.1 **Indemnification.**

(a) Extab shall indemnify, hold harmless and defend Sopharma, its Affiliates and its and their respective trustees, officers, employees, consultants and agents, and the sponsors of the research that led to the Licensed Patent Rights, except to the extent of their gross negligence or willful misconduct, against any and all liability (including without limitation product liability) and/or loss, damage or expense (including reasonable attorney's fees) (collectively, "Damages") with respect to any claims, suits, demands, judgments or causes of action arising out of:

(i) the development, manufacture, storage, use, sale or other distribution, or any other use of Active Agent Product or Licensed Patent Rights, or exercise of rights granted hereunder, by Extab, its Affiliates or sublicensees or their Affiliates, distributors, agents or representatives, excluding any liability arising from third party claims of infringement;

(ii) the use by end-users of Active Agent Product sold in the Extab Territory pursuant to rights granted under this Agreement;

(iii) any representation, warranty or statement by Extab or its Affiliates, sublicensees or their Affiliates, distributors, agents or representatives, to a third party concerning Sopharma or the Licensed IP or the Active Agent Product that is false or materially misleading; or

(iv) any breach by Extab of any material term, provision, or covenant of this Agreement, and any inaccuracy in any representation or warranty made by Extab in this Agreement.

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In the event any such claims, demands or actions are made, Extab shall defend Sopharma at Extab's sole expense by counsel selected by Extab, subject to approval by Sopharma, which such approval is not to be unreasonably withheld.

(b) Sopharma shall indemnify, hold harmless and defend Extab, its officers, directors, employees, attorneys, consultants and agents, except to the extent of their gross negligence or willful misconduct, against any and all Damages incurred or sustained by any Extab Indemnified party with respect to any claims, suits, demands, judgments or causes of action arising out of:

(i) any breach by Sopharma of any material term, provision, or covenant of this Agreement;

(ii) any inaccuracy in any representation or warranty made by Sopharma in this Agreement;

6.2 **Insurance**. In addition to the foregoing, from and after the time Extab or any Affiliate or sublicensee or any Affiliates of a sublicensee begins clinical trials on any Active Agent Product, Extab shall maintain, during the Term, comprehensive general liability insurance, including products liability insurance, with reputable and financially secure insurance carriers, or shall provide an explanation of self insurance, to cover the activities of Extab, its Affiliates and sublicensees or any Affiliate of a sublicensee, if any, contemplated by this Agreement. Such insurance shall include Sopharma as a named insured, shall require prior notice to Sopharma before cancellation and shall, to the extent reasonably possible, be in an amount which is customarily carried by companies at a comparable stage of development or introduction of new pharmaceutical or biologic products, Extab shall provide Sopharma with a copy of any such insurance policy and schedule promptly upon receiving a written request for the same from Sopharma.

6.3 **Tender of Defense for Damages**. Promptly upon receipt by either Party of a notice of a claim by a Third Party which may give rise to a claim for Damages under Section 6.1 or 6.2 of this Agreement, the Indemnified party shall give written notice thereof to the indemnifying party. Upon tender of defense, (a) the indemnifying party shall undertake the defense against such claim and may contest or settle such claim on such terms, at such time and in such manner as the indemnifying party, in its sole discretion, shall elect, (b) the indemnified party shall cooperate as reasonably requested (with reasonable out of pocket expenses, but not soft costs, being reimbursed by the indemnifying party) in the defense of the claim, provided, however, that the indemnifying party may not agree to any settlement which would invalidate any claim of any Licensed Patent Right or any Improvement or which would impose any ongoing obligation on the indemnified party without the indemnified party's prior written consent, which shall not be unreasonably withheld. Notwithstanding the foregoing, the indemnified party shall have the right to participate in the defense or prosecution of any claim, including hiring their own counsel at the indemnified party's own expense, and the indemnifying party shall cooperate with the indemnified party if the indemnified party does so participate. If the indemnifying party fails or refuses to defend any tendered third party claim for Damages, the indemnifying party may nevertheless, at its own expense, participate in the defense of such claim by the indemnified party and in any and all settlement negotiations relating thereto. In any and all events, the indemnifying party shall have such access to the records and files of the indemnified party relating to any claim for Damages as may be reasonably necessary to effectively defend or participate in the defense thereof.

6.4 **Limitation of Liability**. Except with respect to damages arising from a Party's willful and knowing breach of its obligations under Article 10, under no circumstances shall a Party be liable for special, incidental, punitive or consequential damages, even if such Party has been advised of the possibility or likelihood of such damages. Notwithstanding the forgoing limitation, a Party may be liable for lost profits or loss from business interruption, but only in the event that (a) a court of competent jurisdiction finds that (i) the liable Party is the direct cause of such damages, (ii) the conduct of the liable Party was grossly negligent or willful, (iii) the damaged Party's conduct did not contribute to such damages, and (iv) the damaged Party was not reasonably able to mitigate such damages without undue cost; and (b) only to the extent of losses/damages that are not otherwise covered by a policy of insurance held by or on behalf of the damaged Party.

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7. PROSECUTION, MAINTENANCE OF INTELLECTUAL PROPERTY.

7.1 **Prosecution and Maintenance of Licensed Patent Rights**. Sopharma shall have full control over the prosecution and maintenance of the patent applications and patents contained in the Licensed Patent Rights, including the obligation to prepare, file, prosecute, maintain, defend or extend all patent applications and issued patents covered by Licensed Patent Rights, provided, however, that Sopharma shall reasonably consult with Extab, and follow Extab's reasonable general directions, on the most appropriate manner to prosecute and maintain patent applications and issued patents in the Licensed Patent Rights in the Extab Territory to protect the mutual interests of the Parties. Sopharma and its patent counsel will Keep Extab advised of the status of such prosecution and maintenance of Licensed Patent rights in the Extab Territory by reasonably consulting with Extab in connection with such prosecution and maintenance, and by providing Extab with copies of all patent applications and patents, and all official communications with respect to such patent applications and patents contained in Licensed Patent Rights as follows:

(a) in respect of any urgent or material communication Sopharma shall ensure that this is provided promptly to Extab after the date of receipt;

(b) In all other cases Sopharma shall provide for a quarterly update within 30 days of the end of each calendar quarter commencing on the Effective Date.

7.2 **Reversion of Licensed Patent Rights**. Extab shall have the right to assume responsibility for the prosecution and maintenance of the Licensed Patent Rights in the event Sopharma intends to forego its obligations as set forth in Section 7.1 above. Sopharma shall give Extab 60 days' written notice prior to foregoing its responsibility to prosecute and maintain any patents and patent applications covered by Licensed Patent Rights so as to permit Extab time to exercise its rights hereunder. In the event Sopharma elects to forego its obligation to maintain any issued patent or prosecute any patent application covered by Licensed Patent Rights, at the written request of Extab, Sopharma shall transfer and assign such patent application or patent to Extab within 30 days of such notice and such patent application or patent shall no longer fall under the definition of Licensed Patent Rights. Notwithstanding any other provisions of this Agreement, Sopharma shall thereafter not be responsible for any future obligations (Including costs and expenses) in connection with such patent application or patent after the effective date of such election by Extab.

7.3 **Prosecution and Maintenance of New Patent Rights.**

(a) **Extab Territory**. Extab shall, at its own cost, have full control over the prosecution and maintenance of the patent applications and patents contained in the New Patent Rights for the Extab Territory.

(b) **Sopharma Territory.** The Parties shall have joint control over the prosecution and maintenance of the patent applications and patents contained in the New Patent Rights for the Sopharma Territory. The Parties shall share equally the costs and fees associated with the prosecution and maintenance of the patent applications and patents contained in the New Patent Rights for the Sopharma Territory. The Parties shall reasonably consult on the most appropriate manner to prosecute and maintain patent applications and issued patents in New Patent Rights in the Sopharma Territory to protect the mutual interests of the Parties. Each party will keep the other Party advised of the status of such prosecution and maintenance of New Patent rights in the Sopharma Territory, including providing to the other Party copies of all patent applications and patents, and all official communications with respect to such patent applications and patents contained in New Patent Rights for the Sopharma Territory.

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7.4 **Reversion of New Patent Rights in the Sopharma Territory.** In the event one Party (the "Non-Paying Party") chooses not to contribute Its pro rata shares of the costs and fees associated with the prosecution and maintenance of the patent applications and patents contained in the New Patent Rights for the Sopharma Territory, the other Party (the "Paying Party") shall have the right to assume responsibility for such prosecution and maintenance of the New Patent Rights in the Sopharma Territory. In the event the Non-Paying Party elects to forego Its obligation to contribute pro rata to maintain any issued patent or prosecute any patent application covered by New Patent Rights in the Sopharma Territory, at the written request of the Paying Party, the Non-Paying Party shall transfer and assign such patent application or patent to the Paying Party within 30 days of such notice and such patent, application or patent shall no longer fall under the definition of New Patent Rights. Notwithstanding any other provisions of this Agreement, the Non-Paying Party shall thereafter not be responsible for such future obligations (including costs and expenses) in connection with such patent application or patent after the effective date of such election by the Paying Party.

7.5 **Defense Against Infringement.**

(a) If Extab or Sopharma becomes aware of any actual or threatened Infringement of any Licensed IP or New IP, then that Party shall promptly notify the other and the Parties shall discuss the most appropriate action to take. Both Parties shall use their best efforts in cooperating with each other to terminate such Infringement without litigation.

(b) If, within 120 days after the date of notification of Infringement, attempts to abate such Infringement are unsuccessful, then:

(i) **Sopharma Territory**. Sopharma shall have the right, under its own control and at its own expense, to prosecute any third party infringement of the Licensed IP and/or Co-Owned New IP in the Sopharma Territory, to the extent permitted by law. Extab shall cooperate with Sopharma as reasonably requested, at Sopharma's expense. Extab hereby agrees to join any such Infringement suit brought by Sopharma, and at Sopharma's expense, regarding the New IP if required by applicable law as an indispensable party. Sopharma is entitled to any recovery or damages arrived from such action following reimbursement of Extab's expenses (if any) related thereto. Extab shall have the right, under its own control and at its own expense, to prosecute any third party infringement of the Co-Owned New IP in the Sopharma Territory, to the extent permitted by law. Sopharma shall cooperate with Extab as reasonably requested, at Extab's expense. Sopharma hereby agrees to Join any such infringement suit brought by Extab, and at Extab's expense, regarding the Co-Owned New IP if required by applicable law as an indispensable party. Extab is entitled to any recovery or damages arrived from such action following reimbursement of Sopharma's expenses (if any) related thereto.

(ii) **Extab Territory.** Extab shall have the right, under its own control and at its own expense, to prosecute any third party infringement of the Licensed IP the Extab Territory, to the extent permitted by law, so long as Extab remains the exclusive licensee of the Licensed IP in the Extab Territory. Extab shall have the right, under its own control and at its own expense, to prosecute any third party Infringement of the New IP in the Extab Territory, to the extent permitted by law. Sopharma shall cooperate with Extab as reasonably requested, at Extab's expense. Sopharma hereby agrees to join any such infringement suit brought by Extab, and at Extab's expense, regarding the Licensed IP if required by applicable law as an indispensable party. Extab is entitled to any recover or damages arrived from such action following reimbursement of Sopharma's expenses (if any) related thereto.

(c) If either Party who has a right to bring an infringement suit under section 7.5(b) elects not to institute or prosecute any suit to enjoin or recover damages from any infringer of any Licensed IP or New IP within six months of receiving notice of infringement, then the other Party alone may, in its sole discretion and at its expense, initiate and conduct an infringement action and keep any settlement or award which may be obtained, subject to reimbursement to the other Party for its expenses. The Party who has a right to bring an infringement suit under section 7.5(b) but elects not to hereby agrees to join any such suit, at the other Party's expense, as a legally indispensable party if necessary under applicable law. Extab and Sopharma acknowledge that neither will settle any action commenced by it in a manner that is prejudicial to any Licensed IP or New IP without the other Party's prior written approval; such approval shall not be unreasonably withheld, delayed or conditioned.

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7.6 **Third Party Infringement Claims.**

(a) In the event the making, using, offering for sale, selling or importation of any Active Agent Product becomes the subject of a claim, against either Party, of infringement of any patent or other proprietary right of any third party anywhere in the world by virtue of the incorporation of any portion of the Licensed IP or New IP therein, such Party shall promptly give notice to the other Party and meet to consider the claim and the appropriate course of action.

(b) In the event of a Third-Party claim or action against Extab alleging that the practice of the Licensed IP in discovering, developing, making, using, offering for sale, selling importing or having imported Active Agent Product within the Field in a country infringes such Third Party's patent in such country, and Extab is ordered by a competent court of law or government agency from which no appeal can be had or is taken within the allowed time limits or is obligated by a settlement agreement to pay royalties or other payments to such Third Party on account of such infringement claim *or* action, then any such sums paid or agreed to he paid by Extab to such Third Party to resolve such infringement claim or action shall also be creditable on a dollar for dollar basis against any future royalties due from Extab to Sopharma to the extant only that such payment relates to the practice of the Licensed Patent Rights In discovering, developing, making, using, offering for sale, selling importing or having imported Active Agent Product within the Field in a country.

(c) In the event of a Third-Party claim or action against either Party alleging that the practice of the New IP in discovering, developing, making, using, offering for sale, selling importing or having imported Active Agent Product within the Field in a country infringes such Third Party's patent in such country, and this Party is ordered by a competent court of law or government agency from which no appeal can be had or is taken within the allowed time limits or is obligated by a settlement agreement to pay this expense to such Third Party on account of such infringement claim or action, then any such monies paid or agreed shall be paid by the Party held liable.

(d) Extab and Sopharma shall have the right to conduct the defense against any claim or action under Subsection 7.5 (a) or (b) brought against Extab or Sopharma, as the case may be, and shall have the right and authority to settle any such suit in consultation between both Parties, provided that either Party shall not make any admission or take any action or settle any such suit without the prior written approval of the other Party, which approval shall not be unreasonably withheld, delayed or conditioned.

(e) Any reasonable expenses incurred by Extab in connection with the conduct of such defense concerning Licensed IP, including, but not limited to, attorneys fees and costs, may be offset against any future royalties owed by Extab to Sopharma.

7.7 **Marking.**

(a) To the extent permitted by applicable laws and regulations, Extab shall mark and to cause any Affiliate or sublicensee to mark any Active Agent Products or their containers or labels, or in an Orange Book or like listing made, sold, or otherwise disposed of by it or them in the Extab Territory with any notice of patent rights for the Licensed Patent Rights necessary or desirable under applicable law to enable the Licensed Patent Rights to be enforced to their full extent in any country where Active Agent Products are made, used or sold.

(b) To the extent permitted by applicable laws and regulations, Sopharma shall mark and to cause any Affiliate or sublicensee to mark any product incorporating the New Patent Rights or their containers or labels, or in an Orange Book or like listing made, sold, or otherwise disposed of by it or them in the Sopharma Territory with any notice of patent rights for the New Patent Rights necessary or desirable under applicable law to enable the New Patent Rights to be enforced to their full extent in any country where such products s are made, used or sold.

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8. REPORTING, VERIFICATION AND PAYMENT.

8.1 **Books, Records and Payment.**

(a) Extab shall keep, and shall require any Affiliates and sublicensees or any Affiliates of a sublicensee selling Active Agent Products in the Extab Territory to keep, proper records and books of account, in accordance with good accounting practices, showing the gross and Net Sates (and all relevant deductions showing the difference between gross and Net Sales) in the Extab Territory on *a* country by country basis upon which the royalty payments of Extab are based, and all other information necessary for the accurate determination of payment to be made hereunder. Extab shall deliver to Sopharma, within 45 days after each calendar quarter, a comprehensive report showing the information on which the payments herein provided are calculated, including a breakdown of income from Net Sales of each Active Agent Product in each country of the Extab Territory, along with the royalty payments due for such calendar quarter.

(b) Unless otherwise stated herein all payments payable pursuant to this Agreement shall be paid within 45 days following the end of each calendar quarter in which Extab receives payments. Payments made within this 45 day period shall be deemed timely for the purposes of this Subsection. To the extent that payments due pursuant to this Subsection are not paid within the 45 day period, such outstanding sums shall accrue interest from the date due, to be computed for such unpaid amount on the last day of each calendar quarter (accruing quarterly) at the US Federal Funds Rate on the last day of the calendar quarter plus 3%. The payments to be made hereunder to Sopharma shall be made by wiring the required amount to Sopharma's bank in accordance with Sopharma's instructions or by mailing or sending by commercial courier checks for the required amount to Sopharma's address as set forth in Section 13.

8.2 **Audit.** On reasonable written notice, Sopharma, at its own expense, shall have the right, no more than twice a year, to have an independent certified public accountant, as approved by Extab (such approval not to be unreasonably withheld, delayed or conditioned), inspect and/or audit the books and records of Extab, including any Net Sales reports received from its Affiliates and its sublicensees or any Affiliates of a sublicensee, during usual business hours for the sole purpose of, and only to the extent necessary for, determining the correctness of payments due under this Agreement. Such examination with respect to any fiscal year shall not take place later than seven years following the expiration of such period. The expense of any such audit shall be borne by Sopharma except that if the results of the inspection reveal that Extab has underpaid Sopharma or overstated expenses by 10% or more in any calendar year, then the accountant's fees shall be paid by Extab. Any such discrepancies shall be promptly corrected by payment by the Extab. Extab shall include substantially the same audit rights in any sublicense it grants in order to ensure correctness of payments due hereunder.

8.3 **Foreign Payments.** Royalties based on Net Sales in any foreign country shall be payable to Sopharma in United States Dollars within 45 days after each calendar quarter. Dollar amounts shall be calculated using the average daily foreign exchange rate, as published by the Wall Street Journal, in effect for such foreign currency during the calendar quarter in which the Net Sales in the Field upon which the royalties are based actually occurred. Subject to Section 8.5, when royalties or other payments are due for Net Sales in a country where, for reasons of currency, tax or other regulations, transfer of foreign currency out of such country is prohibited, Extab has the right to place Sopharma's royalties in a bank account in such country in the name of and under the sole control of Sopharma; provided, however, that the bank selected be reasonably acceptable to Sopharma and that Extab inform Sopharma of the location, account number, amount and currency of money deposited therein. After Sopharma has been so notified, those monies shall be considered as royalties duly paid to Sopharma and will be completely controlled by Sopharma, and Extab will have no further responsibility with respect thereto.

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8.4 **Taxes.** Extab shall be initially responsible for the payment of any and all taxes that may be levied by a proper taxing authority on account of any royalties accruing to Sopharma under this Agreement. However, Extab shall be entitled to deduct from its payments to Sopharma the entire amount of any withholding taxes required to b*e* withheld by law to the extent Extab pays to the appropriate governmental authority such taxes. Extab shall deliver to Sopharma upon Sopharma's written request, proof of payment of all such taxes. Each Party shall provide assistance to the other Party in seeking any benefits available to such Party with respect to government tax withholdings by any relevant law or double tax treaty.

8.5 **Exchange control.** If at any time legal restrictions prevent the prompt remittance of part or all of payments owed hereunder with respect to any country in the world where an Active Agent Product is sold, payment shall be made through any lawful means or methods that may be available as the Parties shall reasonably determine.

9. TERM AND TERMINATION.

9.1 **Term.** Unless earlier terminated under this Section 9, the term of this Agreement shall begin on the Effective Date of this Agreement and shall remain in force for a period of 15 years from the Effective Date ("Term") and may be extended by mutual agreement of the Parties.

9.2 **Extab Rights of Termination.**

(a) Extab shall have the right to terminate this Agreement 60 days after receipt by Sopharma of a written notice from Extab informing Sopharma that Extab is no longer willing or able to pursue the exploitation of Licensed Patent Rights provided that in the event that this Agreement is terminated in such circumstances Extab shall use its best efforts to reduce the cost and/or loss incurred or suffered by any Third Party or sublicensees arising as a result of such early termination and Extab shall in any event pay all fees outstanding to such Third Party or sublicensees which they are contractually committee to pay and all fees and pass through costs incurred up to date of such termination.

(b) Extab shall have the right, in its sole and absolute discretion, to terminate this Agreement if Extab has not received at least US $[…***…] million in financing within 12 months following the Effective Date.

9.3 **Sopharma Rights of Termination.**

(a) Sopharma shall have the right to terminate this Agreement upon written notice if that certain Supply Agreement dated of even date hereof between Sopharma and Extab terminates or expires.

(b) Sopharma shall have the right, in its sole and absolute discretion, to terminate this Agreement upon written notice within 30 days if Extab has not received at least US $[…***…] million in financing within 12 months following the Effective Date.

9.4 **Termination for Material Breach by Either Party.**

Either Party may, at its option, terminate this Agreement for cause in the event that the other Party commits a material breach of this Agreement, and falls to cure such breach as follows:

(a) immediately upon written notice following the occurrence of an insolvency Event of the other Party at any time during the Term; or

(b) in all other cases, following a cure period of (i) 90 days after receipt of a written notice of such breach from thenon-breaching Party, or (ii) an extended cure period of 180 days following receipt of the written notice of such breach from the non-breaching Party, if such material breach cannot be reasonably remedied within the applicable Initial cure period of 90 days provided that the Party in material breach is diligently endeavoring to remedy such material breach and that it may be reasonably concluded that such material breach is remediable within such extended cure period. After the end of the applicable cure period, if the breach remains uncured, then the Party having the right of termination may exercise its termination option by giving the breaching Party prior written notice, of at least 15 days, of its election to terminate,

9.5 Consequences of Termination.

(a) In the event of termination of this Agreement for any reason whatsoever:

(i) The breaching Party shall not be released from any obligations incurred hereunder, and thenon-breaching Party shall be entitled to pursue an action for damages or other relief arising as a result of such material breach;

(ii) The non-breaching Party shall not thereby be discharged from any liability or obligation to the breaching Party which became due or payable prior to the effective date of such termination;

(iii) The rights and obligations of the Parties under Sections 3.2, 4, 5.5, 6.1, 6.3, 6.4, 8.1 (to the extent payment is due and owing), 9.5, 10, 11, 13 and 14 shall survive any termination of this Agreement;

(iv) Provided that Extab has not utilized any patents other than the Licensed IP with respect to the development of the Active Agent Product, then at Sopharma's written request and commensurate with legislative and regulatory requirements and free of all charge, cost and expense to Extab, Extab shall, and Extab shall procure that its Affiliates and sub-licensees or any Affiliates of a sublicensee shall, transfer to Sopharma or its nominee all MAAs, INDs, NDAs and other regulatory filings and approvals for Active Agent Product. In any country in which such a transfer is not possible Extab shall ensure that Sopharma has the benefit of the relevant MAAs, INDs, NDAs and other regulatory filings and approvals and to this end consents to any Regulatory Authority cross-referencing to the data and information on file with any Regulatory Authority as may be necessary to facilitate the granting of second MAA, NDAs, regulatory filings and approvals to Sopharma, and Extab shall complete whatever other procedures are necessary in relation to the same to enable Sopharma freely to develop and sell the Active Agent Product in substitution for Extab.

(b) In the event of termination of this Agreement pursuant to Section 9.2 (a) or 9.4:

(i) If Extab, its Affiliates or its sublicensees then possess Active Agent Product, have started the manufacture thereof or have accepted orders therefor, (x) Extab, its Affiliates or its sublicensees shall have the right to sell their inventories thereof, complete the manufacture thereof and market such fully manufactured Active Agent Product, in order to fulfill such accepted orders, subject to the obligation of Extab to pay Sopharma the royalty payments therefor as provided in Section 3 of this Agreement; and (y) provided further that if termination is a result of the breach of Sopharma as set forth in Section 9.4, then the license granted under Section 2.1 and the rights granted under Section *2.2* will continue for one year after the date of termination and the right granted under clause (x) above will arise at the end of the one year post-termination period;

(ii) Subject to Subsection 9.4(b)(i), Extab shall discontinue, and shall cause its Affiliates to discontinue, the manufacture, use, marketing and sale of Active Agent Products if the discovery, identification, development, manufacture, use or sale would infringe any Enforceable Claims of the Licensed Patent Rights;

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(iii) All rights sold, assigned or transferred by Sopharma to Extab under Section 2 shall revert to Sopharma, and Extab execute all instruments necessary and desirable to revest such rights to Sopharma, and

(iv) Upon any termination of this Agreement in its entirety because of a breach by one Party and the failure of said Party to cure such breach within the time prescribed herein this Agreement, neither Party waives any rights to any remedies it may have arising from the termination. In the event of any breach by a Party with respect to obligations that continue after a termination in its entirety of this Agreement, the non-breaching Party shall have all remedies available to it as if this Agreement were still in effect on the date of such breach.

10. CONFIDENTIAL INFORMATION.

10.1 **Confidential Information.** All confidential business, scientific, technical and financial information related to the Licensed IP and New IP communicated by each Party to the other, including, without limitation, information contained in patent applications and in royalty reports, (collectively, "Confidential Information") shall be received in strict confidence by the other Party, its Affiliates and sublicensees and any Affiliates of a sublicensee, used only for the purposes of this Agreement and not disclosed by the recipient Party, its Affiliates and sublicensees or their Affiliates or their respective agents or employees without the prior written consent of the disclosing Party, unless such information (a) was in the public domain at the time of disclosure, (b) later became part of the public domain through no act or omission of the recipient Party, its employees agents, successors, or assigns, (c) was lawfully disclosed to the recipient Party by a Third Party having the right to disclose it, (d) was already known by the recipient Party at the time of disclosure and recipient can so demonstrate by competent written proof or (e) is required to be disclosed to a governmental agency pursuant to such agency's rule and regulations in order to secure regulatory approval, provided that the recipient Party shall first give notice to the disclosing Party of such disclosure and shall have made a reasonable effort to maintain the confidentiality of such Information. Nothing contained herein shall prevent Extab or its Affiliates from disclosing information to sublicensees so long as such sublicensees agree to be bound by these confidentiality provisions,

10.2 **Use of Confidential Information.** Except as provided in this Agreement, neither Party shall use for its own benefit or the benefit of any Third Party, or disclose, publish, release, transfer or otherwise make available to any Third Party, any Confidential Information of the other Party without the other Party's prior written consent. Each of Sopharma and Extab, however, shall be permitted to disclose Confidential Information of the other to contractors and Third Parties, and its employees, Affiliates, accountants, attorneys and other agents to the extent such disclosure is reasonably necessary for the performance of its duties and obligations hereunder or, with respect to Extab, its use and enjoyment of licensed Patent Rights. Each of Sopharma and Extab shall be responsible for any violation of the confidentiality obligations set forth herein by any of the foregoing.

11. CHOICE OF LAW; DISPUTE RESOLUTION.

11.1 **Governing Law.** This Agreement is made in accordance with and shall be governed and construed in accordance with the laws of the United States of America and the State of Delaware, as applied to contracts executed and performed entirely within the United States of America and the State of Delaware, without regard to conflicts of laws rules, provided, however, that issues concerning the validity and construction of patents, trademarks and other intellectual property shall be determined in accordance with the laws of the country under which such intellectual property rights were granted.

11.2 **Arbitration.** If a dispute arises between the Parties relating to the interpretation or performance of this Agreement or the grounds for the termination thereof, the Parties shall hold a meeting, attended by individuals with decision-making authority regarding the dispute, to attempt in good faith to negotiate a resolution of the dispute prior to pursuing other available remedies. If, within 30 days after such meeting, the Parties have not succeeded in negotiating a resolution of the dispute, such

dispute shall be submitted to final and binding arbitration under the then current Licensing Agreement Arbitration Rules of the American Arbitration Association ("AAA") with a panel of three arbitrators in Wilmington County, Delaware; provided, however, that the State of Delaware Code of Civil Procedure shall apply to any such proceeding. Such arbitrators shall be selected by the mutual agreement of the Parties or, failing such agreement, shall be selected according to the aforesaid AAA rules. The language of the arbitration will be English. The Parties shall bear the costs of arbitration equally unless the arbitrators, pursuant to their right, but not their obligation, require the non-prevailing Party to bear all or any unequal portion of the prevailing Party's costs. The decision of the arbitrators shall be final and may be sued on or enforced by the Party in whose favor it runs in any court of competent jurisdiction at the option of the successful Party. The arbitrators will be instructed to prepare and deliver a written, reasoned opinion conferring their decision. The rights and obligations of the Parties to arbitrate any dispute relating to the interpretation or performance of this Agreement or the grounds for the termination thereof shall survive the expiration or termination of this Agreement for any reason.

12. COMMERCIALIZATION.

12.1 **Development and Performance Requirements.** Extab shall strive to submit an NDA or its equivalent for an Active Agent Product to the FDA or EMEA and the NDA or equivalent must be accepted by the FDA or EMEA within […***…] from the Effective Date of this Agreement. In the event an NDA or equivalent is not accepted by the FDA or EMEA within the prescribed time period as set forth herein, Extab shall have […***…] from the date of non-acceptance to resubmit its NDA or equivalent to the FDA or EMEA for reconsideration. Upon final rejection of Extab's resubmitted NDA or equivalent, this Agreement shall terminate and all rights granted to Extab hereunder shall terminate.

12.2 **Progress Reports.** Extab shall provide to Sopharma, on a confidential basis, on or before January 31 of each year, with*a* written report summarizing its progress with respect to its use of Licensed Patents Rights, and subsequently with respect to the development and commercialization of Active Agent Product within the Field in the Major markets, as appropriate. Such report shall include the current status of and timetable for preclinical studies and estimated dates for initiation and completion or clinical trials, and/or the status of and timetables for worldwide commercialization.

12.3 **Governmental Agency Registration.** Extab shall register this Agreement with any governmental agency that requires such registration, and Extab shall pay all costs and legal fees in connection therewith. In addition, Extab shall use reasonable commercial efforts to assure that all USA and International laws affecting this Agreement or the sale of Active Agent Product of which it is aware are fully satisfied.

12.4 **Use of Names of Parties.** Neither Party shall have the right to publicize this Agreement or its relationship with the other Party without the other Party's prior written approval, except as provided in this Section 12.3 and as may be required to comply with federal or state laws and regulation or the rules of any stock exchange.

13. ADDRESSES.

Any notice or other communication given under this Agreement shall be in writing in the English language and shall be:

(a) delivered by hand; or

(b) sent by pre-paid airmail; or

(c) sent by fax (confirmed by pre-paid airmail placed in the post on or on the day after the date of transmission);

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to the address or fax number set out below or to such other address or fax number as may from time to time be notified to the other Party in writing.

Sopharma JOINT STOCK COMPANY
16 Iliensko Shosse Str,
1220 Sofia, Bulgaria
Attn: Chairman & CEO Mr. Ognian Donev
Tel No: +359 2 936 20 63
Fax No. + 359 2 936 02 86

Extab Corporation
Corporation Trust Centre,
1209 Orange Street,
Wilmington, Delaware
19801, USA
Attn: Rick Stewart, Chairman & Chief Executive Officer
FAX:

or to such subsequent addresses as either Party may furnish the other by giving notice thereof as provided in this Section 13. Any notice given under Section 13 shall be deemed to have been received on the date of delivery if delivered by hand prior to 5:00 pm on a business day, otherwise on the next business day following the date of delivery; or on the fifth business day from and including the day of posting in the case of pre-paid airmail; or on the next business day following the day of transmission in the case of facsimile (confirmed by pre-paid first class post/airmail as provided above).

In this Section 13, business day shall mean a business day in the country to which the notice is sent.

14. MISCELLANEOUS.

14.1 **Assignment.** This Agreement shall be assignable by a Party to its Affiliates upon 30 days' prior written notice to the other Party; such written notice shall also contain an explanation by the assigning Party of why such assignment shall occur. If a Party assigns this Agreement to an Affiliate, the Party shall still be responsible for all of its obligations as specified in this Agreement. Any assignment other than to an Affiliate without the prior written consent of the other Party shall be void; provided, however, that either Party may assign this Agreement without prior consent (a) to the purchaser of all or substantially all of a Party's assets; or (b) to the successor following the merger or consolidation of a Party with another company. This Agreement shall be binding upon and inure to the benefit of Sopharma, Extab and their respective permitted assigns and successors in interest.

14.2 **Headings.** The headings used in this Agreement are for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

14.3 **Amendment.** No amendment or modification hereof shall be valid or binding upon the Parties unless made in writing and signed by both Parties.

14.4 **Force Majeure.** Any delays in performance by any Party under this Agreement other than the payment of monies due shall not be considered a breach of this Agreement if and to the extent caused by occurrences beyond the reasonable control of the Party affected, including but not limited to, acts of God, earthquake, embargoes, governmental restrictions, strikes or other concerted acts of workers, fire, flood, explosion, riots, wars, civil disorder, rebellion or sabotage. The Party suffering such occurrence shall immediately notify the other Party and any time for performance hereunder shall be extended by the actual time of delay caused by the occurrence.

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14.5 **Independent Contractors.** In making and performing this Agreement, Sopharma and Extab act and shall act at all times as independent contractors and nothing contained in this Agreement shall be construed or implied to create an agency, partnership or employer and employee relationship between Sopharma and Extab. At no time shall one Party make commitments or incur any charges or expenses for or in the name of the other Party except as specifically provided herein.

14.6 **Severability; Government Acts.** If any term, condition or provision of this Agreement is held to be unenforceable for any reason, it shall, if possible, be modified in order to achieve the intent of the Parties to this Agreement to the extent possible. In any event, all other terms, conditions and provisions of this Agreement shall be deemed valid and enforceable to the full extent. If any act, regulation, directive, or law of a country, including its departments, agencies or courts, should make impossible or prohibit, restrain, modify or limit any material act or obligation of a Party under this Agreement, and if either Party to this Agreement is materially adversely affected thereby, then the Parties shall use commercially reasonable efforts to attempt to negotiate a lawful and enforceable modification to this Agreement which substantially eliminates the material adverse effect; provided that, failing any agreement in that regard, the Party that is materially adversely affected shall have the right, at its option, to suspend or terminate this Agreement as to such country.

14.7 **Waiver**. Failure or delay by either Party to exercise any right or remedy under this Agreement shall not be deemed to be a waiver of that right or remedy, or prevent it from exercising that or any other right or remedy on that occasion or on any other occasion.

14.8 **Entire Agreement.** This Agreement contains the entire agreement and understanding between the Parties with respect to the subject matter hereof, and merges all prior discussions, representations and negotiations with respect to the subject matter of this Agreement. Except as expressly set forth in this Agreement, neither Party grants to the other by implication, estoppel or otherwise, any right, title license or interest in any intellectual property right. The Parties acknowledge that they are not relying on any agreement, understanding, arrangement, warranty, representation or term which is not set out in this Agreement.

14.9 **Publicity & Non-disclosure.** Except as required by law or by the rules of any stock exchange, each Party shall not, and shall procure that their respective personnel, their respective associates and the personnel of their respective associates shall not, make any announcement, or comment upon, or originate any publicity, or otherwise provide any information to any Third Party (other than its legal advisors) concerning this Agreement including but not limited to, the fact that the Parties are engaging in discussions, the existence of this Agreement, the terms of this Agreement, the performance of this Agreement and/or any dispute or disagreement relating to this Agreement without the prior written consent of the other Party (such consent not to be unreasonably withheld, delayed or conditioned.

14.10 **Counterparts.** This Agreement may be executed simultaneously in one or more counterparts, each one of which need not contain the signature of more than one Party but such counterparts taken together shall constitute one and the same agreement.

IN WITNESS WHEREOF, THE PARTIES, THROUGH THEIR DULY AUTHORIZED OFFICERS, HAVE EXECUTED THIS AGREEMENT AS OF THE EFFECTIVE DATE.

By: /s/ Dr. Ognian Donev
Name: Dr. Ognian Donev
Title: Chairman and CEO of Sopharma JOINT STOCK COMPANY

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EXTAB CORPORATION

By: /s/ Rick Stewart
Name: Rick Stewart
Title: Chairman

***Confidential Treatment Requested**

Exhibit 10.22

***** Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Extab Corporation
(Registered number 4519307)
Corporation Trust Centre, 1209 Orange Street,
Wilmington, Delaware 19801

Sopharma AD
16 Iliensko Shosse Str,
1220 Sofia, Bulgaria
Attn: Chairman & CEO Mr. Ognian Donev

Fax No. + 359 2 936 02 86

14 May 2015

Dear Sirs,

Variation of contract

We refer to the Exclusive License Agreement between you and us dated 26 May 2009 (the "**Agreement**"), a copy of which is attached to the Schedule to this latter agreement (the "**Variation**").

For the consideration of £1, we wish to amend the Agreement as set out in this Variation with effect from 14 May 2015 (the "**Variation Date**").

Expressions defined in the Agreement and used In this Variation have the meaning set out in the Agreement.

The Agreement is amended as follows:

1. The definition "Sopharma territory" shall tie added:

   "**Sopharma territory**": means Albania, Algeria, Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Finland, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Libya, Macedonia, Moldova, Mongolia, Norway, Poland, Romania, Russia, Serbia, Slovakia, Sweden, Tajikistan, Tunisia, Turkey Turkmenistan, Ukraine, Uzbekistan and Vietnam, Iran and Afghanistan;

2. The last line in the second paragraph in Section 2.1 shall be deleted and replaced in its entirety with:

   "exclusive supply agreement between the Parties dated 1 February 2010 ("**Supply Agreement**").

   The remainder of Section 2.1 shall remain unchanged.

3. Section 3 2 (a) shall be deleted and replaced in its entirety with:

   "Extab shall pay to Sopharma without set-off or counterclaim (save as otherwise permitted by this Agreement) a royalty of […***…]% on Net Sales of Active Agent Product sold by Extab, its Affiliates or sublicensees and their Affiliates in the Extab Territory throughout the Term."

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The remainder of Section 3.2 shall remain unchanged.

4. Section 9.1 shall be deleted and replaced in its entirety with:

   "**Term**, Unless earlier terminated under this Section 9, the term of this Agreement shall begin on the Effective Date of this Agreement and shall remain in force for a period of 20 years from the Effective Date ("**Term**") and may be extended by mutual agreement of the Parties."

5. Section 9.3 (a) shall be deleted in its entirety and Section 9.2 (b) shall become Section 9.2.

6. Section 9.4 shall be deleted and replaced in its entirety with:

   "Each Party shall have the right to terminate this Agreement upon written notice to the other Party;

   a. immediately upon such notice if an Insolvency Event of the other Party; or

   b. if the ether Party commits a material breach of this Agreement, and does not remedy such breach within 180 days of notice of such breach."

All other terms of the Agreement shall remain unchanged and in force.

Please sign and return the enclosed copy of this letter to acknowledge your agreement to this Variation.

Yours faithfully,

/s/ Extab Corporation
for and on behalf of **EXTAB CORPORATION**

We agree to the variation of the Agreement with effect from the Variation Date on the terms set out above.

Signed /s/ Sopharma AD
for and on behalf **SOPHARMA AD**

Date 5/14/15

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Schedule

The Agreement

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Exhibit 10.23

***** Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

COMMERCIAL AGREEMENT ON SUPPLY OF PHARMACEUTICAL PRODUCTS

entered into on February 1, 2010 by and between:

Extab Corporation whose registered address is at Corporation Trust Centre, 1200 Orange Street Wilmington, Delaware 19801, USA (hereinafter referred to as "EXTAB")

and

SOPHARMA AD whose registered address is at 16, Iliensko Shosse Blvd., 1220 Sofia, Bulgaria having a VAT number BG 831902088 (hereinafter referred to as "SOPHARMA")

Definitions:

Whenever written in capital letters throughout this Agreement, the following words shall have the meaning as hereinafter defined:

1.1 AFFILIATE shall mean with respect to either PARTY any person, partnership, corporation, organisation or entity that directly or indirectly controls or is directly or indirectly controlled by or is under common control with such PARTY. A person or entity shall be regarded as controlling entity if

(i) it owns more than fifty percent (50%) of the voting stock or other ownership interest of such other entity; or

(ii) it directly or indirectly possesses sufficient authority to direct the adoption and/or execution of the policies, management or operations of such PARTY by any means whatsoever.

1.2 M/A: shall mean the Marketing Authorisation/s & permit/s for the marketing and sale of PRODUCTS granted by the competent Health Authorities in the TERRITORY.

1.3 DOSSIER: shall mean a document complied by EXTAB according to the requirements of the European Union and/or United States in force by the date of signature of this Agreement, such document being necessary and useful for the grant of the M/A for the related PRODUCT. The DOSSIER shall contain all relevant analytical, technical and galenical data and batch record as well as stability tests, bioequivalence studies and comparative dissolution testing for each country of the European Union and/or the United States within the TERRITORY. Declaration Letters about Manufacturer, DMF, certificate of TSE freeness according to applicable EU-guidelines Letter of Access for the DMF. The DOSSIER will be written in the English language and will be delivered in hardcopy in the Common Technical Document format. The preparation of the Module I and the application for the Authorities of the territories shall be the obligation of the EXTAB and at EXTAB's costs.

1.4 PRODUCTS: shall mean the pharmaceutical products regardless of their completeness listed in Annex 1.

1.5 TERRITORY: shall mean the countries listed in Annex 1. The use of the dossier outside the Territory can only be allowed with the written consent to EXTAB. SOPHARMA shall refrain from allowing access to third parties in the M/A's with the aim of duplicates and/or third party label distribution through out the duration of this agreement. This clause will survive termination and/or expiration of the agreement.

1.6 Third Party shall mean all legal entities other than the parties and their Affiliated Companies.

1. Scope

This Agreement shall govern the commercial part of the exclusive contract for the manufacture of pharmaceutical specialities as listed in Annex 1 hereto (hereinafter referred to as "PRODUCT/S") by SOPHARMA for EXTAB and the exclusive licencing of such PRODUCTS by EXTAB as defined in the Licence Agreement concluded between the parties on 31 March 2009.

2. Basic regulations and permits

2.1 Both parties hereby declare to have been granted by the competent authorities the permits being necessary for the manufacture and or the distribution of pharmaceutical products.

2.2 SOPHARMA's manufacture shall be effected in strict accordance with the current and applicable GMP guidelines of the European Union with the specifications given in the DOSSIER, being subject to the Licence agreement concluded by and between SOPHARMA and EXTAB. Detailed obligations of SOPHARMA for the manufacture of the products shall be included in the Technical Agreement to be signed on a later stage between the parties.

2.3 EXTAB hereby covenants and agrees that it will market and sell PRODUCTS only in the TERRITORY and that it will not register or sell any generic product in the TERRITORY having the same Active Pharmaceutical Ingredient and in the same form and strength as those described in this agreement.

3. Forecasts and orders

3.1 During the term or this Agreement, EXTAB shall purchase exclusively from SOPHARMA all its requirements of PRODUCTS for the TERRITORY (as specified in Annex 1) with consignments supplied by SOPHARMA, and SOPHARMA agrees to sell to EXTAB such quantities of Products (as specified in Annex 2) that EXTAB orders in accordance with the terms of this Agreement.

3.2 By November 30 each year, EXTAB shall submit to SOPHARMA forecasts of quantities of PRODUCTS EXTAB intend to buy during the following calendar year (budgeted quantities).

On a quarterly basis EXTAB shall update the forecast for the following six (6) months period (capacity-planning-quantities).

The budgeted quantities and capacity-planning-quantities shall be understood to be non-binding forecasts.

3.3 Binding orders shall be submitted to SOPHARMA at least 16 weeks before delivery date (delivery at specified location). The delivery time for the first (launch) order shall be 24 weeks.

Within 5 working days SOPHARMA shall confirm receipt of EXTAB's order (order confirmation).

3.4 Orders for PRODUCT for more than the forecasted quantities shall be executed by SOPHARMA within its manufacture and supply capacities.

3.5 Delivery time shall be calculated from confirmed order-date and delivery shall be supply of PRODUCTS and documents (especially certificates of analysis, invoice) at the specified location.

3.6 EXTAB shall provide the blister and packaging designs to SOPHARMA at least sixteen (16) weeks prior to scheduled delivery date. If EXTAB is late to do so, the delivery date for PRODUCTS shall be delayed by as many days as EXTAB is late to deliver the designs. All costs for designing the packaging material shall be fully paid by EXTAB.

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4. Prices and Delivery

4.1 Within the TERRITORY the supply price shall be as per Annex 2 of this Agreement for each country of the TERRITORY. Individual order shall be invoiced at supply prices increased by […***…]%.

4.2 Should the supply price fall below the Supply Price as per Annex 2 in the TERRITORY, the parties upon request of either negotiate a new Supply Price for the respective country of the TERRITORY. Such new Supply Price shall take into account material increases or decrease in cost of raw materials, packaging, labour or overhead attributable to the manufacture of the Products.

4.3 Should the parties be unable to agree on a new supply price, SOPHARMA shall not be required to supply the PRODUCT according to the Supply Agreement to EXTAB and EXTAB shall be free to manufacture the PRODUCT itself or through third parties, provided EXTAB pays SOPHARMA a royalty during a defined royalty period. Such royalty shall be equivalent to […***…]% of EXTAB net sales of the PRODUCT in all countries of the TERRITORY where it is authorised to sell PRODUCT. The royalty period during which the above will apply will be for the remainder of the term according to 9.1. All royalty shall be payable quarterly to SOPHARMA in arrears.

4.4 Invoices shall be settled by EXTAB within 30 days following the date invoice.

4.4.1 EXTAB agrees to place its orders in multiple quantities of the minimum order quantities as defined in Annex 2 unless otherwise agreed.

4.4.2 The prices provided in Annex 2 when referring to finished goods have taken into consideration the following specifications:

Colour of blister: 1 colour printing
Colour of Packaging: 3 colours printing
Colour of Inset Leaflet: 1 colour
Minimum Quantity of 5,000 packs per delivery.

5. Defective PRODUCTS

5.1 Within 14 days after receipt of shipment, EXTAB or its AFFILIATES shall inspect the PRODUCTS and inform SOPHARMA about defects in quantity or quality. Such inspection shall be limited to control of intactness of secondary packing (damages) and the completeness of information indicated on the packing list.

5.2 Hidden defects may be claimed at any time upon disclosure.

SOPHARMA's warranty shall extend to the shelf-life of the PRODUCTS.

5.3 In the event of defects EXTAB may claim at its option:

- improvement
- destruction
- replacement shipment
- reduction of invoice amount

All costs relating to the supply and replacement of detective PRODUCTS shall be at SOPHARMA's expense. SOPHARMA's liability will be limited only to the replacement of the defective quantities.

5.4 In case the parties disagree whether the PRODUCTS are defective, then an independent laboratory, mutually agreed upon, will be assigned for verifying this point. The results of this laboratory will be binding for both Parties and the costs for such laboratory examinations will be born by the Party found to be at fault.

6. Information and responsibility

6.1 The Product shall be manufactured by SOPHARMA in accordance with the Specifications and subject to current standards of good manufacturing practice as published from time to time by the relevant authorities within the E.U. countries in the TERRITORY.

SOPHARMA warrants and represents that:

a) Product supplied by SOPHARMA to EXTAB and/or its Affiliates will be free from defects in composition, manufacture and ingredients and shall comply with the specifications and registration requirements and with current standards of good manufacturing practice as published from time to time by the relevant authorities within the E.U. countries in the TERRITORY in relation to medicinal products;

b) the Facility is approved or will be approved if required by any relevant authorities within the European Union or US.

6.2 SOPHARMA agrees to indemnify EXTAB against all direct losses, damages, costs and expenses incurred by EXTAB arising from product liability claims by third parties in respect of death and personal injury, related to the manufacture, of the Product by SOPHARMA in deviation of the specifications described in the DOSSIER or as approved by the Health Authority in the TERRITORY.

6.3 EXTAB agrees to indemnify SOPHARMA, its officers and directors, against all direct losses, damages, costs and expenses incurred by SOPHARMA arising from third parties claims, related to the distribution, sale or marketing of the Product by EXTAB in the Territory other than in respect of matters in relation to which SOPHARMA has indemnified EXTAB.

7. Confidentiality and Inspection

7.1 Both parties shall treat as confidential the contents of this Agreement and any information relating to PRODUCTS disclosed by either party to each other pursuant to or in connection with this Agreement.

7.2 EXTAB shall treat all documents provided by SOPHARMA and all other information obtained in the execution of this Agreement as strictly confidential and shall not pass it on to third parties.

7.3 However, under corresponding secrecy obligations EXTAB shall be entitled to pass on confidential information, including but not limited to the DOSSIER to its present and future AFFILIATES, manufacturers for or of EXTAB and partners of EXTAB, directly involved in the performance of this Agreement.

7.4 These confidentiality provisions do not apply to information, which

a) is or becomes part of the public knowledge through no fault of the receiving party;

b) was in EXTAB's possession at the time of receipt and was not acquired directly or indirectly from SOPHARMA, or is subsequently obtained from a third party who has the lawful right to disclose it;

c) EXTAB must make accessible to doctors, patients, pharmacists or competent authorities, or is developed independent from the SOPHARMA without breaching or falling within the scope of EXTAB's patents or patent applications and existing Know How;

7.5 The confidentiality obligation shall remain in full force for a minimum of 10 years following the signature of this Agreement and shall survive the termination of the agreement for what so ever reason.

7.6 Upon reasonable notice EXTAB shall have the right to inspect SOPHARMA's manufacture, storage and quality control facilities being used for the manufacture of PRODUCTS, in order to verify that SOPHARMA is adhering to its obligations under this Agreement. If EXTAB is not satisfied that SOPHARMA is complying with such obligations then (without prejudice to its other rights) it shall notify SOPHARMA in writing of any changes or modifications it reasonably requires which SOPHARMA shall implement as soon as possible. Such right shall be extended to inspections of competent authorities being in charge of registration of the PRODUCTS.

8. Force majeure

8.1 Unless otherwise agreed upon in this Agreement, each of the parties hereto shall be excused from the performance of its obligations hereunder in the event such performance is prevented by Force Majeure, provided that each of the parties shall use its best endeavours to complete such performance by other means. However, after such force majeure situation shall have ceased the parties shall resume their shipments under this Agreement and shall negotiate in good faith how to effect and take delivery of the shipments not made due to the force majeure situation.

8.1.1 For the purpose of this Agreement, Force Majeure shall be causes beyond the contract of EXTAB or SOPHARMA including but not limited to acts of God, war, civil commotion, earthquake or storm, labor disturbances, epidemic and failure of public utilities.

8.1.2 In the case that the Force Majeure continues for more than three (3) months and if SOPHARMA is unable to secure the performance of its obligations, EXTAB shall be free to source in Products manufactured by a third party for as long as the force majeure continues. EXTAB shall continue receiving supplies from SOPHARMA right after the force majeure is declared as remedied from SOPHARMA.

9. Duration of the Agreement

9.1 This Agreement shall come into full force and effect for a period of ten (10) years following the launch of PRODUCT by EXTAB in the TERRITORY. This agreement may be renewed for periods of twelve months by six (6) months notice prior to the expiration of this agreement or any consecutive renewal period to the other party.

9.2 Irrespective of any termination of this Agreement it shall remain valid for orders having been placed before termination.

9.3 Upon termination or non renewal of this agreement, EXTAB shall buy, pay and take over the remaining packaging material that are either already ordered or forecasted by EXTAB.

10. Termination

10.1 Either party shall have the right to terminate this Agreement hereunder by registered air-letter at any time without previous notice:

a) if the other party hereto shall go into liquidation or shall be declared bankrupt or shall compound with its creditors;

b) if the other party hereto shall commit any material or substantial breach of any of its obligations hereunder and/or of any of the provisions of this Agreement and shall not remedy this breach within a thirty days' notice given by the other party.

Neither the expiration, nor the termination of this Agreement for whatsoever reason shall affect any rights or obligations of a Party which have accrued prior to the expiration or termination of this Agreement. The Confidentiality Obligations set forth in this Agreement shall survive termination or expiration of this Agreement.

11. Miscellaneous

11.1 All notices related to this Agreement shall be in writing and in English and should be sent to the registered addresses stipulated in this agreement or to such other addresses as may have been stipulated by the parties and will be considered to be delivered either on signed confirmation or 5 days after dispatch. To be valid, Amendments and modifications to this Agreement have to be signed by both parties.

11.2 Should any of the individual provisions become invalid, the validity of this Agreement as a whole shall not be affected. With regard to any invalid provisions the parties hereto shall endeavour to supplement the invalid provision with a valid provision which comes as close as possible to achieving the economic purpose of the original, invalid provision.

11.3 This Agreement, including the Annexes hereto, embodies the entire understanding of the parties and it overrides or supersedes all or any prior representations, understandings on implications made by either party at any time whether orally or in writing.

11.4 This Agreement may be executed in counterparts, each of which shall constitute an original and all of which together shall constitute a single agreement.

11.5 The failure of any "Party" at any time to enforce any of the terms, provisions or conditions of this Agreement or to exercise any right there under shall not constitute a waiver of the same or affect the validity of this Agreement or any party hereof, or that "Party's" right thereafter to enforce or to exercise the same. No waiver by a "Party" shall be valid or binding, unless in writing and signed by a duly authorised representative of the waiving "Party".

11.6 The preamble of this Agreement forms an integral part hereof. Clause headings in this agreement are intended for convenience or reference and shall be given no effect in the interpretation of this Agreement.

11.7 This Agreement does not constitute either "Party" as the legal representative of the other for any purpose whatsoever. Neither party is granted any right or authority to assume or to create any obligation or responsibility, express or implied, on behalf or in the name of the other, with regard to any manner or thing whatsoever, unless otherwise specifically agreed upon in writing.

11.8 The signed Proprietary Information Purchase Agreement, whether attached at the time of signature hereof or at any time thereafter, shall be construed as an integral part of this Agreement.

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12. Applicable law and jurisdiction

12.1 This Agreement shall be governed by laws of the United States of America and the State of Delaware. Any disputes arising out of or in connection with this Agreement shall be exclusively settled by arbitration according to the Rules of Arbitration and Conciliation of American Arbitration Association.

As WITNESS the parties have caused this Agreement to be entered into by their duly authorised representatives on behalf of the parties on the date first above written.

EXTAB

/s/ Rick Stewart
Rick Stewart
President

SOPHARMA

/s/ Dr. Ognian Donev
Dr. Ognian Donev
Chairman of the Board and CEO

***Confidential Treatment Requested**

Initial Here: _____

Annex 1

to the Commercial Agreement on supply of pharmaceutical products by and between EXTAB and SOPHARMA dated ….

THE PRODUCTS

Supplied packed and labelled in accordance with agreed requirements for each country within the TERRITORY and as specified in the Dossier being subject to the Licence agreement concluded by and between the parties hereto and dated 31 March 2009.

THE TERRITORY

"**Territory**" shall mean all countries, territories and regions of the world, excluding the Sopharma Territory.

"**Sopharma Territory**" shall mean Albania, Algeria, Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Finland, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Lybia, Macedonia, Moldova, Mongolia, Norway, Poland, Romania, Russia, Serbia, Slovakia, Sweden, Tajikistan, Tunisia, Turkey, Turkmenistan, Ukraine, Uzbekistan and Vietnam.

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Annex 2

to the Commercial Agreement on supply of pharmaceutical products by and between EXTAB and SOPHARMA dated ….

SUPPLY PRICES AND MINIMUM ORDER QUANTITIES

The Supply Prices and Minimum Order Quantity for the Product **packed in bulk** shall be considered as Ex factory Bulgaria.

Product	Strength / Form	Supply Price Ex Works (Euro) per kg	Minimum Order Quantity in kg
Cytisine	Active product ingredient	[...***...]	[...***...]

The Supply Prices and Minimum Order Quantity for the Product **packed in secondary packaging as per Article 4.5.2**.

Product	Strength/Form	No of blisters of 10 per pack	Price per finished packs 100	Minimum Order Quantity
Tabex	1.5 mg coated tablet	10	[...***...]	[...***...]

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Initial Here: _____

Exhibit 10.24

***** Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Extab Corporation
(Registered number 4619307)
Corporation Trust Centre, 1209 Orange Street,
Wilmington, Delaware 19801

Sopharma AD
16 Iliensko Shosse Str,
1220 Sofia, Bulgaria
Attn: Chairman & CEO Mr. Ognian Donev

Fax No. + 359 2 936 02 86

14 May 2015

Dear Sirs,

Variation of contract

We refer to the Commercial Agreement on Supply of Pharmaceutical Products between you and us dated 1 February 2010 (the "**Agreement**") a copy of which is attached to the Schedule to this letter agreement (the "**Variation**").

For the consideration of £1, we wish to amend the Agreement as set out in this Variation with effect 14 May 2015 (the "**Variation Date**").

Expressions defined in the Agreement and used in this Variation have the meaning set out in the Agreement.

The Agreement is amended as follows:

1. A new definition under "Definitions" is added between "DOSSIER" and "PRODUCTS":

   "FINISHED PRODUCT: shall mean the finished Active Agent (as defined in the LICENCE AGREEMENT) packed in the secondary packaging."

2. A new definition under "Definitions" is added between "PRODUCTS" and "TERRITORY":

   "SUPPLY PRICE: shall mean the price of the PRODUCT set out in Annex 2."

3. The definition "Sopharma territory" shall be added:

   "SOPHARMA TERRITORY: means Albania, Algeria, Armenia, Austria, Azerbaijan, Belarus, Bosnia, and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Finland, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Libya, Macedonia, Moldova, Mongolia, Norway, Poland, Romania, Russia, Serbia, Slovakia, Sweden, Tajikistan, Tunisia, Turkey, Turkmenistan, Ukraine, Uzbekistan and Vietnam, Iran and Afghanistan"

4. In Section 1, the last two lines of the paragraph shall be deleted and replaced in their entirety with: "EXTAB as defined in the licence agreement between the parties dated 26 May 2009 ("LICENCE AGREEMENT")."

   The remainder of Section 1 shall remain unchanged.

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5. The final sentence of Section 2.2 shall be deleted and replaced in its entirety with:

"Detailed obligations and respective responsibilities of the parties relating to the manufacture (including without limitation the technical and quality aspects) shall be included In the Technical and Quality Agreement (as may be amended by agreement of the parties In writing) which shall be agreed by the parties, acting reasonably."

6. A new Section 2.4 shall be added to the Agreement after Section 2.3:

"If either party develops a synthetic version of the ACTIVE AGENT, such party must exclusively license any and all rights in the same to the other party on the terms of this Agreement (for clarity, this means that EXTAB may only exploit such rights in the TERRITORY and SOPHARMA may only exploit such rights in the SOPHARMA TERRITORY)."

7. Section 4 1 shall be deleted and replaced in its entirety with:

"The SUPPLY PRICE applies to orders equal to or greater than the MINIMUM ORDER QUANTITY set forth in Annex 2. If EXTAB places an order for less than the quantities of PRODUCT specified in Annex 2, EXTAB shall pay to SOPHARMA the SUPPLY PRICE plus […***…]% of the SUPPLY PRICE."

8. Section 4.2 shall be deleted and replaced in its entirety with:

"If the market price of the PRODUCT (being the price at which the PRODUCT is sold) in a country in the TERRITORY is less than the SUPPLY PRICE, the Parties shall negotiate, acting reasonably, a new supply price for such country. When negotiating the new supply price the Parties shall consider the increases and/or decreases in the cost of raw materials, packaging, labour, overheads and/or distribution and/or manufacture of the PRODUCT. If a new supply price is agreed, such new supply price shall become the SUPPLY PRICE for such country."

9. Section "4.5.1" shall be renamed Section "4.5".

10. Section 4.5.2 shall be deleted in its entirety

11. A new Section 4.6 shall be added to Section 4:

12. "SOPHARMA shall deliver (the "**DELIVERY**"):

4.6.1 PRODUCT purchased in Bulk Ex Works (as defined in Incoterms 2010); and/or

4.6.2 PRODUCT purchased as FINISHED PRODUCT Ex Works (as defined in Incoterms 2010)

except that SOPHARMA shall, at the request and cost of EXTAB, arrange for the transport of such Bulk PRODUCT to EXTAB's FINISHED PRODUCT manufacturer."

13. A new Section 4.7 shall be added to Section 4:

"Each order of FINISHED PRODUCT made by EXTAB shall be for a minimum of 5,000 packs per DELIVERY."

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14. Section 9.1 shall be deleted and replaced in its entirety with:

"Unless earlier terminated under Section 10, the term of this Agreement shall begin on the Effective Date of this Agreement and shall remain in force for a period of 20 years from the Effective Date and may be extended by mutual agreement of the Parties."

The remainder of Sector 9 shall remain unchanged.

15. Section 10 shall be deleted and replaced in its entirety with:

"Each party shall have the right to terminate this Agreement upon written notice to the other party:

(a) immediately upon such notice the other party goes into liquidation, is declared bankrupt and/or compounds with its creditors; or

(b) if the other party commits a material breach of this Agreement, and does not remedy such breach within 180 days of notice of such breach."

16. The second paragraph in Annex 1, under the title "THE PRODUCTS" shall be deleted and replaced in its entirety with:

"Supplied packed and labelled in accordance with the agreed requirements for each country within the TERRITORY and as specified in the Dossier being subject to the LICENCE AGREEMENT."

17. The first table's title in Annex 2 shall be deleted and replaced in its entirety with:

"The SUPPLY PRICES and MINIMUM ORDER QUANTITY for the PRODUCT."

18. The second table and table title in Annex 2 shall be deleted and replaced in its entirety with:

"The SUPPLY PRICES and MINIMUM ORDER QUANTITY for FINISHED PRODUCT

Product	Strength/Form	Number of blisters per pack	Price per packs of 100	Minimum Purchase Quantity (in packs)
Tabex	1.5 mg coated tablet	10 (9 blisters of 10 tablets, 1 blister of 11 tablets)	[...***...]	[...***...]

The SUPPLY PRICES for the finished PRODUCT include the following costs:
Colour of the blister packaging: printing using 1 colour
Colour of packaging: printing using 3 colors
Colour of insert leaflet: printing using 1 colour"

All other terms of the Agreement shall remain unchanged and in force.

Please sign and return the enclosed copy of this letter to acknowledge your agreement to this Variation.

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Yours faithfully,

/s/ Extab Corporation
for and on behalf of **EXTAB CORPORATION**

We agree to the variation of the Agreement with effect from the Variation Date on the terms set out above.

Signed /s/ Sopharma AD
for and on behalf of **SOPHARMA AD**

Date 5/14/15

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Exhibit 10.25

***** Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

DATED May 14, 2015

(1) EXTAB CORPORATION

(2) SOPHARMA AD

Technical and Quality Agreement

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Pinsent Masons

THIS TECHNICAL AND QUALITY AGREEMENT (the "**Agreement**") is made on 14 May 2015 (the "**Effective Date**")

BETWEEN:-

(1) **EXTAB CORPORATION** of Corporation Trust Centre 1209 Orange Street, Wilmington, Delaware 19801, USA ("**EXTAB**"); and

(2) **SOPHARMA AD** of 16, Iliensko Shosse Boulevard, 1220 Sofia, Bulgaria ("**SOPHARMA**")

each a "**Party**" and together the "**Parties**".

WHEREAS:-

(A) The Parties entered into a commercial agreement on the supply of pharmaceutical products on 1 February 2010 (the "**Supply Agreement**"), under which Sopharma manufactures and supplies the products (as defined therein) to Extab.

(B) Pursuant to the Supply Agreement the Parties wish to outline Sopharma's detailed obligations in relation to the manufacture and quality of the Products.

IT IS AGREED as follows: -

1. **INTERPRETATION**

1.1 In this Agreement:-

"**Active Agent**"	means the active pharmaceutical ingredient, Cytisine (including intermediates, salts, esters and pharmaceutical compositions containing Cytisine;
"**Batch Release Documentation**"	means executed batch records, test records, Certificate of Analysis and Certificate of Compliance;
"**Certificate of Analysis**"	means in respect of a product and/or material, a certificate signed by a qualified and authorised representative of the manufacturer confirming results of analysis of such product and/or material and that such product and/or material complies with its agreed specification along with the methods by which the analysis was performed;
"**Certificate of Compliance**"	means in respect of the Product, a certificate signed by a qualified and authorised representative of Sopharma confirming that the Active Agent is cGMP compliant;
"**Certificate of Conformance**"	means in respect of the Product, a certificate signed by a qualified and authorised representative of Sopharma confirming that the Product complies with this Agreement and the Specifications;
"**Contact Persons Table**"	means the Parties' contact details as set out in the table in Schedule 2;

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"**Critical Quality Attributes**"	means aspects influencing Active Agent purity, potency, stability and drug release and are defined by Raw Material,in-process control, intermediate products and Active Agent's Specifications;
"**cGMP**"	means current Good Manufacturing Practice as defined in the laws, regulations and guidance of the European Union and all other corresponding applicable national laws and regulations;
"**Deviation**"	means a critical deviation or OOS or OOT that may directly or indirectly influence the specified Critical Quality Attributes of Raw Material, process intermediates and the Active Agent and/or their regulatory compliance;
"**Division of Responsibilities Table**"	means the table set out in Schedule 1;
"**Finished Product**"	shall nave the meaning set out in the Supply Agreement;
"**Master Batch Records**"	means a record that describes the step by step procedures to be followed during manufacturing the Active Agent, and used to generate each individual batch record that is issued when a given batch of Active Agent is to be manufactured;
"**OOS**"	means that the Product and/or Active Agent is out of the Specifications;
"**OOT**"	means that the Product and/or Active Agent is out of trend;
"**Product**"	has the meaning set out in the Supply Agreement and includes the Active Agent and the Finished Product;
"**Quality Unit**"	means the group of persons responsible for the quality and safety relating to the Product;
"**Raw Materials**"	means all materials, reagents, solvents, chemicals and similar components intended for use in the production of intermediates or the Active Agent, including [Sopharma to insert specific raw materials]; and
"**Specifications**"	means the specifications of the Active Agent and Finished Product set out in Schedule 3.

1.2 Clause headings shall not affect the interpretation of this Agreement. References to Clauses and Schedules are to the clauses of and schedules to this Agreement.

1.3 Unless the context otherwise requires, words in the singular include the plural and in the plural include the singular and a reference to one gender shall include a reference to the other genders.

1.4 A reference to a statute, statutory provision or subordinated legislation is a reference to it as it is in force from time to time, or extended obligation, liability or restriction on, or otherwise adversely affect the rights of, any party. A reference to a statute or statutory provision shall include any subordinate legislation made from time to time under that statute or statutory provision.

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1.5 Any words following the terms including, include, in particular or any similar expression shall be constructed as illustrative and shall not limit the sense of the words preceding those terms.

2. **DIVISION OF RESPONSIBILITIES**

Each Party shall be responsible for meeting their respective responsibilities as set out in the Division of Responsibilities table.

3. **CONTACT PERSONS**

All communications between the Parties under this Agreement shall be in accordance with the Contact Persons Table, as appropriate.

4. **EQUIPMENT AND PROCESS REQUIREMENTS**

4.1 [Sopharma to insert any specific requirements relating to the equipment and/or process (i.e. certificates, equipment materials etc.)]

5. **METHODS**

5.1 Sopharma is responsible for facility, utility and equipment qualification and ensuring that these items remain within a qualified and validated state. Qualification documentation shall be available for review during an audit.

5.2 Sopharma is responsible for maintenance, qualification of the facility and equipment of the Active Agent.

5.3 Sopharma is responsible for providing the Master Batch Records to Extab for approval prior to and after process execution.

6. **RAW MATERIALS**

6.1 Sopharma shall be responsible for the purchase, storage, handling, sampling, testing and approval or rejection of materials used in manufacturing the Active Agent pursuant to the Supply Agreement.

6.2 Sopharma must utilize documented material inspection plans and testing procedures. The results of this inspection and testing must be in accordance with any and all instructions supplied by Extab.

6.3 Sopharma will inspect and/or test all materials on a batch-by-batch basis.

6.4 Sopharma shall only purchase materials from approved suppliers. Approval by Extab is required for any change in the supplier of Raw Material.

6.5 Sopharma will provide the material name, supplier name and a Certificate of Analysis for all Raw Materials used in the manufacturing of the Active Agent to Extab.

6.6 Raw Materials supplied by qualified vendors can be subject to reduced testing but a minimum identification testing (or visual examination in case of hazardous or highly toxic raw materials) needs to be performed for each Delivery (as defined in the Supply Agreement) and each batch.

7. **MANUFACTURING**

7.1 Sopharma shall manufacture the Product in accordance with this Agreement, the Supply Agreement, cGMP and the Specifications.

7.2 Manufacturing processes will be performed in cGMP classified areas for the production of the Active Agent. Manufacturing will be performed in accordance to regulatory guidelines and will be documented accordingly.

7.3 Manufacturing Master Batch Records will be prepared by Sopharma and approved by Extab prior to the start of production.

7.4 Extab representatives will be allowed on-site for support during all manufacturing operations. To the extent possible, Extab will notify Sopharma in advance for prior arrangements.

7.5 The Parties agree that the below flow diagram represents the Product manufacturing process:

[Sopharma to insert flow diagram for Product production]

8. **RETENTION SAMPLES AND REFERENCE SAMPLES**

8.1 Sopharma will take and retain samples of Raw Materials necessary for full testing requirements. Such samples will be stored for three (3) years past the expiration date of the Raw Material. Extab will be notified and consulted prior to disposal of any such samples.

8.2 Sopharma will take and retain samples of the Active Agent equivalent to at least […***…] times the amount of full testing requirements. The samples and retains will be stored for three (3) years past the retest date of the Raw Material. Extab will be notified and consulted prior to disposal of any such samples.

8.3 Sopharma will be responsible for retention, maintenance and management of samples in accordance with cGMP requirements.

8.4 Sopharma will be responsible for the annual visual inspection of the reserve samples of the Active Agent and communication of the results of the inspection to Extab.

9. **STORAGE AND PACKAGING PROCESS**

9.1 Sopharma is responsible for managing the storage of Raw Materials used for the manufacture of the Active Agent, all Active Agent process intermediates and the Active Agent at all times and ensuring that the materials are stored under appropriate conditions and in accordance with cGMP requirements.

9.2 The Parties agree that the below flow diagram represents the Product packaging process:

[Sopharma to insert flow diagram for Product packaging process]

10. **SAFETY, CLEANING AND WASTE MANAGEMENT**

10.1 Extab will disclose any and all available toxicological, eco-toxicological and any Active Agent related safety or adverse event within a reasonable timeframe.

10.2 Sopharma is responsible for cleaning and waste management of the manufacturing facility in accordance with Extab approved Standard Operating Procedures (SOPs) and in compliance with all local laws and regulations associated with waste disposal.

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11. **QUALITY CONTROL**

11.1 New reference standards will not be qualified by Sopharma without prior written authorization from Extab.

11.2 The in-process control ("IPC") samples, process intermediate products and the Active Agent will be tested by Sopharma according to the instructions and written procedures agreed upon by the Parties.

12. **DEVIATION AND OUT OF SPECIFICATION**

12.1 Any Deviations and/or OOS during manufacturing and/or testing will be communicated to Extab in writing within one (1) week of confirmation. After confirmation of an OOS or Deviation, no additional testing or sampling shall be performed without prior approval from Extab.

12.2 Any non-critical deviations from approved procedures for manufacturing and testing of the Active Agent will be assessed and approved by Sopharma's Quality Unit.

12.3 All Deviation and OOS reports, critical and non-critical, will include the following:-

12.3.1 occurrence date;

12.3.2 list of impacted batch(es);

12.3.3 description of the Deviation or OOS and immediate actions taken;

12.3.4 impact of the Deviation or OOS on Active Agent quality;

12.3.5 investigation summary (if applicable);

12.3.6 root cause (if known); and

12.3.7 corrective and preventive action (if applicable).

12.4 All Deviation or OOS will be investigated for root cause and fully documented by Sopharma within thirty (30) calendar days of the date of discovery. These investigations will include proper justification, scientific rationale and data where appropriate. In the event that a Deviation cannot be resolved within thirty (30) calendar days, Sopharma will provide a memorandum to Extab with periodic updates at least every fourteen (14) calendar days of the investigation's progress.

12.5 Extab may participate in any full-scale investigation concerning all Deviations and OOS results.

12.6 Documentation related to investigations will be retained as part of the batch. Copies of the completed and approved Deviation or OOS reports will be provided to Extab immediately.

12.7 When deemed necessary, Extab reserves the right to request additional or more in-depth investigation of the Deviation or OOS by Sopharma.

12.8 In all cases, when a critical Deviation or OOS occurs on a batch, Extab will have the final review and decision-making responsibility as to the impact of the Deviation(s) on the Active Agent which will include disposition of the affected batches.

13. **CHANGE CONTROL AND COMPLIANCE**

13.1 All SOPs are managed by Sopharma.

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13.2 Sopharma will communicate to Extab without delay and in due time any critical change request(s) in manufacturing and testing of the Active Agent. Extab will approve the change requests prior to implementation.

13.3 Extab shall assess any change request received from Sopharma in a timely manner, and Extab will not unreasonably withhold its approval of the change request.

13.4 Changes related to creation of documents such as specifications fornon-critical Raw Materials or compendial methods do not require Extab approval. Copies of such changes will be provided to Extab.

13.5 Reworking shalI be performed according to Extab approved procedures and reported to Extab. Reasons for reprocessing have to be investigated, and the results shall be communicated with Extab. Reworking is only possible after approval by Extab.

14. **BATCH RELEASE**

14.1 Sopharma will perform the release of each batch according toin-house Extab approved SOPs.

14.2 Sopharma will provide a copy of executed batch records and supporting release documentation (i.e.in-process and batch test results, Deviation) for Extab review within thirty (30) working days after completion of the associated operation.

14.3 Extab will contact Sopharma with request for corrections, clarifications or other comments and responses shall be forthcoming within ten (10) business days.

14.4 Sopharma will keep on file Batch Release Documentation for five (5) years after the batch isDelivered. The storage date commences after review and approval of Batch Release Documentation. After five (5) years, all documents will be archived by Sopharma. During the storage period, these documents must be accessible for review and inspection by Extab and/or regulatory authorities if requested for each batch of the Active Agent.

15. **SHIPMENT AND RELEASE OF ACTIVE AGENT**

15.1 Sopharma will perform alI release testing of the Active Agent according to Extab approvedin-house SOPs and the Active Agent's Specifications.

15.2 Sopharma is responsible for releasing the Active Agent to Extab.

15.3 Sopharma will not ship any intermediate or Active Agent for further processing until authorized by Extab. [Extab will provide specific instructions on how to package and ship the material from Sopharma to destinations specified by Extab].

15.4 Sopharma will use Extab approved shipping vendors for the shipment of intermediates and Finished Product.

16. **RELEASE DOCUMENTATION FOR ACTIVE AGENT**

16.1 Sopharma will provide to Extab a copy of Certificate of Analysis for the respective Active Agent.

16.2 The following documentation is required for each Delivery:-

16.2.1 Certificate of Analysis;

16.2.2 Certificate of Compliance;

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16.2.3 Certificate of Conformance; and

16.2.4 copies of investigation reports regarding quality incidents (Deviations, OOS results, or similar), as applicable.

16.3 The Certificate of Analysis in Clause 16.2.1 shall:-

16.3.1 be dated and signed by a responsible person of Sopharma's Quality Unit:

16.3.2 state that the batch is suitable for release;

16.3.3 include:-

(a) Sopharma's name, address, and telephone number (of the manufacturing site);

(b) Active Agent name;

(c) Sopharma batch number;

(d) reference to the Active Agent's Specification;

(e) test parameters and corresponding specification requirements;

(f) test results (numerical, where applicable) for each chemical or physical test performed; and

(g) date of manufacture, retest date, and date of release of the Active Agent.

16.4 Upon request, Sopharma will provide to Extab any and all data for assessment of the Active Agent.

17. **ACTIVE AGENT STABILITY AND RETEST DATE**

Extab is responsible for (a) monitoring the stability, and (b) specifying the retest date of the Active Agent.

18. **SUBCONTRACTING**

18.1 Sopharma, upon agreement with Extab, will be entitled to delegate analytical testing to third parties.

18.2 Sopharma is fully responsible for the proper qualification of subcontractors and any and all of their acts and/or omissions relating to this Agreement.

19. **AUDIT**

Subject to the confidentiality provisions in the Supply Agreement, Extab shall have the right to inspect and/or audit the Sopharma facility on reasonable notice as it relates to the development, manufacture, testing and control of the Active Agent. Extab will have access to any and all documentation (including lab books, records, data, hard drives, servers) relating to the Active Agent and may take copies of the same. Extab will schedule a formal quality audit no more than twice per year at times during business hours mutually agreed upon by Extab and Sopharma. Responses to any observations submitted by Extab to Sopharma must be submitted to Extab within thirty (30) days of receipt of such observations.

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20. **ACTIVE AGENT COMPLAINTS**

20.1 Extab will inform Sopharma about any Active Agent complaint which may pertain to the manufacturing process of the Active Agent.

20.2 Sopharma will support Extab's investigation and corrective action it the complaint is within the scope of the manufacturing process conducted at Sopharma.

21. **ACTIVE AGENT RECALLS**

21.1 In the event that Sopharma believes that a recall of the Active Agent maybe necessary or appropriate, Sopharma shall immediately notify Extab. The Parties will make joint decisions on the disposition of Active Agent

21.2 Sopharma will not initiate any notifications to health authorities concerning a (potential) non-conformance without the prior agreement of Extab.

21.3 Extab is responsible for the final decision and the coordination of any recalls or field alert activities relating to the Active Agent.

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SIGNED by	)
a duly authorised officer	) /s/ Extab Corporation
for and on behalf of	)
EXTAB CORPORATION	)
in the presence of:	)
Signature of Witness:	
Name of Witness:	
Address:	
Occupation:	
SIGNED by	)
a duly authorised officer	) /s/ Sopharma AD
for and on behalf of	)
SOPHARMA AD	)
in the presence of:	)
Signature of Witness:	
Name of Witness:	
Address:	
Occupation:	

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Exhibit 10.26

CONSULTING AGREEMENT

THIS CONSULTING AGREEMENT (this "Agreement") is entered into and is effective as of the 17th day of September, 2015 between Ricanto Limited ("Consultant"), residing at Century House, Wargrave Road, Henley-on-Thames, Oxfordshire RG9 2LT and EXTAB PHARMA, INC., a Delaware corporation (the "Company").

WHEREAS, the Company is engaged in the business of developing clinical programs to obtain regulatory approval of the pharmaceutical "Tabex";

WHEREAS, Consultant has knowledge and expertise in connection with certain pharmaceuticals relevant to the production and marketing of Tabex; and

WHEREAS, the parties desire to formalize their relationship and set forth their obligations to the other in connection with such relationship.

NOW THEREFORE, in consideration of the mutual promises contained herein and for other good and valuable consideration, the parties intending legally to be bound agree as follows:

1. Term. This Agreement shall begin on 17th September, 2015 (the "Effective Date") and continue until terminated by either party in accordance with the terms of paragraph 5 below ("the Term").

2. Services. During the Term, Consultant will be available to provide the Company up to 40 hours per week of strategic consulting and marketing services in connection with those matters which the Company designates, including, but not limited to, advice concerning Sopharma, cytisine supply chain, Clinical development, strategic, regulatory and any other matters relating to Tabex and cytisine as requested by the Company (the "Services").

3. Consulting Fee. $41,666 per month paid by the 15th of the following month.

4. Business Expenses. During the Term, Consultant shall bear all expenses incurred in connection with the performance of the Services, except that the Company shall reimburse Consultant for the reasonable travel and entertainment expenses incurred while Consultant is required by the Company to be away from Consultant's principal place of business, subject to Consultant providing documentation of the costs so incurred. Consultant's principal place of business shall be considered to be United Kingdom.

5. Termination.

(a) Consultant may voluntarily terminate his relationship with the Company during the Term upon 30 days' written notice, and, upon such event, the Consultant will not provide services to the Company after the 30-day notice period. Upon Consultant's termination of the relationship with the Company, the Company shall pay the Consulting Fee through the effective date of termination on a pro rata basis.

(b) The Company may terminate the relationship with Consultant during the Term for any reason upon 30 days' written notice, except where such termination is for "cause" as defined below, in which event termination of the relationship shall be immediately effective upon written notice. In the event of a termination without cause, or in the event Consultant gives notice pursuant to section (a) above, Company may, at its election, have Consultant continue or not continue to provide services to the Company through the notice period. For the purposes of this provision, "cause" shall be defined to mean: (i) material breach of any provision of this Agreement, (ii) gross negligence of, or willful dishonesty by, Consultant towards, or fraud upon or deliberate injury to, the Company, (iii) the Consultant's being disqualified from or unable to perform its duties hereunder, or (iv) the Consultant's willful refusal to perform its duties.

6. Prior Agreements. Consultant has provided to the Company copies of anynon- compete, confidentiality, non-solicitation, or non-hire contracts or provisions currently applicable to Consultant. Consultant represents that he is legally free to accept this engagement and to perform the services required hereunder.

7. Publicity. Any disclosure or public statements regarding the contents or nature of this agreement shall be coordinated between the parties.

8. Independent Contractor – Taxes; Employees of Consultant. Nothing herein shall be construed as creating any partnership, joint venture or agency relationship between the parties hereto. For the purposes of this Agreement, Consultant and the Company shall each be, and remain at all times, independent contractors. The Company shall not be responsible for income tax withholding, social security taxes, unemployment insurance, disability or workers' compensation insurance contributions for Consultant; rather, Consultant shall be solely responsible for determining the amounts of and making all such payments.

9. Confidential Information. Each party acknowledges that information provided by either party in connection with this Agreement may contain confidential and proprietary data, and disclosure of such information may be damaging to the disclosing party. The term "Confidential Information", means any and all technical and business information disclosed in any manner or form including, but not limited to financial plans and records, litigation data, marketing plans, business strategies, trade secrets, present and proposed products, computer software programs, source code, relationships with third parties, customer lists, information regarding clients and suppliers and Privileged Information. Privileged Information shall mean written or oral information created or possessed by Company or Company's clients or its representatives that would be subject to a claim of privilege (*e.g.* attorney-client, work product, *etc*.) before a court or other tribunal.

10. Non-Disclosure. (a) Consultant will not disclose Company's Confidential Information to anyone and Company will not disclose Consultant's confidential information to anyone other than those within the Company who have a need to have access to such Confidential Information under this Agreement. Neither party may use any of the Confidential Information of the other party for any other purpose than to perform a party's obligations under the Agreement. Each party will use the same degree of care to protect Confidential Information of the other party as it uses to protect its own Confidential Information of like importance, but no less than a reasonable degree of care. No license to either party's Confidential Information is either granted or implied by the disclosure of Confidential Information. The duties and obligations to protect Confidential Information will survive termination of this Agreement for any reason.

(b) Exceptions. The receiving party will not have any obligation with respect to any Confidential Information of the disclosing party which the receiving party can establish: (i) is or becomes publicly available through no wrongful act of the receiving party; (ii) was lawfully obtained by the receiving party from a third party without any obligation to maintain the Confidential Information as proprietary or confidential; (iii) was previously known to the receiving party without any obligation to keep it confidential; (iv) was independently developed by the receiving party; (v) is required to be disclosed pursuant to the law, court order, or duly authorized subpoena, provided that the recipient promptly notifies the other party prior to disclosure, and provided further that the recipient makes diligent efforts to limit such disclosure to that which is reasonably required; or (vi) is required to be disclosed pursuant to a regulatory agency or for audit purposes, provided that the recipient is notified of the confidential nature of the Information.

11. Non-Solicitation. (a) During the term of this Agreement and for a period of one (1) year thereafter, Consultant promises and agrees that he will not without the prior written approval of Company (i) employ or hire, or engage as a consultant or subcontractor, any employee or subcontractor of Company or its affiliates, (ii) solicit any employee or subcontractor of Company or of its affiliates to become an employee or subcontractor of any other party, or (iii) recommend or suggest to any other person or entity that such person or entity so solicit, employ, hire, or engage any such employee or subcontractor.

(b) During the term of this Agreement, Consultant agrees that he will not provide similar consulting services to any competitor of the Company without first obtaining written agreement to do so from the Company. During the term hereof and for a period of one (1) year from the termination of this Agreement, the Consultant shall not directly or indirectly interfere with, disrupt, or attempt to interfere with or disrupt, the Company's relationships, contractual or otherwise, with its customers, or engage in the solicitation or inducement of customers of the Company to breach, modify, or terminate any agreement(s) or relationship(s) they may have with the Company.

(c) Upon termination of this Agreement, Consultant shall promptly return any originals and copies of any and all documents, whether in hard or soft format, and any other property, belonging to the Company.

12. Injunctive Relief. The Consultant recognizes and acknowledges that the Confidential Information andNon-Solicitation obligations have competitive value and that irreparable damage might result to the Company if Confidential Information is improperly disclosed by the receiving party to any non-authorized third party, or if the Non-Solicitation provision is violated. The parties agree that legal proceedings at law or in equity, including injunctive relief, may be appropriate in the event of a breach of paragraphs 10 or 11.

13. Assignment of Rights to Company. The Company shall be the sole and exclusive owner of all of the results and proceeds of Consultant's services, work and labor during the Term, including, without limitation, all property of a proprietary nature which Consultant may

develop, create, write or otherwise produce during the Term, which shall be deemed to be works- made-for-hire for the Company within the meaning of the copyright laws of the United States and the Company shall be deemed to be the sole author thereof in all territories and for all purposes. The Consultant agrees to and does assign to the Company all of the Consultant's rights and interests in any confidential/proprietary information which the Consultant may, during the Term, conceive, develop, or produce in connection with the performance of the services hereunder. The Consultant shall, at the request of the Company, execute such assignments, certificates, or other instruments as the Company may from time to time deem necessary or desirable to evidence, establish, maintain, perfect, enforce, or defend its right to or its title and interest in or to any such properties. The terms of this paragraph shall continue after the termination of this Agreement.

14. Disputes/Arbitration. In the event any disputes or controversies arise between the parties, the aggrieved party shall advise the other party of the dispute in writing within ten (10) business days. Within ten (10) business days after written notice is received, an authorized representative for each party shall meet and attempt to resolve the dispute. Any agreement reached relating to the dispute shall be committed to writing and signed by both authorized representatives. Disputes arising hereunder which cannot be resolved between the parties shall be submitted to binding arbitration by a single arbitrator appointed in accordance with, the then current commercial arbitration rules of the American Arbitration Association. Any such arbitration shall be conducted in Newark, Delaware unless otherwise agreed by the parties. The parties shall share equally the costs and expenses of any such arbitration. Judgment upon the award rendered by the arbitrator may be entered in any court having competent jurisdiction.

15. Limitation of Authority. Consultant shall have no authority to bind the Company by or to any obligation, agreement, promise or representation without first obtaining the Company's prior written approval.

16. (a) Consultant represents and warrants that all work Consultant performs pursuant to this Agreement will be performed with a professional level of skill and will conform to the instructions and specifications set forth herein or as orally directed by the Company.

(b) Consultant hereby indemnifies and agrees to hold the Company (and its officers, directors, employees and agents), harmless from and against any loss, liability, damage, cost or expense (including, without limitation, reasonable attorneys' fees and expenses) suffered or incurred by any of them and arising out of (i) Consultant's gross negligence or willful misconduct; (ii) Consultant's infringement or violation of the proprietary or intellectual property rights of any third party; or (iii) Consultant's breach of any of the terms of this Agreement. The Company hereby indemnifies and agrees to hold the Consultant harmless from and against any loss, liability, damage, cost or expense (including, without limitation, reasonable attorneys' fees and expenses) suffered or incurred by Consultant arising as of (i) the Company's gross negligence or willful misconduct; (ii) the Company's infringement or violation of the proprietary or intellectual property rights of a third party; or (iii) the Company's breach of any of the terms of this Agreement.

17. Miscellaneous. This Agreement shall be governed by and construed under the laws of the State of Delaware, without regard to itsconflict-of-laws rules. The waiver by either the Company or Consultant of a breach of any provision of this Agreement shall not operate or be construed as a waiver or any subsequent breach by the Company or Consultant. This Agreement shall be binding upon and shall inure to the benefit of both the Company and Consultant and their respective successors, heirs and legal representatives; provided, Consultant shall not assign any rights or obligations under this Agreement without the consent in writing of the Company. No amendments or variations of the terms and conditions of this Agreement shall be valid unless the same is in writing and signed by both of the parties hereto. If any provision of this Agreement is declared by any court of competent jurisdiction to be invalid for any reason, such invalidity shall not affect the remaining provisions of this Agreement. Such remaining provisions shall be fully severable, and this Agreement shall be construed and enforced as if such invalid provisions had never been a part of this Agreement. This Agreement contains the entire agreement between the parties, with respect to the subject matter hereof, and supersedes any and all prior agreements, and understandings written or oral, between the Company and Consultant.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

Ricanto Limited

/s/ Richard Stewart
By: Richard Stewart

EXTAB PHARMA, INC.

/s/ Extab Pharma

Exhibit 10.27

***** Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

DATED July 13, 2016

(1) UNIVERSITY OF BRISTOL

(2) ACHIEVE LIFE SCIENCE INC.

LICENCE OF TECHNOLOGY

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THIS AGREEMENT is made on 2016 (the "**Effective Date** ")

BETWEEN:

(1) **THE UNIVERSITY OF BRISTOL**, Senate House, Tyndall Avenue, Bristol, BS8 1TH, England (the "**Licensor**"); and

(2) **ACHIEVE LIFE SCIENCE INC.**, a company incorporated in the State of Delaware whose principal place of business is at Corporation Trust Centre, 1209 Orange Street, Wilmington, Delaware 19801, USA (the "**Licensee**").

BACKGROUND:

The Licensor wishes to license the Licensed Technology, and the Licensee wishes to acquire a licence to the Licensed Technology, on the terms of this agreement.

AGREEMENT:

1. **INTERPRETATION**

In this agreement (including its Schedules), any reference to a "clause" or "Schedule" is a reference to a clause of this agreement or a schedule to this agreement, as the case may be. Words and expressions used in this agreement have the meaning set out in Schedule 1.

2. **GRANT OF LICENCE**

2.1 In consideration of the payments required to be made under this agreement by the Licensee, the Licensor grants to the Licensee an exclusive licence in the Territory in the Field in respect of the Licensed Intellectual Property Rights to research, develop, make, have made, use and have used and Market Licensed Products on and subject to the terms and conditions of this agreement.

2.2 In consideration of the payments required to be made under this agreement by the Licensee, the Licensor grants to the Licensee a non-exclusive licence in the Territory in the Field in respect of the Licensed Know-How to research, develop, make, have made, use and have used and Market Licensed Products on and subject to the terms and conditions of this agreement.

2.3 The Licensor retains all rights to use and license Licensed Technology outside the Field.

2.4 As soon as is reasonably possible after the Effective Date, and in any event no later than thirty (30) days after the Effective Date, the Licensor will, at the Licensor's cost, supply the Licensee with the Documents solely as they relate to Licensed Technology within the Field.

2.5 In consideration for the supply by the Licensee to the Licensor on or around the Effective Date of one hundred (100) grams of cytisine the Licensor hereby grants the Licensee an exclusive option to negotiate an exclusive licence in the Option Field; such Option to terminate on […***…] or on the conclusion of a licence to the Licensed Technology in the Option Field, whichever shall be the earlier.

3. **SUB-LICENSING**

3.1 The Licensee may grant sub-licences to the licences in clause 2.1 and clause 2.2. provided that:

3.1.1 the Sub-licensee has obligations to the Licensee commensurate with those which the Licensee has to the Licensor under this agreement, except where it is not legally possible to include such obligations in the sub-licence; and

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3.1.2 the Sub-licensee is a company who is not, or whose affiliates are not, in the gambling, pornography, tobacco, arms dealing or drug trafficking industries; and

3.1.3 immediately following the grant of each sub-licence, the Licensee provides a certified copy of that sub-licence (redacted to remove the financial terms) to the Licensor.

4. **IMPROVEMENTS**

4.1 The Licensed Intellectual Property Rights covered by the Licence in clause 2 includes the Licensor's Improvements where the Licensor is legally able to include them. The Licensor will communicate in writing to the Licensee within a reasonable time after becoming aware of all Licensor's Improvements.

4.2 The Licensee acknowledges and agrees that all Intellectual Property Rights in the Licensor's Improvements belong to the Licensor subject to the Licence.

4.3 The Licensee will communicate in writing to the Licensor within a reasonable time all Licensee's Improvements.

4.4 The Licensor acknowledges and agrees that all Intellectual Property Rights in the Licensee's Improvements belong to the Licensee.

5. **RIGHTS RE NON-COMMERCIAL USE**

5.1 The Licensor retains the right to use the Licensed Technology forNon-Commercial Use only in the Field. For clarity the Licensor's right to publish the Licensed Technology or any part of it shall be subject to clause 8 below.

6. **FILING AND MAINTENANCE**

6.1 The Licensee will, in consultation with the Licensor and at the Licensee's cost, file, prosecute, use all reasonable endeavours to maintain, and renew the Applications throughout the duration of this agreement provided that the Licensee shall obtain the Licensor's prior written consent prior to amending the breadth of claims within or geographical coverage of an Application.

6.2 Before permitting any Application to lapse, the Licensee shall provide to the Licensor no less than two (2) months notice of its intention to do so and permit the Licensor, should it so desire, to take over the prosecution or maintenance of that Application. If the Licensee provides the Licensor with less than the two (2) months notice, the Licensee shall be required to renew the relevant Application or otherwise ensure that it does not lapse or is restored.

7. **INFRINGEMENT**

7.1 Each party will notify the other in writing of any misappropriation or infringement of any rights in the Licensed Technology of which the party becomes aware.

7.2 The Licensee has the first right (but is not obliged) to take legal action at its own cost against any misappropriation or infringement of any rights included in the Licensed Technology in the Field.

7.3 If the Licensee takes legal action under clause 7.2, the Licensee will:

7.3.1 indemnify and hold the Licensor harmless against all costs (including reasonable lawyers' and patent agents' fees and reasonable out of pocket expenses), claims, demands and liabilities arising out of such activities, including any counterclaims, third party actions and revocation actions in any fora; and

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7.3.2 treat any award of profits or damages (including, without limitation, punitive damages) as Net Sales for the purposes of clause 10, having first for these purposes deducted from the award an amount equal to any legal costs incurred by the Licensee in the action that are not covered by an award of legal costs; and

7.3.3 keep the Licensor regularly informed of the progress of the legal action, including, without limitation, any claims affecting the scope of the Licensed Technology.

7.4 If the Licensee has notified the Licensor in writing that it does not intend to take any action in relation to the misappropriation or infringement, or the Licensee has not taken any such action within sixty (60) days of the notification under clause 7.1, the Licensor may take such legal action at its own cost provided it shall not settle any action without first consulting with the Licensee and taking account of the reasonable observations and requests of the Licensee.

8. **PUBLICATION**

8.1 If the Licensor desires to make any publication or any part of it (including any presentation to members of the public) relating to the Licensed Technology, the Licensor shall first submit the publication for review by the Licensee.

8.2 The period for review of a proposed publication referred to in clause 8.1 above, shall be thirty (30) days.

8.3 At the request of the Licensee the Licensor shall delay the publication for a period of up to three (3) months from the date of first submission to the Licensee in order to enable the Licensee to take steps to protect its proprietary information and/or Intellectual Property Rights and know how, and the Licensor shall delay publication for such three (3) month period. For the avoidance of doubt, if the Licensor has not been requested by the Licensee to delay publication within thirty (30) days of Licensee's receipt of the proposed publication then Licensor may publish the proposed publication with no delay.

9. **CONFIDENTIALITY**

9.1 Subject to clauses 9.2 and 9.3, (a) each party shall keep confidential the Confidential Information that does not pertain to the Licensed Technology disclosed to it by the other party and not use such other than for the purposes of this agreement; and (b) each party (being a receiving or disclosing party as the case may be) will keep confidential the Confidential Information pertaining to the Licensed Technology and will not disclose or supply the Confidential Information to any third party or use it for any purpose, except in accordance with the rights granted hereunder and the terms and objectives of this agreement. For clarity, nothing in this clause 9 shall act to hinder or prevent the Licensee from enjoying the full benefit of the rights granted to it under this agreement and, without limiting the generality of the foregoing, to undertake any and all activities contemplated in the Licence granted to it.

9.2 The Licensor shall not disclose any information relating to the Licensed Technology to any person apart from the Licensee or any of its Sub-licensees and its Affiliates. For clarity, nothing in this clause 9 shall act to hinder or prevent Licensor from publishing information relating to the Licensed Technology in accordance with Clause 8.

9.3 The Licensee may disclose to Sub-licensees of the Licensed Technology such of the Confidential Information pertaining to the Licensed Technology which it considers is necessary for the exercise of any rights sub-licensed, provided that the Licensee shall ensure that such Sub-licensees accept a continuing obligation of confidentiality on the same terms as this clause, before the Licensee makes any disclosure of the Confidential Information pertaining to the Licensed Technology. The Licensee may also disclose the Licensed Technology to the extent

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reasonably required in connection with the conduct of its business including to potential investors, other business associates, professional advisors provided that such persons have agreed in writing to be bound by non-use and non-disclosure obligations that are no less strict than those set forth in this agreement or are subject to professional codes of conduct that prevent disclosure of client confidential information and the Licensee will take action in respect of any breach of such obligations.

9.4 Clause 9.1 will not apply to any Confidential Information which:

9.4.1 is known to the receiving party before disclosure, and not subject to any obligation of confidentiality owed to the disclosing party; or

9.4.2 is or becomes publicly known without the fault of the receiving party; or

9.4.3 is obtained by the receiving party from a third party in circumstances where the receiving party has no reason to believe that it is subject to an obligation of confidentiality owed to the disclosing party; or

9.4.4 the receiving party can establish by reasonable proof was substantially and independently developed by officers or employees of the receiving party who had no knowledge of the disclosing party's Confidential Information; or

9.4.5 the Parties mutually agree in writing may be disclosed; or

9.4.6 the Licensee needs to disclose in the ordinary course of its business to potential partners, investors, bankers and professional advisers provided that the Licensee shall ensure that such disclosees have a continuing obligation of confidentiality either through codes of professional conduct which prohibit disclosure of client confidential information or under terms commensurate with those set forth in this clause.

9.4.7 the receiving party is required to disclose by law including for clarity the rules of the London Stock Exchange or any other relevant stock exchange.

10. **ROYALTIES & MILESTONES**

10.1 The Licensee will pay to the Licensor:

10.1.1 An initial licence fee: the sum of […***…] US dollars ($[…***…]) on the earlier to occur of […***…] or […***…];

10.1.2 […***…] US dollars ($[…***…]) on […***…];

10.1.3 […***…] US dollars ($[…***…]) on […***…];

10.1.4 […***…] US dollars ($[…***…]) on […***…];

10.1.5 […***…] US dollars ($[…***…]) on […***…];

10.1.6 A royalty equal to the Applicable Patent Royalty Rate, on a country by country basis, on all Net Sales of Licensed Products in the Territory provided there is, in the relevant country, at least one (1) Valid Patent Claim covering the composition of matter for or method of production of any active pharmaceutical ingredient used in a Licensed Product;

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10.1.7 A royalty equal to the Applicable Sub-Licensing Royalty Rate, on a country by country basis, on any royalties or sublicensing fees that the Licensee receives from Sub-licensees for sublicensing the Licensed Technology in the Territory provided there is, in the relevant country, at least one (1) Valid Patent Claim covering the composition of matter for or method of production of any active pharmaceutical ingredient used in a Licensed Product. For the purposes of this clause 10.1(g), "royalties and sublicensing fees" shall exclude (i) any milestones payable by the Licensee pursuant to clause 10.1(a) to 10.1(e) and (ii) any sums that are received to fund research and/or development;

10.1.8 Where a Licensed Product is not or ceases to be covered by at least one (1) Valid Patent Claim covering the composition of matter for or method of production of any active pharmaceutical ingredient used in a Licensed Product in any country, the royalty payments under clause 10.1 shall not be, or shall cease to be, (as the case may be) payable in respect of sales of that Licenced Product in that country and, instead, the Licensee shall pay royalties at the Applicable Know-how Royalty Rate or at the Applicable Sub-Licensing Know-How Royalty Rate, as applicable, on all sales of that Licensed Product in that country or royalties or sublicensing fees received for the remainder of the time period ending twenty (20) years from the Effective Date.

10.2 The Licensee will make all payments in pounds sterling or any currency replacing pounds sterling in its entirety.

10.3 For the purposes of calculating any amount payable by the Licensee to the Licensor in a currency other than pounds sterling (or replacement currency), the Licensee shall apply an exchange rate equivalent to the average of the applicable closing mid rates quoted by the Financial Times as published in London on the first Business Day of each month during the quarter just closed.

10.4 Where the Licensee has to withhold tax by law, the Licensee will deduct the tax, pay it to the relevant taxing authority, and supply the Licensor with a Certificate of Tax Deduction at the time of payment to the Licensor.

10.5 In the event that full payment of any amount due from the Licensee to the Licensor under this agreement is not made by any of the dates stipulated, the Licensee shall be liable to pay interest on the amount unpaid at the rate of […***…] per cent ([…***…]%) over the base rate for the time being of the Bank of England from the date when payment was due until the date of actual payment.

10.6 The Applicable Patent Royalty Rate and Applicable Know-how Royalty Rate for any and all applications shall not be subject to any form of reduction should the Licensee combine the Licensed Product with any third party products or technologies.

10.7 The Applicable Patent Royalty Rate and Applicable Know-how Royalty Rate for any and all Applications shall not be subject to any form of reduction should the Licensee need to pay for the right to use intellectual property owned by third parties in order to sell Licensed Products.

11. COMMERCIALLY REASONABLE ENDEAVOURS

11.1 The Licensee will use Commercially Reasonable Endeavours to develop, exploit and Market a Licensed Product in the Major Markets.

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12. **ROYALTY REPORTS AND AUDIT**

12.1 The Licensee will provide the Licensor with a report every six (6) months detailing the activities and achievements in its development of the Licensed Technology in order to facilitate its commercial exploitation, and in the development of potential Licensed Products.

12.2 For the three (3) years following the Effective Date, the Parties will meet every 6 months to discuss the report provided under clause 12.1 above and determine future plans where collaboration would be beneficial to progress the Licenced Technology. Licensor shall be represented for this purpose by Prof Tim Gallagher and Sue Sundstrom or such other staff members as shall be notified to Licensee from time to time and Licensee shall be represented by its Chief Executive Officer (CEO) and Chief Scientific Officer (CSO) or such other staff members as shall be notified to Licensor from time to time.

12.3 The Licensee will provide the Licensor with a royalty report within thirty (30) days after the close of each six (6) month period of the Licence Year for each Licensed Product Marketed by the Licensee and its Sub-licensees. Each royalty report will:

12.3.1 set out the Net Sales of each Licensed Product Marketed by the Licensee;

12.3.2 set out the quantity of Licensed Products Marketed by the Sub-Licensee to which the Applicable Sub-Licensing Royalty Rate or Applicable Sub-Licensing Know-how Royalty Rate applies;

12.3.3 provide a calculation of the royalties and payments declared pursuant to sub-clause (a) and (b); and

12.3.4 set out details of any deductions made under clause 10.4.

12.4 The Licensee will pay the Licensor the royalties due in respect of the 6 month period of the Licence Year just closed at the same time as the Licensee delivers the royalty report without making any deduction, withholding or set-off save as expressly permitted under this agreement.

12.5 The Licensee will keep complete and accurate accounts of all Licensed Products used and Marketed by the Licensee andSub-licensees in each Licence Year for at least six (6) years. The Licensor may, through an independent certified accountant, audit all such accounts on at least thirty (30) days' written notice no more than once each Licence Year for the purpose of determining the accuracy of the royalty reports and payments. If on any such audit a shortfall in payments of greater than five percent (5%) is discovered in respect of the audit period, the Licensee shall pay the Licensor's audit costs in addition to any shortfall due.

13. **DURATION AND TERMINATION**

13.1 This agreement will take effect on the Effective Date. Subject to the possibility of earlier termination under the following provisions of this clause 13, and subject to the possibility of an extension to the term by mutual agreement, this agreement shall continue in force for the longer of twenty (20) years from the Effective Date or the last to expire of the Valid Patent Claims anywhere in the world. Upon expiry of this agreement at the end of its term, but not earlier termination, the Licensee shall be granted a non-exclusive royalty-free and fully paid-up perpetual and irrevocable licence to use and exploit the LicensedKnow-how at the Licensee's sole risk and to the maximum extent permitted by law without any warranties or representations by the Licensor.

13.2 If either party commits a material breach of this agreement, and the material breach is not remediable or (being remediable) is not remedied within the period allowed by notice given by the other party in writing calling on the party in material breach to effect such remedy (such period being not less than thirty (30) days), the other party may terminate this agreement by written notice having immediate effect. For clarity, a failure on the part of the Licensee to comply with its obligations under Clause 12 shall be considered a breach capable of remedy.

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13.3 The Licensee may terminate this agreement for any reason at any time after the second anniversary of this agreement on six (6) months' written notice. Any such termination shall not absolve the Licensee of its obligation to accrue and pay royalties and other payments under the provisions of clause 10 in respect of the period prior to termination.

13.4 Any dispute between the Parties as to whether or not the Licensee is using Commercially Reasonable Endeavours in relation to a Licensed Product in the Major Markets shall be referred for determination by arbitration pursuant to the arbitration rules of CEDR. The arbitration shall be in London by a single arbitrator who shall act as an expert.

13.5 The Licensor may terminate this agreement:

13.5.1 immediately, if the Licensee has a petition presented for itswinding-up, or passes a resolution for voluntary winding-up otherwise than for the purposes of a bona fide amalgamation or reconstruction, or compounds with its creditors, or has a receiver or administrative receiver appointed over all or any part of its assets, or enters into any arrangements with creditors, or takes or suffers any similar action in consequence of debts; or

13.5.2 on thirty (30) days' written notice if the Licensee opposes or challenges the validity of the Applications.

13.6 On early termination of this agreement, for whatever reason:

13.6.1 clause 13.9 shall apply in respect of any sub-licences granted pursuant to clause 3 of this agreement; and

13.6.2 the Licensee shall pay to the Licensor all outstanding royalties and other sums due under this agreement (except where the Licensee terminates pursuant to clause 13.2); and

13.6.3 the Licensee shall provide the Licensor with details of the stocks of Licensed Products held at the point of termination; and

13.6.4 the Licensee must cease to use or exploit the Licensed Technology, provided that this restriction does not apply to LicensedKnow-How which has entered the public domain through no fault of the Licensee or Sub-licensee, and that the Licensee may continue to use the Licensed Technology in order to meet any specific existing binding commitments already made by the Licensee at the date of termination and requiring delivery of Licensed Products within the next six (6) months (except where Licensor terminates pursuant to Clause 13.2); and

13.6.5 the Licensee must, at the option of the Licensor and at the Licensee's cost, destroy all other Licensed Products or send all other Licensed Products to a location nominated by the Licensor to the Licensee in writing.

13.7 Termination of this agreement, whether for breach of this agreement or otherwise, shall not absolve the Licensee of its obligation to accrue and pay royalties under the provisions of clause 10 for the duration of any notice period and in respect of any dealings in Licensed Products permitted by clause 13.6.

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13.8 Clauses 1, 4, 9, 13, 15 and Schedules 1, 2 and 3 will survive the termination or expiration of this agreement, for whatever reason, indefinitely.

13.9 On termination of this agreement:

13.9.1 where the Licensee has terminated under clauses 13.2 or 13.3 or the Licensor has terminated under clause 13.5(b), the Licensee must bring all sub-licences to an end on the same date;

13.9.2 where the Licensor has terminated this agreement under clause 13.2 or 13.5, any sub-licences granted will continue to remain in force as a direct licence from the Licensor provided that the relevant Sub-licensee has entered into a letter of covenant with the Licensor in the form detailed in Schedule 3;

13.9.3 subject to any relevant Sub-licensee entering into a letter of covenant with the Licensor under clause 13.9.2 above, this agreement shall survive but only to the extent reasonably required and solely for the purpose of ensuring that the relevant sub-licences granted by the Licensee shall remain in force in accordance with clause 13.9.2;

13.9.4 subject to clause 13.9.5 below, the Licensee shall continue to comply with its obligations under clause 10;

13.9.5 where the Licensor has terminated this agreement pursuant to clause 13.5(a) or due to the Licensee's breach of its payment obligations under Clause 10: (a) the Sub-licensee shall pay all sums due and payable under the applicable sub-licence to the Licensor and (b) the Licensor shall be entitled to retain such sums as if Clause 10 applied with the necessary modifications and, provided no sums remain outstanding under clause 10, the Licensor shall pay the balance of such sums to the Licensee.

14. LIABILITY

14.1 The Licensor warrants and represents to the Licensee that, as at the Effective Date: (a) it has the full power, authority and consent to enter into this agreement; (b) to the current knowledge of the Research Commercialisation team, having made enquiry only of the Inventor, it has not granted to any third party any right, option or licence to the Intellectual Property Rights pertaining to the Inventions and (c) it is not in receipt of any written claim that the Licensed Technology infringes the intellectual property rights of any third party.

14.2 To the fullest extent permissible by law, and save as expressly set forth above, the Licensor does not make any warranties of any kind including, without limitation, warranties with respect to:

14.2.1 the quality of the Licensed Technology;

14.2.2 the suitability of the Licensed Technology for any particular use;

14.2.3 whether use of the Licensed Technology will infringe third-party rights; or

14.2.4 whether any Applications will be granted or the validity of any patent that issues in response to the Applications.

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14.3 The Licensee agrees to indemnify the Licensor and hold the Licensor harmless from and against any and all claims, damages and liabilities:

14.3.1 asserted by third parties (including claims for negligence) which arise directly or indirectly from the use of the Licensed Technology or the Marketing of Licensed Products by the Licensee and/or its Sub-licensees; and/or

14.3.2 arising directly or indirectly from any breach by the Licensee of this agreement.

14.4 Save in respect of any liability under clause 14.5, the liability of either party for any breach of this agreement, or arising in any other way out of the subject-matter of this agreement, will not extend to incidental or consequential damages or to any loss of profits.

14.5 Nothing in this agreement shall limit or exclude any liability for fraud, wilful misconduct, reckless conduct or fraudulent misrepresentation.

14.6 Notwithstanding any other clause in this agreement, the Licensor shall not be entitled to profit from any grant of any licence to any third party that breaches the exclusive rights granted to the Licensee under clause 2.1 and shall, in the event of such a breach pay to the Licensee, as soon as possible and in any event no later than three (3) weeks after receipt, a sum equal to all consideration paid to the Licensor as part of any agreement, arrangement or understanding entered into in breach of the exclusive rights granted to the Licensee under clause 2.1 and whether or not such consideration is in the form of cash payments. For clarity (i) this clause entitles the Licensee, without prejudice to any other remedies available to it, to demand and be paid in cash the value of any non-cash consideration received by the Licensor under any agreement, arrangement or understanding entered into in breach of the exclusive rights granted to the Licensee under clause 2.1 and (ii) the obligation under this clause is on-going and continues to apply to all consideration payable under any agreement, arrangement or understanding entered into in breach of the exclusive rights granted to the Licensee under clause 2.1.

15. **GENERAL**

15.1 **Taxes** - Where the Licensee has to make a payment to the Licensor under this agreement which attracts value-added, sales, use, excise or other similar taxes or duties, the Licensee will be responsible for paying those taxes and duties.

15.2 **Announcements** - Neither Party shall make any press or other public announcement concerning any aspect of this Agreement, or make any use of the name of the other Party in connection with or in consequence of this Agreement, without the prior written consent of the other Party.

15.3 **Force Majeure** - If performance by either party of any of its obligations under this agreement (not including an obligation to make payment) is prevented by circumstances beyond its reasonable control, that party will be excused from performance of that obligation for the duration of the relevant event.

15.4 **Assignment** - The Licensee may not assign any of its rights or obligations under this agreement in whole or in part, except in whole to an Affiliate (and only for so long as it remains an Affiliate) or to a bona fide purchaser of the whole or substantially the whole of the business of the Licensee, without the prior written consent of the Licensor such consent not to be unreasonably withheld, delayed or conditioned. Assignment, for these purposes, includes the acquisition of Control of the Licensee by a third party. If the Licensor assigns its rights in the Licensed Technology to any person it shall do so expressly subject to the Licensee's rights under this Agreement. Control of the Licensee may not be acquired by any third party that is likely, in the Licensor's reasonable opinion, to have any detrimental impact on the reputation of the Licensor. For clarity, but without limiting the generality of the foregoing, if Control of the Licensee is acquired by a company who is, or whose Affiliates are, in the gambling, pornography, tobacco, arms dealing or drug trafficking industries the Licensor may terminate this agreement.

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15.5 **Severability** - If any of the provisions of this agreement is or becomes invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions will not in any way be affected or impaired. The parties will, however, negotiate to agree the terms of a mutually satisfactory provision, achieving as nearly as possible the same commercial effect, to be substituted for the provision found to be void or unenforceable.

15.6 **No Partnership etc** - Nothing in this agreement creates, implies or evidences any partnership or joint venture between the Licensor and the Licensee or the relationship between them of principal and agent.

15.7 **Entire Agreement** - This agreement constitutes the entire agreement between the parties in relation to the Licence and the Licensee has not relied on any other statements or representations in agreeing to enter this contract. Specifically, but without limitation, this agreement does not impose or imply any obligation on the Licensor to conduct development work. Any arrangements for such work must be the subject of a separate agreement between the Licensor and the Licensee.

15.8 **Variation** - Any variation of this agreement must be in writing and signed by authorised signatories for both parties.

15.9 **Rights Of Third Parties** - The parties to this agreement intend that by virtue of the Contracts (Rights of Third Parties) Act 1999 no Party not specifically mentioned in this Agreement will be able to enforce the terms of this agreement intended by the parties to be for their benefit.

15.10 **Governing Law** - This agreement is governed by English Law, and, save as provided in Clause 13.4 the parties irrevocably submit to the exclusive jurisdiction of the English Courts for the resolution of any dispute which may arise out of or in connection with this agreement.

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SCHEDULE 1

DEFINITIONS

Academic and Research Purposes means research (however funded), teaching or other scholarly use which is undertaken for the purposes of education or research.

Affiliate means any company or legal entity in any country Controlling or Controlled by the Licensee.

Applicable Know-how Royalty Rate means […***…]%.

Applicable Patent Royalty Rate means […***…]%.

Applicable Sub-Licensing Royalty Rate means […***…]%.

Applicable Sub-Licensing Know-how Royalty Rate means […***…]%%.

Applications means:

1. any patent applications filed by either Party claiming any of the Inventions;
2. any patents granted in response to the applications;
3. any corresponding foreign patents and applications which may be granted to the Licensor in the Territory based on and deriving priority from the applications; and
4. any addition, continuation, continuation-in-part, division, reissue, renewal or extension based on the applications.

Business Day means a day, other than a Saturday or Sunday, on which clearing banks are permitted to open in London.

Confidential Information means in relation to each party any materials, trade secrets or other information disclosed by that party to the other, including, without limitation:

5. the Licensed Technology, to the extent that it is not disclosed by the Applications when published; and
6. the Inventions to the extent that it is not disclosed by the Applications when published;
7. this agreement.

Commercially Reasonable Endeavours means, with respect to the efforts to be expended by Licensee hereunder, efforts and resources comparable to those used by a biotechnology company of comparable value, business model and resources; in respect of a product proprietary to that company, which product is of similar market potential (taking into account the relevant patent and proprietary position) at a similar stage in its development or product life to any Licensed Product, utilizing sound and reasonable scientific, business, (where relevant) pre-clinical and clinical practice and judgment in order to develop and commercialise such product in a timely manner. Commercially Reasonable Endeavours recognizes and accounts for a staggered approach to multiple potential candidates (meaning focus is placed on a lead candidate and a small number of back up candidates rather than equally across all potential candidates), the uncertainties of drug development, and is evaluated in the context of Territory-wide efforts, recognizing that some development and commercialization activities may or may not be required by this standard for countries other than, for example, the EU and that a reasonable development and commercialization program may stage or stagger activities for different countries over time. Commercially Reasonable Endeavours does not take account of other products marketed by the Licensee but which are not a Licenced Product.

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Control, Controlling and **Controlled** mean:

8. ownership of more than fifty percent (50%) of the voting share capital of the relevant entity; or

9. the ability to direct the casting of more than fifty percent (50%) of the votes exercisable at a general meeting of the relevant entity on all, or substantially all, matters.

Documents has the meaning given in Schedule 2.

Field means as associated with smoking cessation, all human medicinal uses including prophylaxis, treatment, cure or alleviation of symptoms.

Improvement means any development of (a) the Inventions or (b) the Licensed Technology which would, if commercially practised, infringe and/or be covered by a claim subsisting or being prosecuted in the Applications. For clarity, for the purposes of Licensor's Improvements (as defined below), Improvement shall mean any development, conducted solely by the Inventor or the Inventor's group (or a subset of them) and shall not mean any other Improvement conducted by the Licensor.

Intellectual Property Rights means patents or patent applications, trade marks, copyrights, database rights, rights in designs, and all or any other intellectual or industrial property rights, whether or not registered or capable of registration.

Inventions means the inventions described in Schedule 2.

Inventor means the inventor or inventors named in the Applications and identified in Schedule 2.

Licence means the licence granted by the Licensor to the Licensee under clauses 2.1 and 2.2.

Licensed Intellectual Property Rights means the Applications and (to the extent they constitute Intellectual Property Rights) the Licensor's Improvements.

Licensed Know-how means all unpublished confidential information relating to (a) the Inventions and (b) the Applications that has been communicated to the Licensee by the Licensor in writing before the Effective Date or is communicated to the Licensee by the Licensor under this agreement and is marked as Licenced Know-How within twelve (12) months after the Effective Date and (to the extent they constitute confidential information) the Licensor's Improvements.

Licensed Product means any product or composition comprised in whole or in part of any active pharmaceutical ingredient that is covered or the production of which is covered by a Valid Patent Claim of one of the granted patents or patent applications in the Licensed Intellectual Property Rights and/or has made use of any Licensed Know-How or Licensed Intellectual Property Rights in its development.

Licensed Technology means the Licensed Intellectual Property Rights and the LicensedKnow-How.

Licensee's Improvements means any Improvements made by the Licensee and the Intellectual Property Rights pertaining to them.

Licence Year means each twelve (12) month period beginning on the Effective Date and each anniversary of the Effective Date.

Licensor's Improvements means any Improvements made prior to the third anniversary of the Effective Date solely by the Inventor or the Inventor's group (or a subset of them) within the Field, and the Intellectual Property Rights pertaining to them of which the Licensor has been made aware and is legally able to licence.

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Market and **Marketed** mean, in relation to a Licensed Product, offering to sell, lease, licence or otherwise commercially exploit the Licensed Product or the sale, lease, licence or other commercial exploitation of the Licensed Product.

Major Market means the United States, Japan, France, Germany, UK or Italy.

Net Sales means the gross selling price of the Licensed Product in the form in which it is Marketed by the Licensee or its Affiliates, less:

10. trade, quantity or cash discounts actually given; and

11. outbound carriage and packaging expenses actually paid; and

12. customs duties, sales taxes or other taxes imposed upon and paid with respect to such sales (excluding personal taxes);

provided that such deductions do not exceed reasonable and customary amounts in the markets in which such sales occurred. Sales between the Licensee and its Affiliates shall not be considered for the purposes of this definition unless there is no subsequent sale to a person who is not the Licensee or its Affiliate in an arm's length transaction exclusively for money.

Non-Commercial Use means Academic and Research Purposes and specifically excludes the right to commercially or clinically develop or exploit the Licensed Technology.

Option Field means all human medicinal uses including prophylaxis, treatment, cure or alleviation of symptoms not associated with smoking cessation.

Sub-licensee unless the context requires otherwise includes all indirect sub-licensees under this agreement.

Territory means worldwide.

Valid Patent Claim means either (a) a claim of an issued and unexpired patent included within the Licensed Technology, which has not been held permanently revoked, unenforceable by a decision of a court of other governmental agency of competent jurisdiction, un-appealable or un-appealed within the time allowed for appeal, and which has not been admitted to be invalid or unenforceable through reissue or disclaimer or otherwise or (b) a claim of a pending patent application included within the Licensed Technology, which claim has not been abandoned or finally disallowed without the possibility of appeal or re-filing of such application.

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SCHEDULE 2

INVENTIONS

Applications:

Inventions: (i) [...***...]; ii) [...***...]

Inventor: Tim Gallagher

Documents (clause 2.2): copies of all laboratory notebooks, laboratory records and any and all data and information pertaining to the Inventions and the experiments that gave rise to or provide the justification for the Inventions, solely as they relate to the Licenced Technology in the Field

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SCHEDULE 3

DEED OF COVENANT

[*Insert address of UoB*]

Date: [*insert date*]

Dear Sirs

Sub-Licence between [insert details of Licensee] and [insert details ofSub-Licensee] dated [insert date] (the "Sub-Licence")

Notwithstanding the termination of the head licence through which we have been granted a sub-licence from [*insert details of Licensee*] to use [*insert details of licensed technology*] (the "**Licensed Technology**"), we hereby covenant to the University of Bristol ("**UoB**"), in exchange for the continued right to use the Licensed Technology:

1. to continue to meet all of our obligations and liabilities under the Sub-Licence;

2. [to pay to UoB directly rather than [*insert details of Licensee*] all sums due under, and in accordance with, the Sub-Licence].[1]

3. to provide UoB with a royalty report as required under the Sub-Licence and in any event within thirty (30) days after the close of each six month period commencing on 17 January and 17 July setting out the total gross selling price of each product licensed under the Sub-Licence, the quantity or total number of units of each product licensed under the Sub-Licence sold by the Licensee and a calculation of the royalties due under the Sub-Licence; and

4. Grant UoB the right through an independent certified accountant appointed by UoB ("the Auditor"), to audit all accounts on at least thirty (30) days' written notice no more than once each calendar year for the purpose of determining the accuracy of the royalty reports and payments. The Auditor shall be:

4.1 permitted to enter our principal place of business upon reasonable notice to inspect such records and accounts;

4.2 entitled to take copies of or extracts from such records and accounts;

4.3 given all other information by us as may be necessary or appropriate to enable the amount of royalties payable to be ascertained including the provision of relevant records; and

4.4 shall be allowed access to and permitted to conduct interviews of any sales, engineering or other staff of the Licensee in order to verify the accuracy of the records and accounts and the accuracy of any royalty statements provided to UoB.

If on any such audit a shortfall in payments of greater than five percent (5%) is discovered by the Auditor in respect of the audit period, we shall pay UoB's audit costs.

1 *This wording should be included only in instances where the head licence has been terminated pursuant to clause 13.9.5 or for breach of payment obligations under clause 10 of the agreement.*

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SIGNED AS A DEED by

[***Insert details of Sub-Licensee***] in the presence of:-

Signature of Witness:

Name of Witness:

Address:

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AS WITNESS this agreement has been signed by the duly authorised representatives of the parties.

SIGNED for and on behalf of
THE UNIVERSITY OF BRISTOL:

Name: Dr. Neil Bradshaw

Position: Director of Enterprise

Signature: /s/ Dr. Neil Bradshaw

Date: July 13, 2016

SIGNED for and on behalf of
ACHIEVE LIFE SCIENCE INC

Name: Richard Stewart

Position: Director

Signature: /s/ Richard Stewart

Date: July 13, 2016

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Exhibit 10.28

Achieve Life Science, Inc.
30 Sunnyside Avenue
Mill Valley, CA 94941

December 14, 2016

Dr. Ognian Donev
Chairman & Chief Executive Officer
Sopharma AD
16 Iliensko Shose Boulevard
1220 Sofia, Bulgaria

Dear Ognian:

As we discussed in London and Vladimir has recently told you, Achieve Life Science, Inc. (formerly known as Extab Corporation ("Achieve")) is making progress on the potential merger with a U.S. NASDAQ listed company. In the process of legal due diligence, the U.S. company with a code name of "Arrow" ("Arrow"), has reviewed the Commercial Agreement on Supply of Pharmaceutical Products dated February 1, 2010, as amended May 14, 2015 (collectively, the "Commercial Agreement") between Sopharma AD ("Sopharma") and Achieve. Arrow is concerned about a lack of clarity between the agreements and have requested that Sopharma confirm the following understandings and agreements, which will be incorporated into a subsequent amended and restated Commercial Agreement between Achieve and Sopharma:

1. Sopharma agrees that it will not supply Bulk API and/or Finished Product to any other person or entity in the Territory.

2. Sopharma will have exclusive rights to supply Bulk API in the Territory, but it will permit Achieve to have discussions with, and have the right to enter into an agreement with, one or more other parties to provide fill/finish for the Products. This is to permit Achieve to use another tableting facility for EU regulatory purposes, and also if getting the Sofia tableting facility approved by the U.S. Food and Drug Administration ("FDA") become problematic.

3. Sopharma will maintain recordkeeping, release documentation, and all other information necessary for Achieve to fulfill its regulatory obligations, including to comply with Good Agricultural Practices (as defined by the United States Department of Agriculture), Good Manufacturing Practices (as defined by the FDA and other governmental authorities) and other applicable regulatory requirements. Sopharma will make available such information to Achieve upon request, and will also cooperate with Achieve as needed to respond to regulatory inquiries. Sopharma will permit Achieve to inspect its facilities as needed to ensure this compliance.

4. Sopharma will not be permitted to modify the Products without Achieve's consent, except as necessary for Sopharma to comply with its regulatory requirements (and then shall do so only after written notice to Achieve).

5. Sopharma will grant Achieve full access to the entire supply chain for the Products, so that Achieve can ensure that its full forecasted requirements for the Products can be satisfied, and commit to produce forecasted demand for a specific time period (e.g. 12 months) to be mutually agreed by the parties and include multi-year forecasting supply and purchasing obligations.

6. All of Achieve's rights under the Commercial Agreement, and all other agreements with Sopharma, will survive any transaction with Arrow, in accordance with their respective terms.

The Commercial Agreement shall remain in full force and effect, except to the extent expressly amended by this letter agreement. This letter agreement shall be governed by and construed in accordance with the laws of the State of Delaware, without giving effect to rules governing the conflict of laws.

Please indicate your acceptance of and agreement with this letter agreement by signing where indicated below.

Very truly yours,

ACHIEVE LIFE SCIENCE, INC.

By: /s/ Richard Stewart
Name: Richard Stewart
Title: Chairman

Accepted and agreed:

SOPHARMA AD

By: /s/ Ognian Donev
Name: Ognian Donev
Title: CEO

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" and to the use of our reports dated February 23, 2017, included in the Proxy Statement/Prospectus/Information Statement of OncoGenex Pharmaceuticals, Inc. that is made a part of Amendment No. 1 to the Registration Statement on Form S-4 of OncoGenex Pharmaceuticals, Inc. dated May 3, 2017.

Vancouver, Canada
May 3, 2017

/s/ Ernst & Young LLP
Chartered Professional Accountants

Exhibit 23.2

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the use in this Registration Statement on Amendment No. 1 to FormS-4 of OncoGenex Pharmaceuticals, Inc. of our reportdated March 27, 2017 relating to the financial statements of Achieve Life Science, Inc. which appears in such Registration Statement. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Chartered Professional Accountants
Vancouver, British Columbia
May 3, 2017

Exhibit 99.2

CONSENT OF MTS SECURITIES, LLC

We hereby consent to: (i) the inclusion of our opinion letter, dated January 5, 2017, addressed to the Board of Directors of OncoGenex Pharmaceuticals, Inc. ("OncoGenex") as Annex D to the Proxy Statement/Prospectus/Information Statement, which forms a part of the Registration Statement on Form S-4 of OncoGenex relating to the proposed merger (the "First Merger") of Ash Acquisition Sub, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex ("Merger Sub 1"), with and into Achieve Life Science, Inc., a Delaware corporation ("Achieve"), with Achieve becoming a wholly owned subsidiary of OncoGenex and the surviving corporation of the First Merger (the "Initial Surviving Corporation"), and promptly following the First Merger, the proposed merger of the Initial Surviving Corporation with and into Ash Acquisition Sub 2, Inc., a Delaware corporation and a wholly owned subsidiary of OncoGenex ("Merger Sub 2"), with Merger Sub 2 continuing as the surviving entity in the second merger as a direct wholly owned subsidiary of OncoGenex; these transactions are referred to herein collectively as the "merger"; and (ii) the references to such opinion in such Proxy Statement/Prospectus/Information Statement under the headings "Summary — Opinion of the Financial Advisor to OncoGenex's Board of Directors," "The Merger — Background of the Merger — OncoGenex Background of the Merger," "The Merger — OncoGenex Reasons for the Merger" and "The Merger – Opinion of the Financial Advisor to OncoGenex's Board of Directors." Notwithstanding the foregoing, in giving such consent, we do not admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission thereunder, nor do we hereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term "experts" as used in the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ MTS SECURITIES, LLC

MTS SECURITIES, LLC

New York, New York
May 3, 2017