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

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

FOR THE QUARTERLY PERIOD ENDED June 30, 2017

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

FOR THE TRANSITION PERIOD FROM _____ TO _____.

Commission file number 033-80623

OncoGenex Pharmaceuticals, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**95-4343413**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification Number)**

19820 North Creek Parkway, Bothell, Washington 98011
(Address of Principal Executive Offices)

(425) 686-1500
(Registrant's telephone number, including area code)

Indicate by check whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

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

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 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Exchange Act Rule 12b-2). Yes ☐ No ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	**Outstanding at July 31, 2017**
Common Stock, $0.001 par value	30,104,495

OncoGenex Pharmaceuticals, Inc.

Index to Form 10-Q

PART I. FINANCIAL INFORMATION

Item 1. Consolidated Financial Statements

OncoGenex Pharmaceuticals, Inc.

Consolidated Balance Sheets

(In thousands, except per share and share amounts)

	June 30, 2017 (Unaudited)	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents *[note 4]*	$ 13,916	$ 15,233
Short-term investments *[note 4]*	—	10,230
Interest receivable	—	32
Amounts receivable	241	478
Prepaid expenses	307	954
Total current assets	**14,464**	**26,927**
Restricted cash *[note 4 and note 7]*	272	272
Property and equipment, net	129	258
Other assets	13	13
Total assets	**$ 14,878**	**$ 27,470**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 233	$ 2,121
Accrued liabilities other	1,056	2,442
Accrued clinical liabilities	50	3,415
Accrued compensation	254	188
Current portion of long-term obligations *[note 7]*	46	57
Warrant liability *[note 4 and note 5 [f]]*	114	232
Total current liabilities	**1,753**	**8,455**
Long-term obligations, less current portion *[note 7]*	22	49
Total liabilities	**1,775**	**8,504**
Commitments and contingencies *[note 7]*		
Stockholders' equity:		
Common stock, $0.001 par value, 75,000,000 shares authorized, 30,138,488 and 30,059,514 issued at June 30, 2017 and December 31, 2016, respectively, and 30,104,495 and 30,025,521 outstanding at June 30, 2017 and December 31, 2016, respectively	30	29
Additional paid-in capital	213,662	213,239
Accumulated deficit	(203,230)	(196,942)
Accumulated other comprehensive income	2,641	2,640
Total stockholders' equity	**13,103**	**18,966**
Total liabilities and stockholders' equity	**14,878**	**27,470**

See accompanying notes.

OncoGenex Pharmaceuticals, Inc.

Consolidated Statements of Loss and Comprehensive Loss

(Unaudited)

(In thousands, except per share and share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
COLLABORATION REVENUE *[note 3]*	$ —	$ 2,122	$ —	$ 5,062
EXPENSES				
Research and development	777	4,662	1,689	9,304
General and administrative	2,321	2,475	4,853	4,774
Restructuring costs (recovery) *[note 8]*	(9)	(8)	(107)	423
Litigation settlement *[note 7]*	—	1,375	—	1,375
Total operating expenses	3,089	8,504	6,435	15,876
OTHER INCOME (EXPENSE)				
Interest income	23	61	50	109
Other	3	(35)	1	(25)
Gain (loss) on warrants	66	(533)	118	134
Total other income	92	(507)	169	218
Net loss	$ (2,997)	$ (6,889)	$ (6,266)	$ (10,596)
OTHER COMPREHENSIVE INCOME				
Net unrealized gain on securities	—	4	1	18
Total other comprehensive income	—	4	1	18
Comprehensive loss	$ (2,997)	$ (6,885)	$ (6,265)	$ (10,578)
Basic and diluted net loss per common share	$ (0.10)	$ (0.23)	$ (0.21)	$ (0.35)
Shares used in computation of basic and diluted net loss per common share	30,026,743	29,932,930	30,083,776	29,880,277

See accompanying notes

OncoGenex Pharmaceuticals, Inc.

Consolidated Statements of Cash Flows

(Unaudited)

(In thousands)

	Six Months Ended June 30,	
	2017	**2016**
Operating Activities:		
Net loss	$ (6,266)	$ (10,596)
Adjustments to reconcile net loss to net cash used in operating activities:		
Gain on warrants *[note 4 and note 5 [f]]*	(118)	(134)
Depreciation	130	103
Stock-based compensation *[note 5 [c] and note 5 [d]]*	423	1,387
Restructuring gain *[note 8]*	(107)	—
Changes in operating assets and liabilities:		
Interest receivable	32	64
Amounts receivable	237	(293)
Prepaid expenses and other assets	647	714
Accounts payable	(1,888)	(784)
Accrued liabilities other	(1,279)	(19)
Accrued clinical liabilities	(3,365)	(2,263)
Accrued compensation	66	61
Accrued litigation settlement *[note 7]*	—	1,375
Lease obligation	(38)	(16)
Deferred collaboration revenue *[note 3]*	—	(5,040)
Net cash used in operating activities	(11,526)	(15,441)
Financing Activities:		
Taxes paid related to net share settlement of equity awards	(22)	—
Net cash used in financing activities	(22)	—
Investing Activities:		
Purchase of investments	(4)	(29,111)
Proceeds from sale of investments	—	—
Proceeds from maturities of investments	10,234	20,858
Purchase of property and equipment	(1)	(35)
Net cash provided by (used in) investing activities	10,229	(8,288)
Effect of exchange rate changes on cash	2	—
Net increase (decrease) in cash and cash equivalents	(1,317)	(23,729)
Cash and cash equivalents at beginning of period	15,233	34,310
Cash and cash equivalents at end of period	$ 13,916	$ 10,581

See accompanying notes.

1. NATURE OF BUSINESS AND BASIS OF PRESENTATION

OncoGenex Pharmaceuticals, Inc. (referred to as "OncoGenex," "we," "us," or "our") is a biopharmaceutical company committed to the development and commercialization of new therapies that address treatment resistance in cancer patients. We were incorporated in the state of Delaware, are headquartered in Bothell, Washington and have a subsidiary in Vancouver, British Columbia.

The unaudited consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States for interim financial information and with the instructions to Form 10-Q. Accordingly, they do not include all of the information and footnotes required to be presented for complete financial statements. The accompanying unaudited consolidated financial statements reflect all adjustments (consisting only of normal recurring items) which are, in the opinion of management, necessary for a fair presentation of the results for the interim periods presented. The accompanying consolidated Balance Sheet at December 31, 2016 has been derived from the audited consolidated financial statements included in our Annual Report on Form 10-K for the year then ended. The unaudited consolidated financial statements and related disclosures have been prepared with the assumption that users of the interim financial information have read or have access to the audited consolidated financial statements for the preceding fiscal year. Accordingly, these financial statements should be read in conjunction with the audited consolidated financial statements and the related notes thereto included in the Annual Report on Form 10-K for the year ended December 31, 2016 and filed with the United States Securities and Exchange Commission, or the SEC, on February 23, 2017.

The consolidated financial statements include the accounts of OncoGenex and our wholly owned subsidiaries, OncoGenex Technologies Inc., or OncoGenex Technologies, Ash Acquisition Sub, Inc and Ash Acquisition Sub 2, Inc. All intercompany balances and transactions have been eliminated.

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 Special Meeting date to vote on the merger has been set for August 1, 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, Donald Joseph and Jay Moyes. 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, 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, on July 31, 2017 to our existing stockholders as of July 27, 2017. 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 transaction and other 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 and other costs we would have paid on behalf of Achieve. As of June 30, 2017, we have paid, on behalf of Achieve, a total of $0.4 million in transaction and other costs associated with the merger.

2. ACCOUNTING POLICIES

Pending Adoption of Recent Accounting Pronouncements

On February 2016, the Financial Accounting Standards Board, or FASB, issued its new leases standard, 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 our current accounting for our lease arrangements, particularly our current operating lease arrangements, as well as our 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.

3. 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.

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. We have fully utilized the $23.2 million in advance reimbursement for custirsen-related development costs and recognized the full amount into collaboration revenue between January 1, 2015 and June 30, 2016.

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.

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.

Ionis and UBC License Agreements

In January 2017, we discontinued further development of OGX-225. We provided a notice of discontinuance to Ionis and a letter of termination to UBC, notifying them that we have discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. 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 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.

In November 2016, we discontinued further development of custirsen. We provided a notice of discontinuance to Ionis and a 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 custirsen-related agreements with Ionis and UBC, including the Ionis settlement agreement, are no longer owed and no further payments are due.

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 provided for custirsen, we believe that all financial obligations under the settlement agreement are no longer owed and no further payments are due.

4. 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 levels 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.

Money Market Securities

Money market securities are classified within Level I of the fair value hierarchy and are valued based on quoted prices in active markets for identical securities.

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 June 30, 2017, we recorded a $0.1 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 was 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 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):

June 30, 2017	Level 1	Level 2	Level 3	Total
Assets				
Cash	$ 822	$ —	$ —	$ 822
Money market securities (cash equivalents)	13,094	—	—	13,094
Restricted cash (Note 7)	272	—	—	272
Total assets	**$ 14,188**	**$ —**	**$ —**	**$ 14,188**
Liabilities				
Warrants	$ —	$ —	$ 114	$ 114

The following table presents the changes in fair value of our total Level 3 financial liabilities for the six months ended June 30, 2017. During the six months ended June 30, 2017, we did not issue any common stock warrants that were classified as liabilities (in thousands):

	Liability at December 31, 2016	Issuance of Warrants	Unrealized Gain on warrants	Liability at June 30, 2017
Warrant liability	$ 232	$ —	$ (118)	$ 114

Cash, cash equivalents and short-term investments consist of the following (in thousands):

June 30, 2017	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Cash	$ 822	$ —	$ —	$ 822
Money market securities	13,094	—	—	13,094
Total cash and cash equivalents	**$ 13,916**	**$ —**	**$ —**	**$ 13,916**
Money market securities (restricted cash)	272	—	—	272
Total restricted cash	**$ 272**	**$ —**	**$ —**	**$ 272**

Our gross realized gains and losses on sales of available-for-sale securities were not material for the three and six months ended June 30, 2017 and 2016.

All securities included in cash and cash equivalents had 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.

5. COMMON STOCK

[a] Authorized

75,000,000 authorized common shares, par value of $0.001, and 5,000,000 preferred shares, par value of $0.001.

[b] Issued and outstanding shares

Equity Award Issuances and Settlements

During the six months ended June 30, 2017, we issued no shares of common stock to satisfy stock option exercises and 118,986 shares of common stock to satisfy restricted stock unit settlements, compared with the issuance of no shares of common stock to satisfy stock option exercises and 196,732 shares of common stock to satisfy restricted stock unit settlements, respectively, during the six months ended June 30, 2016.

[c] Stock options

2010 Performance Incentive Plan

As of June 30, 2017, we had reserved, pursuant to various plans, 3,493,244 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 1,095,890 were reserved for options currently outstanding, 115,906 were reserved for restricted stock units currently outstanding and 2,281,448 were available for future equity grants.

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.

Stock Option Summary

We grant stock options that vest over time in accordance with terms as determined by our Board of Directors, or the Board, which terms are typically four years for employee and consultant grants and one to three years for Board option grants. We also grant stock option awards that vest in conjunction with certain performance conditions to executive officers, employees and consultants. 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 condition. The expiry date for each option is set by the Board, which is typically seven to ten years. The exercise price of the options is determined by the Board, but will be 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, December 31, 2016	**1,378,805**	**$ 8.62**
Expired	(265,239)	8.80
Forfeited	(17,676)	3.72
Balance, June 30, 2017	**1,095,890**	**$ 8.57**

The fair value of each stock award for employees and directors is estimated on the grant date and for consultants at each reporting period, using the Black-Scholes option-pricing model based on the weighted-average assumptions. No stock options were granted during the six months ended June 30, 2017. For the six months ended June 30, 2016, the weighted-average assumptions used in the Black-Scholes option-pricing model are noted in the following table:

	Six Months Ended June 30, 2016
Risk-free interest rates	1.51 %
Expected dividend yield	0 %
Expected life	5.3 years
Expected volatility	71.88 %

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 strategic alternatives we are exploring and the structural changes to our business that may result 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 results for the periods set forth below included share-based compensation expense for stock options and restricted stock units in the following expense categories of the consolidated statements of loss (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Research and development	$ 78	$ 462	$ 148	$ 684
General and administrative	$ 134	457	275	703
Total stock-based compensation	$ 212	$ 919	$ 423	$ 1,387

As of June 30, 2017 and December 31, 2016, the total unrecognized compensation expense related to stock options granted was $0.3 million and $0.6 million respectively, which is expected to be recognized as expense over a period of approximately 1.0 year from June 30, 2017.

For the three and six months ended June 30, 2017, a total of 4.9 million shares, consisting of 3.7 million warrants, 1.1 million options and 0.1 million restricted stock units, have not been included in the loss per share computation, as their effect on diluted per share

amounts would have been anti-dilutive. For the same period in 2016, a total of 7.1 million shares underlying options, restricted stock units and warrants have not been included in the loss per share computation.

[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, key employees and consultants. 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 condition. For the three and six months ended June 30, 2017, we recorded a compensation expense of $0.1 million and $0.1 million, respectively, related to these awards, compared to $0.4 million and $0.6 million of compensation expense for the three and six months ended June 30, 2016, respectively.

The following table summarizes our restricted stock unit award activity during the six months ended June 30, 2017:

	Number of Shares	Weighted Average Grant Date Fair Value
Balance, December 31, 2016	**253,221**	**$ 4.56**
Vested	(118,986)	5.43
Forfeited or expired	(18,329)	3.70
Balance, June 30, 2017	**115,906**	**$ 3.74**

As of June 30, 2017, we had approximately $0.6 million in total unrecognized compensation expense related to our restricted stock unit awards that is to be recognized over a weighted-average period of approximately 1.0 year.

[e] Non-employee options and restricted stock units

We recognize non-employee stock-based compensation expense over the period of expected service by the non-employee. As the service is performed, we are required to update our valuation assumptions, re-measure unvested options and restricted stock units and record the stock-based compensation using the valuation as of the vesting date. This differs from the accounting for employee awards where the fair value is determined at the grant date and is not subsequently adjusted. This re-measurement may result in higher or lower stock-based compensation expense in the Consolidated Statements of Loss and Comprehensive Loss. As such, changes in the market price of our stock could materially change the value of an option or restricted stock unit and the resulting stock-based compensation expense.

[f] Common Stock Warrants

The following is a summary of outstanding warrants to purchase common stock at June 30, 2017:

	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 during the six months ended June 30, 2017 or 2016. The Series A-1 Warrants issued in the April 2015 financing are classified as equity. 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.

	As of June 30,	
Series A and Series B Warrant Valuation Assumptions	**2017**	**2016**
Risk-free interest rates	1.38 %	0.71 %
Expected dividend yield	0 %	0 %
Expected life	2.00 years	3.00 years
Expected volatility	104.85 %	91.64 %

6. RELATED PARTY TRANSACTION

In January 2016, Scott Cormack, our Chief Executive Officer, married Michelle Griffin, a consultant to us. For the three and six months ended June 30, 2017, we paid Ms. Griffin approximately $0.1 million and $0.1 million, respectively, for consulting services pursuant to a consulting agreement entered into in 2013 and amended thereafter. In addition, pursuant to the consulting agreement with Ms. Griffin, as at June 30, 2017, we had an accrued termination liability of approximately $0.4 million.

7. COMMITMENTS AND CONTINGENCIES

The following table summarizes our contractual obligations as of June 30, 2017 (in thousands):

	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Bothell office operating lease	$ 238	$ 238	$ —	$ —	$ —
Vancouver office operating lease	$ 119	$ 95	$ 24	$ —	$ —
UBC license maintenance fees	$ 28	$ 5	$ 9	$ 9	$ 5
Leased equipment	$ 13	$ 13	$ —	$ —	$ —
Total	**$ 398**	**$ 351**	**$ 33**	**$ 9**	**$ 5**

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.

Ionis Pharmaceuticals Inc. and University of British Columbia

Custirsen

In November 2016, we discontinued further development of custirsen. We provided a notice of discontinuance to Ionis and a 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 custirsen-related agreements with Ionis and UBC, including the Ionis settlement agreement, are no longer owed and no further payments are due.

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 provided for custirsen, we believe that all financial obligations under the settlement agreement are no longer owed and no further payments are due.

OGX-225

In January 2017, we discontinued further development of OGX-225. We provided a notice of discontinuance to Ionis and a letter of termination to UBC, notifying them that we have discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. 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 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.

Apatorsen

Under the terms of the agreement, we 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. We are 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. We did not make any royalty payments to Ionis under the terms of the agreement in 2017.

We 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. We are also obligated to pay to 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. We did not make any royalty payments to UBC under the terms of the agreement in 2017.

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.

Lease Arrangements

We have an operating lease agreement for office space being used in Vancouver, Canada, which expires in September 2018. Pursuant to the operating lease agreement, we have the option to terminate the lease early without penalty at any time after January 1, 2018 so long as we provide three months prior written notice to the landlord.

Future minimum lease payments under the Vancouver lease are as follows (in thousands):

2017		95
2018		24
Total	**$**	**119**

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 Bothell lease are as follows (in thousands):

2017		143
2018		95
Total	**$**	**238**

Consolidated rent and operating expense relating to both the Vancouver, Canada and Bothell, Washington offices for the three and six months ended June 30, 2017 was $0.1 million and $0.3 million, respectively. Consolidated rent and operating expense for the three and six months ended June 30, 2016 was $0.1 million and $0.3 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. Accordingly, no further payments are owing to BMR related to the Lease Termination Agreement.

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 June 30, 2017 and 2016, we did not consummate any change in control transaction.

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 June 30, 2017.

We have certain agreements with certain organizations with which we do business that contain indemnification provisions pursuant to which we 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.

8. RESTRUCTURE

In the three and six months ended June 30, 2017, we revised our estimates of the restructuring expense and recognized a recovery of $9,000 and $0.1 million, respectively. We recorded a restructuring recovery of $8,000 and an expense of $0.4 million for the three and six months ended June 30, 2016, respectively.

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 incurred approximately $1.0 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.

	Original estimated costs	Revision to estimated costs	Amounts settled to date	Accrued at June 30, 2017
Restructuring Costs	$ 2,206	$ (107)	$ (2,071)	$ 28

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

INFORMATION REGARDING FORWARD LOOKING STATEMENTS

This document contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements involve a number of risks and uncertainties. We caution readers that any forward-looking statement is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking statement. These statements are based on current expectations of future events. Such statements include, but are not limited to, statements about future financial and operating results, plans, objectives, expectations and intentions, costs and expenses, interest rates, outcome of contingencies, financial condition, results of operations, liquidity, business strategies, cost savings, objectives of management and other statements that are not historical facts. You can find many of these statements by looking for words like "believes," "expects," "anticipates," "estimates," "may," "should," "will," "could," "plan," "intend" or similar expressions in this document or in documents incorporated by reference into this document. We intend that such forward-looking statements be subject to the safe harbors created thereby. Examples of these forward-looking statements include, but are not limited to:

- the timing and completion of our pending merger;
- our ability to identify a third party to develop apatorsen;
- progress and preliminary and future results of any clinical trials;
- anticipated regulatory filings, requirements and future clinical trials;
- timing and amount of future contractual payments, product revenue and operating expenses;
- market acceptance of our products and the estimated potential size of these markets; and
- our anticipated future capital requirements and the terms of any capital financing agreements.

These forward-looking statements are based on the current beliefs and expectations of our management and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results may differ materially from current expectations and projections. Factors that might cause such a difference include those discussed in Item 1A "Risk Factors," as well as those discussed elsewhere in the Quarterly Report on Form 10-Q. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this document or, in the case of documents referred to or incorporated by reference, the date of those documents.

All subsequent written or oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events, except as may be required under applicable U.S. securities law. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

Overview

We are a biopharmaceutical company that has been focused on the development of novel next generation cancer therapeutics. Our mission is to accelerate transformative therapies to improve the lives of people living with cancer and other serious diseases. Our product candidate apatorsen has a distinct mechanism of action and represents a unique opportunity for cancer drug development that we believe 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. We currently do not intend to conduct additional pre-clinical or clinical studies with apatorsen and are 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, we have discontinued further development of custirsen. In November 2016, we 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 we have discontinued development of custirsen, resulting in termination of all licensing agreements related to custirsen. All custirsen clinical studies have been completed and all global regulatory agencies notified of trial closures. All investigational new drug applications, or INDs, with the United States Food and Drug Administration, or FDA, related to custirsen, have been withdrawn.

In January 2017, we also discontinued further development of our pre-clinical product candidate, OGX-225. We provided a notice of discontinuance to Ionis, and a letter of termination to UBC, informing them that we have discontinued development of OGX-225

resulting in termination of the license agreement related to this product candidate.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 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

On January 5, 2017, we 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 75% of the combined company's outstanding shares and our current equityholders are expected to own the remaining 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, 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 Special Meeting date to vote on the merger has been set for August 1, 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, Donald Joseph and Jay Moyes. 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, 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, on July 31, 2017 to our existing stockholders as of July 27, 2017. 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 are currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen, but have not yet identified such a party or set any Milestones. We cannot give any assurance that we 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 we do, that any Milestones will be set or any consideration will ever be received by the post-merger combined company or distributed to the CVR holders. Therefore, our stockholders will not be able to determine the value of the CVRs, if any, at the time they are asked to approve the merger, since the value of the CVRs is contingent upon the occurrence of future events that are not yet known.

We also entered into a letter agreement with Achieve, whereby we would pay, on behalf of Achieve, for transaction and other 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 and other costs we would have paid on behalf of Achieve. As of June 30, 2017, we have paid, on behalf of Achieve, a total of $0.4 million in transaction and other costs associated with the merger.

Product Candidate Apatorsen

Apatorsen is our 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. We have collaborated with Ionis and selectively licensed technology from Ionis to combine Ionis' second-generation antisense chemistry with our 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, we 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. All six of these trials have been completed. We currently do not intend to conduct additional pre-clinical or clinical studies with apatorsen and are seeking a collaboration partnership to fund and further develop this product candidate.

The six phase 2 apatorsen clinical trials that have been completed under the ORCA program are described below.

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: Our 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= 2.01; p=0.0004). 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= 0.462; 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 high baseline Hsp27 status and thus warranted further study in this population. We do 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 Spruce-2™ Trial (formerly referred to as the Cedar Trial): The 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 continued weekly apatorsen infusions as maintenance treatment after chemotherapy until disease progression. The aim of the trial was to determine if adding apatorsen to gemcitabine and carboplatin therapy can extend progression free survival, or PFS, outcome. Additional analyses 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 did not meet the primary endpoint forimproved progression free survival or the secondary endpoint for improved survival in patients receiving apatorsen plusgemcitabine and carboplatin compared to gemcitabine and carboplatin alone. Final results have not yet been presented or published. The trial was an investigator-sponsored trial conducted and funded primarily by the UK National Cancer Research Network and the UK Experimental Cancer Medicine Network.
- The Rainier™ Trial: Our 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. We do 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 was to evaluate 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 14% with Zytiga alone. For patients with ≥5 CTCs at baseline, 22% vs 11% of patients had a CTC reduction to less than 5 CTCs when apatorsen was added to Zytiga vs Zytiga alone, respectively.

Overview of Safety Results for Company-Sponsored Apatorsen Trials

Phase 2 Borealis-1 Trial

Overall, the incidence of serious adverse events, or SAEs, in the Borealis-1 trial was higher in the apatorsen arms (when combined with gemcitabine and cisplatin) than the placebo arm (placebo: 43%, 600 mg: 53%, 1000 mg: 62%). The only SAEs that were experienced by ≥5% 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%).

Phase 1 Clinical Trial in Patients with Solid Tumors

Most adverse events, or AEs, during the Phase 1 clinical trial in patients with solid turmors 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. 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.

Product Candidate Custirsen

In November 2016, we provided a notice of discontinuance to Ionis notifying them 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 custirsen-related agreements with Ionis, including the Ionis settlement agreement, are no longer owed and no further payments are due.

All custirsen clinical studies have been completed and all global regulatory agencies notified of trial closures. All investigational new drug applications, or INDs, with the United States Food and Drug Administration, or FDA, related to custirsen, have been withdrawn.

Product Candidate OGX-225

In January 2017, we discontinued further development of OGX-225. We provided a notice of discontinuance to Ionis and a letter of termination to UBC, notifying them that we have discontinued development of OGX-225 resulting in termination of the license agreement related to this product candidate. 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 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.

Collaboration Revenue

Revenue recognized to date was attributable to the upfront payment we received in the fourth quarter of 2009 pursuant to a Collaboration Agreement with Teva, cash reimbursements from Teva for certain costs incurred by us under the clinical development plan and advanced reimbursement we received from Teva in April 2015. Our policy is to account for these reimbursements as collaboration revenue.

In April 2015, we and Teva entered into an agreement to terminate the Collaboration Agreement, or the Termination Agreement. 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.

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, we manage our clinical trials through contract research organizations and independent medical investigators at their sites and at hospitals and expect this practice to continue. Due to the number of projects and our ability to utilize resources across several projects, we do not record or maintain information regarding the indirect operating costs incurred for our research and development

programs on a program-specific basis. In addition, we believe that allocating costs on the basis of time incurred by our employees does not accurately reflect the actual costs of a project.

Several of our 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 us to complete these clinical trials at a lower cost to us.

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 we took over responsibility for future custirsen-related costs following termination of our Collaboration Agreement.

We cannot estimate completion dates for development activities or when we might receive material net cash inflows from our R&D projects, if ever.

Our projects or intended R&D activities may be subject to change from time to time as we evaluate results from completed studies, our 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 our 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 June 30, 2017:

	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

No warrants were exercised during the six months ended June 30, 2017 or 2016.

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 was based on the historical volatility of shares of our common stock for a period that coincides with the expected life of the warrants.

Results of Operations

For the three and six months ended June 30, 2017 and 2016

Collaboration revenue

Revenue for the three and six months ended June 30, 2017 decreased to zero from $2.1 million and $5.1 million for the three and six months ended June 30, 2016, 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 2017 as compared to 2016 was due to the full recognition of the remaining amounts of deferred revenue in 2016.

Research and development expenses

Our research and development expenses for our clinical development programs for the three and six months ended June 30, 2017 and 2016 are as follows (in thousands):

	Three months ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Clinical development programs:				
Custirsen	$ 72	$ 2,374	$ 230	$ 4,656
Apatorsen	$ 144	$ 496	$ 264	$ 904
Other research and development	$ 561	$ 1,792	$ 1,195	$ 3,744
Total research and development expenses	**$ 777**	**$ 4,662**	**$ 1,689**	**$ 9,304**

Research and development expenses for the three and six months ended June 30, 2017 decreased to $0.8 million and $1.7 million, respectively, from $4.7 million and $9.3 million for the three and six months ended June 30, 2016, respectively. The decrease in 2017 as compared to 2016 was due to lower clinical trial costs for the ENSPIRIT and AFFINITY trials as a result of discontinued development of custirsen in the fourth quarter of 2016, reduced apatorsen development activities in the first quarter of 2017 and lower consulting and professional fees as a result of the restructuring in the fourth quarter of 2016.

General and administrative expenses

General and administrative expenses for the three and six months ended June 30, 2017 decreased to $2.3 million and increased to $4.9 million, respectively, from $2.5 million and $4.8 million for the three and six months ended June 30, 2016, respectively. The decrease in 2017 as compared to 2016 was due to lower professional fees, headcount and consulting expenses as a result of the restructuring in the fourth quarter of 2016. This was partially offset by higher legal fees associated with the pending merger with Achieve announced in January 2017.

Gain / (loss) on warrants

We recorded a gain of $0.1 million and $0.1 million on the revaluation of our outstanding warrants for the three and six months ended June 30, 2017, respectively. We recorded a loss of $0.5 million and a gain of $0.1 million on revaluation of the warrants for the three and six months ended June 30, 2016, respectively. We revalue the warrants at each balance sheet date to fair value.

Restructuring recovery / (expense)

In the three and six months ended June 30, 2017, we revised our estimates of the restructuring expense and recognized a recovery of $9,000 and $0.1 million, respectively, as compared to a restructuring recovery of $8,000 and an expense of $0.4 million, for the three and six months ended June 30, 2016, respectively.

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 incurred approximately $1.0 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.

	Original estimated costs	Revision to estimated costs	Amounts settled to date	Accrued at June 30, 2017
Restructuring Costs	$ 2,206	$ (107)	$ (2,071)	$ 28

Liquidity and Capital Resources

We have incurred an accumulated deficit of $203.2 million through June 30, 2017, and we expect to incur substantial additional losses in the future as we operate our business and continue or expand our R&D activities and other operations upon completion of the

merger with Achieve Life Sciences. We have not generated any revenue from product sales to date, and we may not generate product sales revenue in the near future, if ever.

Our operations to date have been primarily funded through the sale of our equity securities and payments received from Teva. As of June 30, 2017, our cash, cash equivalents, and short-term investments decreased to $13.9 million from $25.5 million as of December 31, 2016.

In April 2015, we and Teva terminated our Collaboration Agreement. 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. We do not expect to receive any additional amounts from Teva.

Pursuant to the Termination Agreement, Teva remains responsible for expenses related to custirsen incurred pursuant to the Collaboration Agreement through December 31, 2014. We are responsible for all custirsen-related expenses, if any, 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 a result of the termination of the Collaboration Agreement, other than the advanced reimbursement for certain continuing research and development activities related to custirsen already received by us, and any amounts paid to us from the hold-back by Teva, if any, we will not receive any future cash reimbursements from Teva for certain costs incurred by us in connection with the clinical development of custirsen. We fully utilized the $23.2 million in advance reimbursement for custirsen-related development costs between January 1, 2015 and September 30, 2016.

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 incurred approximately $1.0 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, 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. The workforce reduction was substantially completed in the fourth quarter of 2016.

Cash Flows

Cash Used by Operations

For the six months ended June 30, 2017, net cash used in operating activities was $11.5 million compared to net cash used by operations of $15.4 million for the six months ended June 30, 2016. The decrease in cash used in operations in 2017 as compared to 2016 was primarily attributable to a decrease in clinical trial costs associated with reduced clinical development activities and a decrease in operating activities as a result of the restructure and workforce reduction announced in the fourth quarter of 2016. This was partially offset by higher legal fees associated with the pending merger with Achieve announced in January 2017.

Cash Used by Financing Activities

For the six months ended June 30, 2017, net cash used in financing activities was $22,000 compared to zero for the six months ended June 30, 2016. Net cash used by financing activities in the six months ended June 30, 2017 was the result of taxes paid related to net share settlement of equity awards. There were no financing activities in the six months ended June 30, 2016.

Cash Provided by Investing Activities

For the six months ended June 30, 2017, net cash provided by investing activities was $10.2 million compared to net cash used in investing activities of $8.3 million for the six months ended June 30, 2016. Net cash provided in investing activities for the six months ended June 30, 2017 and net cash used by investing activities for the six months ended June 30, 2016 was due to transactions involving short-term investments in the normal course of business.

Operating Capital and Capital Expenditure Requirements

Based on our current expectations, we believe that our cash, cash equivalents, and short-term investments will be sufficient to fund our currently planned operations for at least the next 12 months.

We have based this estimate on assumptions that may prove to be wrong, or we could utilize our available capital resources sooner than we currently expect. If the timeline to complete the recently announced merger takes longer than anticipated or is not completed, we change our development plans or elect to further develop apatorsen, cannot find third-party collaborators to fund further development of apatorsen, our ongoing trial proceeds slower or takes longer than expected to complete, we acquire rights to new product candidates, do not successfully defend litigation or engage in commercialization and product launch activities, we will need additional capital sooner than we expect. If we need to extend our cash availability or to conduct any such currently unplanned development activities, we would seek such necessary funding through the licensing or sale of our product candidate, by executing a partnership or collaboration agreement, or through private or public offerings of our equity or debt. However, we can provide no assurance that such funding would be available to us on favorable terms, or at all.

Our future capital requirements will depend on many factors, including:

- the timing of completion of the pending merger with Achieve;
- whether we modify our development program for apatorsen, including terminating and starting new trials;
- whether we are able to enter into additional third-party collaborative partnerships to develop and/or commercialize apatorsen on terms that are acceptable to us;
- the scope and results of our clinical trials;
- our ability to forecast the cost of our ongoing development activities;
- whether we experience delays in our 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 we engage in commercialization and product launch activities.

Off-Balance Sheet Arrangements

We did not have any off-balance sheet financing arrangements at June 30, 2017.

Commitments and Contingencies

We previously disclosed certain contractual obligations and contingencies and commitments relevant to us within the financial statements and Management Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the SEC on February 23, 2017. There have been no material changes to our “Contractual Obligations” table in Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our 2016 Form 10-K. For more information regarding our current contingencies and commitments, see note 7 to the financial statements included above.

Material Changes in Financial Condition

(in thousands)	June 30, 2017	December 31, 2016
Total Assets	$ 14,878	$ 27,470
Total Liabilities	1,775	8,504
Total Equity	13,103	18,966

The decrease in assets at June 30, 2017 compared to December 31, 2016 was primarily due to a decrease in cash and cash equivalents as these assets have been used to fund operations. The decrease in liabilities at June 30, 2017 compared to December 31, 2016 were primarily due to lower clinical trial accruals for the ENSPIRIT and AFFINITY trials as a result of discontinued development of custirsen in the fourth quarter of 2016.

Critical Accounting Policies and Estimates

The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect reported amounts and related disclosures. We have discussed those estimates that we believe are critical and require the use of complex judgment in their application in our Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on February 23, 2017. Since December 31, 2016, there have been no material changes to our critical accounting policies or the methodologies or assumptions we apply under them.

New Accounting Standards

See Note 2, "Accounting Policies," of the consolidated financial statements for information related to the adoption of new accounting standards in 2017, none of which had a material impact on our financial statements, and the future adoption of recently issued accounting standards, which we do not expect to have a material impact on our financial statements.

Item 3. Quantitative and Qualitative Disclosures About 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. We invest our 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 we monitor our exposure to interest rate changes. We have very limited interest rate risk due to having only a few assets or liabilities subject to fluctuations in interest rates. Our 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. We have estimated the effect on our portfolio of a hypothetical increase in interest rates by 1% to be a reduction of approximately $0.1 million in the fair value of our investments as of June 30, 2017.

Foreign Currency Exchange Risk

We are exposed to risks associated with foreign currency transactions on certain contracts and payroll expenses related to our Canadian subsidiary, OncoGenex Technologies, denominated in Canadian dollars, and we have not hedged these amounts. As our unhedged foreign currency transactions fluctuate, our 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 our reported results of operations and financial condition, and fluctuations in exchange rates might harm our reported results and accounts from period to period. We have estimated the effect on our reported results of operations of a hypothetical increase of 10% in the exchange rate of the Canadian dollar against the U.S. dollar to be approximately $0.1 million for the three months ended June 30, 2017.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that material information required to be disclosed in our periodic reports filed or submitted under the Securities Exchange Act of 1934, as amended, or the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Our disclosure controls and procedures are also designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act are accumulated and communicated to our management, including our principal executive officer and principal financial officer as appropriate, to allow timely decisions regarding required disclosure.

During the quarter ended June 30, 2017, we carried out an evaluation, under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Based upon that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective, as of the end of the period covered by this report.

Changes in Internal Control Over Financial Reporting

We have not made any changes to our internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended June 30, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls

Our management does not expect that our disclosure controls and procedures or our internal controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our company have been detected.

PART II. OTHER INFORMATION

Item 1A. Risk Factors

Risks Related to Our Business

Investing in our 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 Quarterly Report on Form 10-Q and in the other periodic and current reports and other documents we file with the Securities and Exchange Commission, before deciding to invest in our common stock. If any of the following risks materialize, our business, financial condition, results of operation and future prospects will likely be materially and adversely affected. In that event, the market price of our common stock could decline and you could lose all or part of your investment.

Risks Related to Our Pending merger

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

The consummation of the proposed merger between us and Achieve is subject to a number of closing conditions, including the approval by our stockholders and other customary closing conditions. The Special Meeting date to vote on the merger has been set for August 1, 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 us and Achieve is not consummated, we may be subject to a number of material risks, and our business and stock price could be adversely affected, as follows:

- we have incurred and expect to continue to incur significant expenses related to the proposed merger with Achieve even if the merger is not consummated;
- we 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 our common stock may decline to the extent that the current market price reflects a market assumption that the proposed merger will be completed; and
- we 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, our board of directors may decide to pursue a dissolution and liquidation of the company. In such an event, the amount of cash available for distribution to our 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, our board of directors may decide to pursue a dissolution and liquidation of the company. In such an event, the amount of cash available for distribution to our 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 we continue to fund our operations. In addition, if our board of directors was to approve and recommend, and our stockholders were to approve, a dissolution and liquidation of the company, we 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 our stockholders. Our commitments and contingent liabilities may include severance obligations, regulatory and clinical obligations remaining under our clinical trials, fees and expenses related to the merger and non-cancelable lease obligations. As a result of this requirement, a portion of our assets may need to be reserved pending the resolution of such obligations. In addition, we may be subject to litigation or other claims related to a dissolution and liquidation. If a dissolution and liquidation were pursued, our 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 our common stock could lose all or a significant portion of their investment in the event of a liquidation, dissolution or winding up of our company.

The issuance of shares of our common stock to Achieve stockholders in the pending merger will dilute substantially the voting power of our 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 our common stock, subject to certain adjustments. Immediately following 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. Accordingly, the issuance of shares of our common stock to Achieve stockholders in the merger will reduce significantly the relative voting power of each share of our common stock held by our current equityholders. Consequently, our 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.

We have incurred and will continue to incur significant transaction costs in connection with the merger.

We have incurred and will continue to incur significant transaction costs in connection with the merger. We estimate that we will incur aggregate direct transaction costs of approximately $2.9 million associated with the merger and $0.5 million that we 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 our common stock and our 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 our businesses in the following ways, including:

- the attention of our 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 us; and
- third parties may seek to terminate or renegotiate their relationships with us as a result of the merger, whether pursuant to the terms of their existing agreements with us or otherwise.

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

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

On February, October and November 2016, we announced workforce reductions, which have reduced the headcount to 11 remaining employees. Our 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 our ability to effectively manage our resources and to consummate the pending merger. Additional attrition could have a material adverse effect on our business, including delaying the completion of wind down activities related to our custirsen clinical trials and related operations and increasing the time and funds required. In addition, as a result of the reduction in our workforce, we face an increased risk of employment litigation.

Risks Related to our Business

We have incurred losses since inception and anticipate that we will continue to incur losses for the foreseeable future. We have never had any products available for commercial sale and we may never achieve or sustain profitability.

We are a clinical-stage biopharmaceutical company, are not profitable, have incurred losses in each year since our inception and do not expect to become profitable in the foreseeable future. We have never had any products available for commercial sale, and we have not generated any revenue from product sales nor do we anticipate that we will generate revenue from product sales in the near future. Our 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. Our other product candidate, apatorsen, is earlier in its development and will require a collaboration partner to fund the required additional development. We have not yet submitted any products for approval by regulatory authorities, and we continue to incur research and development and general and administrative expenses related to our operations. We expect to continue to incur losses for the foreseeable future. If we do 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, we may never become profitable. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods.

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

We 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. We currently do not have sufficient capital to conduct additional clinical trials for apatorsen without a strategic partner, raising additional funds or completing a strategic transaction committed to the development of apatorsen. We are currently undertaking efforts to identify a third party to develop and, if approved, commercialize apatorsen. If we identify such a third party by August 17, 2017 and our pending acquisition is completed, our 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. We cannot give any assurance that we 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 we do, that any consideration will ever be received by the combined company or distributed to our stockholders. If we are 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 we are 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.

Our 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 we have 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 we are 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 our business.

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

To date, we have financed our operations primarily through the sale of our equity securities and from payments we received pursuant to the Collaboration Agreement with Teva. In April 2015, our Collaboration Agreement with Teva was terminated, and we will not receive any future payments from Teva. We believe that our existing capital resources and interest on such resources will be sufficient to meet our 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, we change our development plans or elect to further develop apatorsen, cannot find third-party collaborators to fund further development of apatorsen, our trials proceed slower or take longer than expected to complete, we acquire rights to new product candidates, do not successfully defend litigation or engage in commercialization and product launch activities, we will need additional capital sooner than we expect. Our future capital requirements will depend on many factors, including, without limitation:

- the timing of completion of the pending merger with Achieve;
- whether we modify our development program for apatorsen, including terminating and starting new trials;
- whether we are able to enter into additional third-party collaborative partnerships to develop and/or commercialize apatorsen on terms that are acceptable to us, or at all;
- the scope and results of our clinical trials;
- our ability to forecast the cost of our ongoing development activities;
- whether we experience delays in our 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 we engage in commercialization and product launch activities.

If we are unable to raise funds on acceptable terms when it becomes necessary to do so, we 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 we require it could have a material adverse effect on our business.

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

We are 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 we are not able to do so by August 17, 2017 and the pending merger is completed, the CVRs will be terminated and the CVR holders will not realize any value from the CVRs.

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

We, 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 we 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 our 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 our clinical trial design and our interpretation of data, and may require us to conduct additional clinical trials to demonstrate the efficacy of apatorsen.

We 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.

We rely on third parties to manufacture and supply apatorsen and other agents used in our 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 us of potential product revenue.

We do not own or operate manufacturing facilities, and we depend on third-party contract manufacturers for production of apatorsen and rely on other companies and their manufacturers for other agents used in all of our clinical trials. We lack the resources and the capability to manufacture apatorsen ourselves. To date, our 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 our product candidates have been manufactured for us 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, we or any pharmaceutical partner that has licensed apatorsen, if any, may need to manufacture apatorsen in commercial quantities. We cannot provide assurance that the third-party manufacturers with which we have 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 us, 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. We have experienced manufacturing quality issues resulting in an unusable lot of one of our product candidates in the past. Any performance failure on the part of our contract manufacturers could delay clinical development or regulatory approval or commercialization of apatorsen, depriving us 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 we 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 our 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. We expect to continue to depend on third-party contract manufacturers for the foreseeable future.

Apatorsen requires precise, high-quality manufacturing. Any of our 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 our 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.

We also rely on third parties for the provision of other agents used in our clinical trials, and in some circumstances these agents are provided to us at no cost. We have no assurance that these third-parties will continue to provide their products to us at no cost.

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

The life sciences industry is highly competitive, and we face 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. We are 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 we expect 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 our 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 we may develop in the future is likely to face competition from other drugs and therapies. Many of our competitors have significantly greater financial, manufacturing, marketing and drug development resources than we do. 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 we do. 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 ours. If our competitors market products that are more effective, safer or less expensive than our future product candidates, if any, or that reach the market sooner than our future product candidates, if any, we 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 our costs. The failure of apatorsen to work in combination with these new therapies would have an adverse effect on our 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 our costs will be increased. If these clinical trials generate safety concerns or lack of efficacy, our business would be adversely affected.

We rely, in part, on third parties to conduct our clinical trial 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 our product development strategies, we rely on third parties, such as collaborators, contract research organizations, medical institutions, clinical investigators and contract laboratories, to conduct clinical trials of apatorsen. Although we rely on third parties to conduct our clinical trials, we are responsible for ensuring that each of our clinical trials is conducted in accordance with our development plan and protocol. Moreover, regulatory agencies require us 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. Our reliance on third parties does not relieve us of these responsibilities and requirements. If the third parties conducting our 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, we may need to enter into new arrangements with alternative third parties and our 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 our clinical trials to fail to meet regulatory requirements, which may require us to repeat our clinical trials.

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 our clinical trials have advanced stages of cancer, we expect that additional adverse events, including serious adverse events, will occur.

Undesirable side effects caused by apatorsen could cause us 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 we or others later identify undesirable side effects caused by the product:

- any ongoing clinical trial may be terminated and further product development ceased;
- regulatory authorities may withdraw their approval of 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
- our 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. Historic 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 we were to be successfully sued related to our products or operations, we could face substantial liabilities that may exceed our resources.

We may be held liable if any of our 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. We currently maintain 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 our clinical trials consistent with industry standards. When necessary for our products, we intend 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 our products. If we were to be sued for any injury caused by or associated with our products or operations, the litigation could consume substantial time and attention of our management, and the resulting liability could exceed our 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. We believe 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 our apatorsen, both in absolute terms and relative to alternative treatments; and
- sequencing of available products.

If our future product candidates fail to achieve market acceptance, we 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, we 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 us to realize an appropriate return on our 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 our future products and the future revenues we may expect to receive from those products. In addition, we are 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 our business.

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

We currently do not have internal discovery capabilities and depend on pharmaceutical and biotechnology companies and other researchers to sell or license products or product candidates to us. If we are unable to complete the merger with Achieve, we may be required to identify alternative sources of product candidates.

To successfully build a product pipeline, we 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. We compete for partnering arrangements and license agreements with pharmaceutical and biotechnology companies and academic research institutions. Our competitors may have stronger relationships with third parties with whom we are interested in collaborating and/or may have more established histories of developing and commercializing products. As a result, our competitors may have a

competitive advantage in entering into partnering arrangements with such third parties. In addition, even if we find promising product candidates, and generate interest in a partnering or strategic arrangement to acquire such product candidates, we may not be able to acquire rights to additional product candidates or approved products on terms that we find acceptable, if at all. If we fail to acquire and develop product candidates from others, we may be unable to grow our business.

We expect that any product candidate that we acquire 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, we can make no assurance that we would be capable of economically producing the product or that the product would be commercially successful.

We may be adversely affected if our controls over financial reporting fail or are circumvented.

We regularly review and update our internal controls, disclosure controls and procedures, and corporate governance policies. In addition, although not required, we have chosen under the Sarbanes Oxley Act of 2002 to report annually on our internal control over financial reporting. If it were to be determined that our internal control over financial reporting is not effective, such shortcoming could have an adverse effect on our business and financial results and the price of our common stock could be negatively affected. This reporting requirement could also make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and we 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 our 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 our financial statements, which ultimately could negatively affect the market price of our shares, increase the volatility of our stock price and adversely affect our ability to raise additional funding. The effect of these events could also make it more difficult for us to attract and retain qualified persons to serve on our Board and our Board committees and as executive officers.

Risks Related to Our Intellectual Property

Our proprietary rights may not adequately protect apatorsen.

Our commercial success will depend in part on our ability to obtain patents and/or regulatory exclusivity and maintain adequate protection for apatorsen in the United States and other countries. We or a collaboration partner, if any, will be able to protect our 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.

We and/or a collaboration partner, if any, may apply for additional patents covering apatorsen as we deem appropriate. We or our collaboration partner, if any, may, however, fail to apply for patents on important technologies or apatorsen in a timely fashion, if at all. Our existing patents and any future patents we or our collaboration partner, if any, obtain may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products and technologies. In addition, we do not always control the patent prosecution of subject matter that we license from others. Accordingly, we are sometimes unable to exercise a significant degree of control over such intellectual property as we would over our 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 our 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 our 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. We cannot guarantee that:

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

- any patents issued to us or our licensors and collaboration partners will provide us with any competitive advantages, or will not be challenged by third parties; and
- we will develop additional proprietary technologies that are patentable, or the patents of others will not have an adverse effect on our 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. Our ability or the ability of a collaboration partner, if any, to maintain and solidify our proprietary position for apatorsen will depend on our success in obtaining effective claims and enforcing those claims once granted. Our issued patents and those that may issue in the future, or those licensed to us or collaboration partners, if any, may be challenged, invalidated, unenforceable or circumvented, and the rights granted under any issued patents may not provide us 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.

We also rely on trade secrets to protect some of our technology, especially where it is believed that patent protection is not appropriate or obtainable. However, trade secrets are difficult to maintain. While we use reasonable efforts to protect our trade secrets, our or our collaboration partners' employees, consultants, contractors or scientific and other advisors may unintentionally or willfully disclose our 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 our competitors independently develop equivalent knowledge, methods and know-how, we would not be able to assert our trade secrets against them and our business could be harmed.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on apatorsen, when and if we have any, in every jurisdiction would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we or our licensors have not obtained patent protection to develop their own products. These products may compete with our products, when and if we have any, and may not be covered by any of our or our 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 us to stop the infringement of our patents. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

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

Inventions discovered under research, material transfer or other such collaborative agreements may become jointly owned by us 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 our business if we were not able to protect or license rights to these inventions. In addition, our research collaborators and scientific advisors generally have contractual rights to publish our data and other proprietary information, subject to our prior review. Publications by our research collaborators and scientific advisors containing such information, either with our permission or in contravention of the terms of their agreements with us, may impair our ability to obtain patent protection or protect our proprietary information, which could significantly harm our business.

The intellectual property protection for apatorsen depends on third parties.

We have exclusively licensed from UBC certain issued patents and pending patent applications covering the respective antisense sequences underlying apatorsen and its commercialization and use, and we have 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. We have also received a sublicense from Ionis under certain third-party patent portfolios directed to such modifications.

The patents and pending patent applications underlying our licenses do not fully cover all potential modifications and uses of apatorsen. In the case of patents and patent applications licensed from Ionis, we do not have and have not had any control over the filing, prosecution or enforcement of these patents or patent applications. We 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. We also cannot be assured that our licensors or their respective licensing partners will agree to enforce any such patent rights at our request or devote sufficient efforts to attain a desirable result. Any failure by our 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 our financial condition and results of operation.

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

We license the development and commercialization rights for apatorsen. Under such licenses, we are 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 we fail to comply with any of these obligations or otherwise breach these agreements, our licensors may have the right to terminate the license in whole or in part or to terminate the exclusive nature of the license. We 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 our financial condition and results of operations. In addition, certain of our license agreements with UBC eliminate our ability to obtain money damages in respect of certain claims against UBC.

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

The patents for apatorsen have varying expiration dates and, when these patents expire, we may be subject to increased competition and we may not be able to recover our 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. We 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, we may not be able to qualify the product candidate or obtain the exclusive time period.

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

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

If we choose to go to court to stop someone else from using the inventions claimed in our patents or our 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 we were 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 we do 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 our 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 unenforceability of these patents is upheld, the court will narrow the scope of our claim or will refuse to stop the other party on the grounds that such other party's activities do not infringe our rights.

If we wish to use the technology or compound claimed in issued and unexpired patents owned by others, we 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 we infringed its patents. The failure to obtain a license to technology or the failure to challenge an issued patent that we may require to discover, develop or commercialize apatorsen may have a material adverse effect on us.

If a third party asserts that we infringed its patents or other proprietary rights, we could face a number of risks that could seriously harm our 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 our business;
- substantial damages for past infringement, which we may have to pay if a court determines that apatorsen or our technologies infringe a competitor's patent or other proprietary rights;
- a court prohibiting us from selling or licensing our technologies or future drugs unless the third party licenses its patents or other proprietary rights to us on commercially reasonable terms, which it is not required to do; and
- if a license is available from a third party, we may have to pay substantial royalties or lump-sum payments or grant cross licenses to our 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 us, 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 we are sued for patent infringement, we 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 we 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, we cannot be certain that others have not filed patent applications for technology covered by our licensors' issued patents or our pending applications or our licensors' pending applications, or that we or our licensors were the first to invent the technology.

Patent applications filed by third parties that cover technology similar to ours may have priority over our or our licensors' patent applications and could further require us to obtain rights to issued patents covering such technologies. If another party files a U.S. patent application on an invention similar to ours, we 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 our U.S. patent position with respect to such inventions. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we 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 our ability to raise the funds necessary to continue our operations. We cannot predict whether third parties will assert these claims against us or against the licensors of technology licensed to us, or whether those claims will harm our business. If we are forced to defend against these claims, whether they are with or without any merit and whether they are resolved in favor of or against us or our licensors, we may face costly litigation and diversion of management's attention and resources. As a result of these disputes, we may have to develop costly non-infringing technology, or enter into licensing agreements. These agreements, if necessary, may be unavailable on terms acceptable to us, if at all, which could seriously harm our business or financial condition.

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

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

Risks Related to our Common Stock

The price for our common stock is volatile.

The market prices for our 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, we experienced significant decreases in our stock price. Future announcements concerning us, our pending merger, the results of our clinical trials or our competitors may also have a significant effect on the market price of our 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 our common stock.

An increase in the market price of our common stock, which is uncertain and unpredictable, may be the sole source of gain from an investment in our common stock. An investment in our common stock may not be appropriate for investors who require dividend income. We have never declared or paid cash dividends on our capital stock and do not anticipate paying any cash dividends on our capital stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for stockholders for the foreseeable future. Accordingly, an investment in our 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 our common stock does not meet the requirements for continued listing on The NASDAQ Capital Market. If we fail to regain compliance with the minimum listing requirements, our common stock will be subject to delisting. Our ability to complete the pending merger or publicly or privately sell equity securities and the liquidity of our common stock could be adversely affected if our 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, we received a notice from the NASDAQ Listing Qualifications Department notifying us that for 30 consecutive trading days, the bid price of our common stock had closed below the minimum $1.00 per share requirement. In accordance with The NASDAQ Capital Market's listing rules, we were 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 our 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, we received a second notice from the NASDAQ Listing Qualifications Department notifying us that we had not regained compliance with the bid price requirement during the 180 calendar days, and that we may be eligible for an additional 180-day compliance period if we meet 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 we intend to regain compliance with the bid price requirement during the second 180-day compliance period, by effecting a reverse stock split if necessary. We believe we are eligible for the additional 180-day compliance period, and intend to meet the bid price requirement by effecting a reverse stock split upon the completion of our pending merger.

If we fail to regain compliance, our common stock will be subject to delisting. Delisting from The NASDAQ Capital Market could adversely affect our ability to raise additional financing through the public or private sale of equity securities, would significantly affect the ability of investors to trade our securities and would negatively affect the value and liquidity of our 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 us 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.

We are 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 us because we recently announced a pending merger with Achieve. Additionally, our stock price and those of other biotechnology and biopharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business. Any stockholder litigation challenging the pending merger may also delay completion of the merger in the expected timeframe or altogether.

If we raise additional capital, the terms of the financing transactions may cause dilution to existing stockholders or contain terms that are not favorable to us.

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

Risks Related to Our Industry

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

We or a collaborator, if any, will need to complete significant additional clinical trials before we 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 our phase 3 clinical trials for custirsen and all but one of our 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 us from obtaining approvals for the commercialization of some or all of our 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. We are not permitted to market our product candidate in the United States until we receive approval of an application for market approval from regulatory agencies. We have not submitted an application for or received marketing approval for 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 us 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 we or a collaborator, if any, could encounter problems that could cause us 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 our 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 we or a collaborator, if any, obtains regulatory approvals for apatorsen, the terms of approvals and ongoing regulation of apatorsen may limit how we or a collaborator, if any, manufactures and markets apatorsen, which could materially affect our ability to generate revenue.

If apatorsen was approved, it and its manufacturer will be subject to continual review. Any regulatory approval that we 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 our 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, we 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. We 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 we are not able to maintain regulatory compliance, we would likely not be permitted to market apatorsen and we may not achieve or sustain profitability.

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

In the United States and elsewhere, our 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. We 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 us 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, our 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, we 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, our 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 we expect 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.

We anticipate 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 our 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 we receive for apatorsen in the future, which would limit our 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 us from marketing our product candidates abroad.

We 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, we or a collaborator, if any, must obtain separate regulatory approvals. We have 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. We or a collaborator, if any, may not obtain non-North American regulatory approvals on a timely basis, if at all. We 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.

Item 6. Exhibits

Exhibit Number	Description
2.1	Amendment No. 2 to Agreement and Plan of Merger and Reorganization, dated July 19, 2017, by and among OncoGenex Pharmaceuticals, Inc., Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc., and Achieve Life Science, Inc. (Incorporated by referenced to Exhibit 10.1 to the Current Report on Form 8-K filed on July 19, 2017)
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
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

* The certifications attached as Exhibits 32.1 and 32.2 accompany this Quarterly Report on Form 10-Q pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ONCOGENEX PHARMACEUTICALS, INC.

Date: July 31, 2017

By: /s/ Scott Cormack
Scott Cormack
President and Chief Executive Officer

Date: July 31, 2017

By: /s/ John Bencich
John Bencich
Chief Financial Officer

EXHIBIT INDEX

Exhibit Number	Description
2.1	Amendment No. 2 to Agreement and Plan of Merger and Reorganization, dated July 19, 2017, by and among OncoGenex Pharmaceuticals, Inc., Ash Acquisition Sub, Inc., Ash Acquisition Sub 2, Inc., and Achieve Life Science, Inc. (Incorporated by referenced to Exhibit 10.1 to the Current Report on Form 8-K filed on July 19, 2017)
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
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

* The certifications attached as Exhibits 32.1 and 32.2 accompany this Quarterly Report on Form 10-Q pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

Exhibit 31.1

Certification Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934

I, Scott Cormack, certify that:

1. I have reviewed this quarterly report on Form 10-Q of OncoGenex Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 31, 2017

/s/ Scott Cormack
Scott Cormack
President and Chief Executive Officer

Exhibit 31.2

Certification Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934

I, John Bencich, certify that:

1. I have reviewed this quarterly report on Form 10-Q of OncoGenex Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 31, 2017

/s/ John Bencich
John Bencich
Chief Financial Officer

Exhibit 32.1

Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

I, Scott Cormack, President and Chief Executive Officer of OncoGenex Pharmaceuticals, Inc. (the "Company"), certify, pursuant to Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, that:

(1) the Quarterly Report on Form 10-Q of the Company for the three and six months ended June 30, 2017 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 780(d)); and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: July 31, 2017

/s/ Scott Cormack
Scott Cormack
President and Chief Executive Officer

Exhibit 32.2

Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

I, John Bencich, Chief Financial Officer of OncoGenex Pharmaceuticals, Inc. (the "Company"), certify, pursuant to Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, that:

(1) the Quarterly Report on Form 10-Q of the Company for the three and six months ended June 30, 2017 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 780(d)); and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: July 31, 2017

/s/ John Bencich
John Bencich
Chief Financial Officer