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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549**

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**FORM S-3  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

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**ACHIEVE LIFE SCIENCES, INC.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**95-4343413**  
(I.R.S. Employer  
Identification No.)

**1040 West Georgia Street, Suite 1030  
Vancouver, BC V6E 4H1  
(604) 210-2217**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**John Bencich  
Chief Executive Officer  
Achieve Life Sciences, Inc.  
1040 West Georgia Street, Suite 1030  
Vancouver, BC V6E 4H1  
(604) 210-2217**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Please send copies of all communications to:*

**Alan Smith, Esq.  
Amanda Rose, Esq.  
Fenwick & West LLP  
1191 Second Avenue, Floor 10  
Seattle, WA 98101  
(206) 389-4510**

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**Approximate date of commencement of proposed sale to the public:** As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

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

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

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

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 definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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 to Section 7(a)(2)(B) of the Securities Act.

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**CALCULATION OF REGISTRATION FEE**

Title of Each Class of Securities to be Registered(1)	Amount to be Registered(1)(2)	Proposed Maximum Offering Price Per Security(3)	Proposed Maximum Aggregate Offering Price(3)	Amount of Registration Fee(4)
Common stock, \$0.001 par value per share				
Preferred stock, \$0.001 par value per share				
Debt securities				
Warrants				
Subscription rights				
Units				
<b>Total</b>			<b>\$ 100,000,000</b>	<b>\$ 9,270</b>

- (1) There is being registered hereunder an indeterminate number of shares of (a) common stock, (b) preferred stock, (c) debt securities, (d) warrants to purchase common stock, preferred stock or debt securities of the Registrant, (e) subscription rights to purchase common stock, preferred stock or debt securities of the Registrant, and (f) units, consisting of some or all of these securities in any combination, as may be sold from time to time by the Registrant. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. There is also being registered hereunder an indeterminate number of shares of common stock, preferred stock and debt securities as shall be issuable upon conversion, exchange or exercise of any securities that provide for such issuance. In no event will the aggregate offering price of all types of securities issued by the Registrant pursuant to this registration statement exceed \$100,000,000.
- (2) Pursuant to Rule 416(a), this registration statement also covers any additional securities that may be offered or issued in connection with any stock split, stock dividend or similar transaction.
- (3) The proposed maximum offering price per share and proposed maximum aggregate offering price for each type of security will be determined from time to time by the Registrant in connection with the issuance by the Registrant of the securities registered hereunder.
- (4) Calculated pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Pursuant to Rule 415(a)(6) under the Securities Act, the Registrant hereby offsets the total registration fee due under this Registration Statement by the amount of the filing fee associated with the unsold securities from the Registrant's Form S-3 Registration Statement, filed with the Securities and Exchange Commission, or the SEC, on December 26, 2018 (SEC File No. 333-229019), and declared effective by the SEC on February 11, 2019, or the Prior Registration Statement, which included \$100,000,000 of shares of (a) common stock, (b) preferred stock, (c) senior debt securities, (d) subordinated debt securities, (e) warrants to purchase common stock or preferred stock of the Registrant, (f) subscription rights and (d) units, consisting of some or all of these securities in any combination, as may be sold from time to time by the Registrant, or collectively, the Shelf Securities, of which \$81,106,107 of the Shelf Securities remain unsold as the date of filing of this Registration Statement. The Registrant has determined to include in this Registration Statement the unsold Shelf Securities under the Prior Registration Statement having an aggregate offering price of \$81,016,107, or the Unsold Securities. The associated filing fee of \$9,819.15 for the Unsold Securities under the Prior Registration Statement is hereby used to offset the current registration fee due, resulting in no additional registration fee due in connection with the filing of this registration statement. To the extent that, after the filing date hereof and prior to the effectiveness of this Registration Statement, the Registrant sells any Unsold Securities pursuant to the Prior Registration Statement, the Registrant will identify in a pre-effective amendment to this Registration Statement the updated amount of Unsold Securities from the Prior Registration Statement to be included in this Registration Statement pursuant to Rule 415(a)(6) under the Securities Act and the updated amount of securities to be registered on this Registration Statement. Pursuant to Rule 415(a)(6) under the Securities Act, the offering of the Unsold Securities under the Prior Registration Statement will be deemed terminated as of the date of effectiveness of this Registration Statement.

## EXPLANATORY NOTE

This registration statement contains two prospectuses:

- a base prospectus, which covers the offering, issuance and sale by us of our common stock, preferred stock, debt securities, warrants to purchase our common stock, preferred stock or debt securities, subscription rights to purchase our common stock, preferred stock or debt securities and/or units consisting of some or all of these securities; and
- a sales agreement prospectus covering the offering, issuance and sale by us of up to a maximum aggregate offering price of \$25.0 million of our common stock that may be issued and sold under a sales agreement dated December 21, 2021 with Virtu Americas LLC.

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered pursuant to the base prospectus will be specified in a prospectus supplement to the base prospectus. The sales agreement prospectus immediately follows the base prospectus.

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

**SUBJECT TO COMPLETION, DATED DECEMBER 21, 2021**

**PROSPECTUS**

**\$100,000,000**



**Common Stock, Preferred Stock,  
Debt Securities, Warrants, Subscription Rights and Units**

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From time to time, we may offer up to \$100,000,000 aggregate amount of shares of our common stock or preferred stock, debt securities, warrants to purchase our common stock, preferred stock or debt securities, subscription rights to purchase our common stock, preferred stock or debt securities and/or units consisting of some or all of these securities, in any combination, together or separately, in one or more offerings, in amounts, at prices and on the terms that we will determine at the time of the offering and which will be set forth in a prospectus supplement and any related free writing prospectus. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. The total amount of these securities will have an initial aggregate offering price of up to \$100,000,000.

You should read this prospectus, the information incorporated, or deemed to be incorporated, by reference in this prospectus, and any applicable prospectus supplement and related free writing prospectus carefully before you invest.

Our common stock is traded on The Nasdaq Capital Market under the symbol "ACHV." On December 20, 2021 the last reported sales price for our common stock was \$7.39 per share. None of the other securities we may offer are currently traded on any securities exchange. The applicable prospectus supplement and any related free writing prospectus will contain information, where applicable, as to any other listing on The Nasdaq Capital Market or any securities market or exchange of the securities covered by the prospectus supplement and any related free writing prospectus.

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**Investing in our securities involves a high degree of risk. Before making any investment in these securities, you should consider carefully the risks and uncertainties in the section entitled "[Risk Factors](#)" beginning on page 4 of this prospectus.**

Common stock, preferred stock, debt securities, warrants, subscription rights and/or units may be sold by us to or through underwriters or dealers, directly to purchasers or through agents designated from time to time. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this

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prospectus. If any underwriters, dealers or agents are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such underwriters or agents and any applicable fees, discounts or commissions, details regarding over-allotment options, if any, and the net proceeds to us will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense. The securities are not being offered in any jurisdiction where the offer is not permitted.**

The date of this prospectus is \_\_\_\_\_, 2021

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the United States Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, from time to time, we may sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$100,000,000.

We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities under this shelf registration process, we will provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement; provided that, if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus or any prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement. You should read both this prospectus and any prospectus supplement together with additional information described under the heading “Where You Can Find More Information.”

Neither we, nor any agent, underwriter or dealer have authorized anyone to give you any information or to make any representation other than the information and representations contained in or incorporated by reference into this prospectus or any applicable prospectus supplement. We and any agent, underwriter or dealer take no responsibility for, and can provide no assurance as to the reliability of, any other information others may give you. You may not imply from the delivery of this prospectus and any applicable prospectus supplement, nor from a sale made under this prospectus and any applicable prospectus supplement, that our affairs are unchanged since the date of this prospectus and any applicable prospectus supplement or that the information contained in any document incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus and any applicable prospectus supplement or any sale of a security. This prospectus and any applicable prospectus supplement may only be used where it is legal to sell the securities.

In this prospectus, unless the context otherwise requires, the terms “Achieve,” the “Company,” “we,” “us,” and “our” refer to Achieve Life Sciences, Inc. together with its subsidiaries, taken as a whole.



## PROSPECTUS SUMMARY

*This summary highlights information contained in other parts of this prospectus or incorporated by reference in this prospectus from our Annual Report on Form 10-K for the year ended December 31, 2020, and our other filings with the SEC listed below under the heading "Incorporation of Information by Reference." This summary may not contain all the information that you should consider before investing in securities. You should read the entire prospectus and the information incorporated by reference in this prospectus carefully, including "Risk Factors" and the financial data and related notes and other information incorporated by reference, before making an investment decision. See "Cautionary Note Regarding Forward-Looking Statements."*

### **Our Company**

We are a clinical-stage pharmaceutical company committed to the global development and commercialization of cytisinicline for smoking cessation and nicotine addiction. Our primary focus is to address the global smoking and nicotine addiction epidemic, which is a leading cause of preventable death and is responsible for more than eight million deaths annually worldwide. We may expand our focus to address other methods of nicotine addiction such as e-cigarettes/vaping. Our management team has significant experience in growing emerging companies focused on the development of under-utilized pharmaceutical compounds to meet unmet medical needs. We intend to use this experience to develop and ultimately commercialize cytisinicline either directly or via strategic collaborations.

### **The Securities We May Offer**

With this prospectus, we may offer common stock, preferred stock, debt securities, warrants to purchase our common stock, preferred stock or debt securities, subscription rights to purchase our common stock, preferred stock or debt securities, and/or units consisting of some or all of these securities in any combination. The aggregate offering price of securities that we offer with this prospectus will not exceed \$100,000,000. Each time we offer securities with this prospectus, we will provide offerees with a prospectus supplement that will contain the specific terms of the securities being offered. The following is a summary of the securities we may offer with this prospectus.

#### *Common Stock*

We may offer shares of our common stock, par value \$0.001 per share.

#### *Preferred Stock*

We may offer shares of our preferred stock, par value \$0.001 per share, in one or more series. Our board of directors or a committee designated by the board will determine the dividend, voting, conversion and other rights of the series of shares of preferred stock being offered. Each series of preferred stock will be more fully described in the particular prospectus supplement that will accompany this prospectus, including redemption provisions, rights in the event of our liquidation, dissolution or the winding up, voting rights and rights to convert into common stock.

#### *Debt Securities*

We may offer general obligations, which may be secured or unsecured, senior or subordinated and convertible into shares of our common stock or preferred stock. In this prospectus, we refer to the senior debt securities and the subordinated debt securities together as the "debt securities." Our board of directors will determine the terms of each series of debt securities being offered.

We will issue the debt securities under an indenture between us and a trustee. In this document, we have summarized general features of the debt securities from the indenture. We encourage you to read the indenture, which is an exhibit to the registration statement of which this prospectus is a part.

#### *Warrants*

We may offer warrants for the purchase of debt securities, shares of preferred stock or shares of common stock. We may issue warrants independently or together with other securities. Our board of directors or a committee designated by our board of directors will determine the terms of the warrants.

*Subscription Rights*

We may offer subscription rights to purchase our common stock, preferred stock or debt securities. We may issue subscription rights independently or together with other securities. Our board of directors or a committee designated by our board of directors will determine the terms of the subscription rights.

*Units*

We may offer units consisting of some or all of the securities described above, in any combination, including common stock, preferred stock, warrants and/or debt securities. The terms of these units will be set forth in a prospectus supplement. The description of the terms of these units in the related prospectus supplement will not be complete. You should refer to the applicable form of unit and unit agreement for complete information with respect to these units.

\* \* \*

We were incorporated in California in October 1991 and subsequently reorganized as a Delaware corporation in March 1995. Our principal executive offices are located at 1040 West Georgia Street, Suite 1030, Vancouver, B.C. V6E 4H1, and our telephone number is (604) 210-2217.

## **RISK FACTORS**

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading "Risk Factors" in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus, including in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2021, and other documents we file with the SEC that are deemed incorporated by reference into this prospectus, which may be amended, supplemented, or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains or incorporates by reference “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 prospectus or in documents incorporated by reference into this prospectus. 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:

- our ability to continue as a going concern, our anticipated future capital requirements and the terms of any capital financing agreements;
- progress and preliminary and future results of any clinical trials;
- anticipated regulatory filings, requirements and future clinical trials;
- the effects of COVID-19 on our business and financial results;
- timing and amount of future contractual payments, product revenue and operating expenses; and
- market acceptance of our products and the estimated potential size of these markets.

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 the risk factors identified under the caption “Risk Factors” in this prospectus, as well as those identified under Item 1A. “Risk Factors” in our Quarterly Report on Form 10-Q, filed with the SEC on November 9, 2021.

You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus 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 prospectus 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.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, the exhibits filed therewith or the documents incorporated by reference therein. For further information about us and the securities offered hereby, reference is made to the registration statement, the exhibits filed therewith and the documents incorporated by reference therein. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and in each instance, we refer you to the copy of such contract or other document filed as an exhibit to the registration statement.

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act and are required to file annual, quarterly and other reports, proxy statements and other information with the SEC. The SEC maintains an Internet site (<http://www.sec.gov>) that contains reports, proxy and information statements, and various other information about us. You may also inspect the documents described herein at our principal executive offices, 1040 West Georgia Street, Suite 1030, Vancouver, B.C. V6E 4H1, during normal business hours.

Information about us is also available at our website at <https://achievelifesciences.com/>. However, the information on our website is not a part of this prospectus and is not incorporated by reference into this prospectus.

## INCORPORATION OF INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information that we file with the SEC, which means that we can disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus, and information we file later with the SEC will automatically update and supersede this information. A Current Report (or portion thereof) furnished, but not filed, on Form 8-K shall not be incorporated by reference into this prospectus. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14, or 15(d) of the Exchange Act prior to the termination of any offering of securities made by this prospectus:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2020, filed with the SEC on March 11, 2021;
- our Quarterly Report on Form 10-Q for the fiscal quarters ended March 31, 2021, filed with the SEC on [May 13, 2021](#); June 30, 2021, filed with the SEC on [August 12, 2021](#); and September 30, 2021, filed with the SEC on [November 9, 2021](#);
- our Current Reports on Form 8-K filed with the SEC on [March 15, 2021](#), [May 13, 2021](#) and [May 25, 2021](#) (excluding any information furnished in such report under Item 2.02); and
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on September 27, 1995 (paper filing) under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

We will furnish without charge to you, on written or oral request, a copy of any or all of such documents that has been incorporated herein by reference (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates). You may request a copy of these filings (other than an exhibit to a filing unless that exhibit is specifically incorporated by reference into that filing) at no cost by writing, telephoning or e-mailing us at the following address, telephone number or e-mail address:

Achieve Life Sciences, Inc.  
1040 West Georgia Street, Suite 1030  
Vancouver, BC V6E 4H1  
Tel: (604) 210-2217  
Attn: Sandra Thomson

Copies of these filings are also available through the “Investors” section of our website at [www.achievelifesciences.com](http://www.achievelifesciences.com). See the section of this prospectus entitled “Where You Can Find More Information” for information concerning how to obtain copies of materials that we file with the SEC.

Any statement contained in this prospectus, or in a document, all or a portion of which is incorporated by reference, shall be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, any prospectus supplement or any document incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not, except as so modified or superseded, constitute a part of this prospectus.

## USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds to us from the sale of our securities under this prospectus. Unless otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of securities under this prospectus for general corporate purposes, which may include funding research, clinical and process development and manufacturing of our product candidates, increasing our working capital, reducing indebtedness, acquisitions or investments in businesses, products or technologies that are complementary to our own and capital expenditures. We will set forth in the applicable prospectus supplement our intended use for the net proceeds received from the sale of any securities. Pending the application of the net proceeds, we intend to invest the net proceeds in short-term or long-term, investment-grade, interest-bearing securities.

## PLAN OF DISTRIBUTION

We may sell the securities covered by this prospectus to one or more underwriters for public offering and sale by them, and may also sell the securities to investors directly or through agents. We will name any underwriter or agent involved in the offer and sale of securities in the applicable prospectus supplement. We have reserved the right to sell or exchange securities directly to investors on our own behalf in jurisdictions where we are authorized to do so. We may distribute the securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We may directly solicit offers to purchase the securities being offered by this prospectus. We may also designate agents to solicit offers to purchase the securities from time to time. We will name in a prospectus supplement any agent involved in the offer or sale of our securities. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis, and a dealer will purchase securities as a principal for resale at varying prices to be determined by the dealer.

If we utilize an underwriter in the sale of the securities being offered by this prospectus, we will execute an underwriting agreement with the underwriter at the time of sale and we will provide the name of any underwriter in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we, or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions, or commissions from the underwriters or commissions from the purchasers for whom they may act as agent.

We will provide in the applicable prospectus supplement any compensation we pay to underwriters, dealers, or agents in connection with the offering of the securities, and any discounts, concessions, or commissions allowed by underwriters to participating dealers. Underwriters, dealers, and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. In compliance with the guidelines of the Financial Industry Regulatory Authority, Inc., or FINRA, the aggregate maximum discount, commission or agency fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer shall be fair and reasonable. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, and to reimburse them for certain expenses. We may grant underwriters who participate in the distribution of our securities under this prospectus an option to purchase additional securities in connection with the distribution.

The securities we offer under this prospectus may or may not be listed on a national securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include short sales of the securities, which involves the sale by persons participating in the offering of more securities than we sold to them. In these circumstances, these persons would cover such short positions by making purchases in the open market or by exercising their option to purchase additional securities. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

We may engage in at the market offerings into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. In addition, we may enter into derivative transactions with third parties, or



sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and they may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in these sale transactions will be an underwriter and will be identified in the applicable prospectus supplement. In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus. The financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

We will file a prospectus supplement to describe the terms of any offering of our securities covered by this prospectus. The prospectus supplement will disclose:

- the terms of the offer;
- the names of any underwriters, including any managing underwriters, as well as any dealers or agents;
- the purchase price of the securities from us;
- the net proceeds to us from the sale of the securities;
- any delayed delivery arrangements;
- the nature of the underwriters' obligations to take the securities;
- any options under which underwriters, if any, may purchase additional securities from us;
- any underwriting discounts, commissions or other items constituting underwriters' compensation, and any commissions paid to agents;
- in a subscription rights offering, whether we have engaged dealer-managers to facilitate the offering or subscription, including their name or names and compensation;
- any securities exchanges or markets on which such securities may be listed;
- any public offering price; and
- other facts material to the transaction.

We will bear all or substantially all of the costs, expenses and fees in connection with the registration of our securities under this prospectus. The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business.

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise or the securities are sold by us to an underwriter in a firm commitment underwritten offering. The applicable prospectus supplement may provide that the original issue date for your securities may be more than two scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the second business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle in more than two scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

## DESCRIPTION OF CAPITAL STOCK

### General

As of the date of this prospectus, our authorized capital stock consists of 155,000,000 shares. Those shares consist of 150,000,000 shares of common stock, par value of \$0.001 per share, and 5,000,000 shares of preferred stock, par value of \$0.001 per share. As of September 30, 2021, there were 9,453,542 shares of common stock issued and outstanding and no shares of preferred stock outstanding. In addition, as of September 30, 2021, we had reserved, pursuant to various plans, 579,485 shares of our common stock for issuance upon exercise of stock options and settlement of restricted stock units by our employees, directors, officers and consultants, of which 522,090 were reserved for outstanding options, 53,250 were reserved for outstanding restricted stock units and 4,145 were available for future equity grants.

As of September 30, 2021, there were warrants outstanding to purchase an aggregate of 1,243,656 shares of our common stock at a weighted-average exercise price of \$18.46 per share. Our common stock is traded on The Nasdaq Capital Market under the symbol “ACHV.”

The following description summarizes the material terms of our capital stock. For greater detail about our capital stock, please refer to our certificate of incorporation and bylaws.

### Common Stock

*Voting Rights.* For all matters submitted to a vote of stockholders, each holder of our common stock is entitled to one vote for each share registered in his or her name. Except as may be required by law and in connection with some significant actions, such as mergers, consolidations, or amendments to our certificate of incorporation that affect the rights of stockholders, holders of our common stock vote together as a single class. There is no cumulative voting in the election of our directors, which means that, subject to any rights to elect directors that are granted to the holders of any class or series of preferred stock, a plurality of the votes cast at a meeting of stockholders at which a quorum is present is sufficient to elect a director.

*Liquidation.* In the event we are liquidated, dissolved or our affairs are wound up, after we pay or make adequate provision for all of our known debts and liabilities, each holder of our common stock will be entitled to share ratably in all assets that remain, subject to any rights that are granted to the holders of any class or series of preferred stock.

*Dividends.* Subject to preferential dividend rights of any other class or series of stock, the holders of shares of our common stock are entitled to receive dividends, including dividends of our stock, as and when declared by our board of directors, subject to any limitations imposed by law and to the rights of the holders, if any, of our preferred stock. We have never paid cash dividends on our common stock. We do not anticipate paying periodic cash dividends on our common stock for the foreseeable future. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our earnings, if any, capital requirements, operating and financial conditions and on such other factors as the board of directors deems relevant.

*Other Rights and Restrictions.* Subject to the preferential rights of any other class or series of stock, all shares of our common stock have equal dividend, distribution, liquidation and other rights, and have no preference, appraisal or exchange rights, except for any appraisal rights provided by Delaware law. Furthermore, holders of our common stock have no conversion, sinking fund or redemption rights, or preemptive rights to subscribe for any of our securities. Our certificate of incorporation and our bylaws do not restrict the ability of a holder of our common stock to transfer his or her shares of our common stock.

The rights, powers, preferences and privileges of holders of our common stock are subject to, and may be adversely affected by, the rights of holders of shares of any series of preferred stock which we may designate and issue in the future.

*Listing.* Our common stock is listed on The Nasdaq Capital Market under the symbol “ACHV.”

*Transfer Agent and Registrar.* The transfer agent for our common stock is American Stock Transfer & Trust Company, LLC.

## **Preferred Stock**

The following description of preferred stock and the description of the terms of any particular series of preferred stock that we choose to issue hereunder and that will be set forth in the related prospectus supplement are not complete. These descriptions are qualified in their entirety by reference to the certificate of designation relating to that series. The rights, preferences, privileges, and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to that series.

The board of directors has the authority, without stockholder approval, subject to limitations prescribed by law, to provide for the issuance of the shares of preferred stock in one or more series, and by filing a certificate pursuant to the applicable law of the State of Delaware, to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers, preferences, and rights of the shares of each series and the qualifications, limitations, or restrictions, including, but not limited to, the following:

- the number of shares constituting that series;
- dividend rights and rates;
- voting rights;
- conversion terms;
- rights and terms of redemption (including sinking fund provisions); and
- rights of the series in the event of liquidation, dissolution, or winding up.

All shares of preferred stock offered hereby will, when issued, be fully paid and nonassessable and will not have any preemptive or similar rights. Our board of directors could authorize the issuance of shares of preferred stock with terms and conditions that could have the effect of discouraging a takeover or other transaction that might involve a premium price for holders of the shares or which holders might believe to be in their best interests.

We will set forth in a prospectus supplement relating to the series of preferred stock being offered the following items:

- the title and stated value of the preferred stock;
- the number of shares of the preferred stock offered, the liquidation preference per share, and the offering price of the preferred stock;
- the dividend rate(s), period(s), and/or payment date(s) or method(s) of calculation applicable to the preferred stock;
- whether dividends are cumulative or non-cumulative and, if cumulative, the date from which dividends on the preferred stock will accumulate;
- the procedures for any auction and remarketing, if any, for the preferred stock;
- the provisions for a sinking fund, if any, for the preferred stock;
- the provision for redemption, if applicable, of the preferred stock;
- any listing of the preferred stock on any securities exchange;
- the terms and conditions, if applicable, upon which the preferred stock will be convertible into common stock, including the conversion price (or manner of calculation) and conversion period;
- voting rights, if any, of the preferred stock;
- a discussion of any material and/or special United States federal income tax considerations applicable to the preferred stock;

- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon the liquidation, dissolution, or winding up of our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the class or series of preferred stock as to dividend rights and rights upon liquidation, dissolution, or winding up of our affairs; and
- any other specific terms, preferences, rights, limitations, or restrictions of the preferred stock.

The transfer agent and registrar for any series of preferred stock will be set forth in the applicable prospectus supplement.

## DESCRIPTION OF DEBT SECURITIES

### General

The debt securities will be either our senior debt securities or our subordinated debt securities. We will issue our debt securities under one or more separate indentures between us and a trustee. Senior debt securities will be issued under a senior indenture and subordinated securities will be issued under a subordinated indenture. A copy of the form of each type of indenture has been filed as an exhibit to the registration statement of which this prospectus is a part. The indentures may be supplemented by one or more supplemental indentures. We refer to the senior indenture and the subordinated indenture, together with any supplemental indentures, as the “indentures” throughout the remainder of this prospectus.

We may offer under this prospectus up to an aggregate principal amount of \$100,000,000 in debt securities, or if debt securities are issued at a discount, or in a foreign currency, foreign currency units or composite currency, the principal amount as may be sold for an aggregate public offering price of up to \$100,000,000. Unless otherwise specified in the applicable prospectus supplement, the debt securities will represent our direct, unsecured obligations and will rank equally with all of our other unsecured indebtedness.

The indentures do not limit the amount of debt securities that we may issue. The indentures provide that debt securities may be issued up to the principal amount that we authorize from time to time. The senior debt securities will be secured or unsecured and will have the same rank as all of our other indebtedness that is not subordinated. The subordinated debt securities will be secured or unsecured and will be subordinated and junior to all senior indebtedness. The terms of the indentures do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations, financial condition or transactions involving us, but those provisions may be included in the documents that include the specific terms of the debt securities.

We may issue the debt securities in one or more separate series of senior debt securities and subordinated debt securities. The prospectus supplement relating to the particular series of debt securities being offered will specify the particular amounts, prices and terms of those debt securities. These terms may include:

- the title of the debt securities;
- any limit upon the aggregate principal amount of the debt securities;
- if other than United States dollars, the currency or currencies, including the euro and other composite currencies, in which payments on the debt securities will be payable and whether the holder may elect payment to be made in a different currency;
- the date or dates when payments on the principal must be made or the method of determining that date or dates;
- interest rates, and the dates from which interest, if any, will accrue, and the dates when interest is payable and the maturity;
- the right, if any, to extend the interest payment periods and the duration of the extensions;
- the places where payments may be made and the manner of payments;
- any mandatory or optional redemption provisions;
- any subordination provisions;
- the denominations in which debt securities will be issued;
- the terms applicable to any debt securities issued at a discount from their stated principal amount;
- the currency or currencies of payment of principal or interest and the period, if any, during which a holder may elect to pay in a currency other than the currency in which the debt securities are denominated;

- if the amount of payments of principal or interest is to be determined by reference to an index or formula, or based on a coin or currency other than that in which the debt securities are stated to be payable, the manner in which these amounts are determined and the calculation agent, if any;
- whether the debt securities will be secured or unsecured;
- whether the debt securities will be issued in the form of one or more global securities in temporary or definitive form;
- whether and on what terms we will pay additional amounts to holders of the debt securities that are not United States persons in respect of any tax, assessment or governmental charge withheld or deducted and, if so, whether and on what terms we will have the option to redeem the debt securities rather than pay the additional amounts;
- the certificates or forms required for the issuance of debt securities in definitive form;
- the trustees, depositaries, authenticating or paying agents, transfer agents or registrars of the debt securities;
- any deletions of, or changes or additions to, the events of default or covenants;
- conversion or exchange provisions, if any, including conversion or exchange prices or rates and adjustments to those prices and rates; and
- any other specific terms of the debt securities.

If any debt securities are sold for any foreign currency or currency unit or if any payments on the debt securities are payable in any foreign currency or currency unit, the prospectus supplement will contain any restrictions, elections, tax consequences, specific terms and other information with respect to the debt securities and the foreign currency or currency unit.

Some of the debt securities may be issued as original issue discount debt securities. Original issue discount securities may bear no interest or bear interest at below-market rates and will be sold at a discount below their stated principal amount and may bear no or below market interest. The applicable prospectus supplement will also contain any special tax, accounting or other information relating to original issue discount securities other kinds of debt securities that may be offered, including debt securities linked to an index or payable in currencies other than United States dollars.

#### **Senior Debt Securities**

Payment of the principal of, premium, if any, and interest on senior debt securities will rank on a parity with all of our other indebtedness that is not subordinated.

#### **Subordinated Debt Securities**

Payment of the principal of, premium, if any, and interest on subordinated debt securities will be junior in right of payment to the prior payment in full of all of our unsubordinated debt, including senior debt securities. We will state in the applicable prospectus supplement relating to any subordinated debt securities the subordination terms of the securities as well as the aggregate amount of outstanding debt, as of the most recent practicable date, that by its terms would be senior to the subordinated debt securities. We will also state in such prospectus supplement limitations, if any, on issuance of additional senior debt.

#### **Registrar and Paying Agent**

The debt securities may be presented for registration of transfer or for exchange at the corporate trust office of the security registrar or at any other office or agency that we maintain for those purposes. In addition, the debt securities may be presented for payment of principal, interest and any premium at the office of the paying agent or at any office or agency that we maintain for those purposes.

#### **Global Securities**

We may issue the debt securities of a series in whole or in part in the form of one or more global certificates that will be deposited with a depository we will identify in a prospectus supplement. We may issue global debt securities in either temporary or definitive form. We will describe the specific terms of the depository arrangement with respect to any series of debt securities in the prospectus supplement.

#### **Conversion or Exchange Rights**

Debt securities may be convertible into or exchangeable for shares of our common stock. The terms and conditions of conversion or exchange will be stated in the applicable prospectus supplement. The terms will include, among others, the following:

- the conversion or exchange price;
- the conversion or exchange period;
- provisions regarding the convertibility or exchangeability of the debt securities, including who may convert or exchange;
- events requiring adjustment to the conversion or exchange price;
- provisions affecting conversion or exchange in the event of our redemption of the debt securities; and
- any anti-dilution provisions, if applicable.

#### **Registered Global Securities**

Unless and until it is exchanged in whole or in part for debt securities in definitive registered form, a registered global security may not be transferred except as a whole:

- by the depository for that registered global security to its nominee;
- by a nominee of the depository to the depository or another nominee of the depository; or
- by the depository or its nominee to a successor of the depository or a nominee of the successor.

The prospectus supplement relating to a series of debt securities will describe the specific terms of the depository arrangement involving any portion of the series represented by a registered global security.

We anticipate that the following provisions will apply to all depository arrangements for debt securities:

- ownership of beneficial interests in a registered global security will be limited to persons that have accounts with the depository for that registered global security, these persons being referred to as “participants,” or persons that may hold interests through participants;
- upon the issuance of a registered global security, the depository for the registered global security will credit, on its book-entry registration and transfer system, the participants’ accounts with the respective principal amounts of the debt securities represented by the registered global security beneficially owned by the participants;
- any dealers, underwriters or agents participating in the distribution of the debt securities will designate the accounts to be credited; and
- ownership of beneficial interest in that registered global security will be shown on, and the transfer of that ownership interest will be effected only through, records maintained by the depository for that registered global security for interests of participants and on the records of participants for interests of persons holding through participants.

The laws of some states may require that specified purchasers of securities take physical delivery of the securities in definitive form. These laws may limit the ability of those persons to own, transfer or pledge beneficial interests in registered global securities.

So long as the depository for a registered global security, or its nominee, is the registered owner of that registered global security, the depository or that nominee will be considered the sole owner or holder of the debt securities represented by the registered global security for all purposes under the indenture. Except as stated below, owners of beneficial interests in a registered global security:

- will not be entitled to have the debt securities represented by a registered global security registered in their names;
- will not receive or be entitled to receive physical delivery of the debt securities in definitive form; and
- will not be considered the owners or holders of the debt securities under the indenture.

Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depository for the registered global security and, if the person is not a participant, on the procedures of a participant through which the person owns its interest, to exercise any rights of a holder under the indenture.

We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the indenture, the depository for the registered global security would authorize the participants holding the relevant beneficial interests to give or take the action, and the participants would authorize beneficial owners owning through the participants to give or take the action or would otherwise act upon the instructions of beneficial owners holding through them.

We will make payments of principal and premium, if any, and interest, if any, on debt securities represented by a registered global security registered in the name of a depository or its nominee to the depository or its nominee as the registered owners of the registered global security. None of us, the trustee or any other of our agents or agents of the trustee will be responsible or liable for any aspect of the records relating to, or payments made on account of, beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to the beneficial ownership interests.

We expect that the depository for any debt securities represented by a registered global security, upon receipt of any payments of principal and premium, if any, and interest, if any, in respect of the registered global security, will immediately credit participants' accounts with payments in amounts proportionate to their respective beneficial interests in the registered global security as shown on the records of the depository. We also expect that standing customer instructions and customary practices will govern payments by participants to owners of beneficial interests in the registered global security held through the participants, as is now the case with the securities held for the accounts of customers in bearer form or registered in "street name." We also expect that any of these payments will be the responsibility of the participants.

If the depository for any debt securities represented by a registered global security is at any time unwilling or unable to continue as depository or stops being a clearing agency registered under the Exchange Act, we will appoint an eligible successor depository. If we fail to appoint an eligible successor depository within 90 days, we will issue the debt securities in definitive form in exchange for the registered global security. In addition, we may at any time and in our sole discretion decide not to have any of the debt securities of a series represented by one or more registered global securities. In that event, we will issue debt securities of the series in a definitive form in exchange for all of the registered global securities representing the debt securities. The trustee will register any debt securities issued in definitive form in exchange for a registered global security in the name or names as the depository, based upon instructions from its participants, will instruct the trustee.

#### **Merger, Consolidation or Sale of Assets**

Under the terms of the indentures, we may consolidate or merge with another company, or sell, lease or convey all or substantially all our assets to another company, if:

- we are the continuing entity; or



- we are not the continuing entity, (ii) the successor entity is organized under the laws of the United States of America and expressly assumes all payments on all of the debt securities and the performance and observance of all the covenants and conditions of the applicable indenture, and (iii) the merger, sale of assets or other transaction must not cause a default on the debt securities and we must not already be in default.

#### Events of Default

Unless otherwise provided for in the prospectus supplement, the term “event of default,” when used in the indentures means any of the following:

- failure to pay interest for 30 days after the date payment is due and payable; however, if we extend an interest payment period under the terms of the debt securities, the extension will not be a failure to pay interest;
- failure to pay principal or premium, if any, on any debt security when due, either at maturity, upon any redemption, by declaration or otherwise;
- failure to perform other covenants for 60 days after notice that performance was required;
- certain events in bankruptcy, insolvency or reorganization of our company; or
- any other event of default provided in the applicable resolution of our board of directors or the supplemental indenture under which we issue a series of debt securities.

An event of default for a particular series of debt securities does not necessarily constitute an event of default for any other series of debt securities issued under an indenture. If an event of default relating to the payment of interest, principal or any sinking fund installment involving any series of debt securities has occurred and is continuing, the trustee or the holders of not less than 25% in aggregate principal amount of the debt securities of each affected series may declare the entire principal of all the debt securities of that series to be due and payable immediately.

If an event of default relating to the performance of other covenants occurs and is continuing for a period of 60 days after notice of that event of default, or if any other event of default occurs and is continuing involving all of the series of senior debt securities, then the trustee or the holders of not less than 25% in aggregate principal amount of all of the series of senior debt securities may declare the entire principal amount of all of the series of senior debt securities due and payable immediately.

Similarly, if an event of default relating to the performance of other covenants occurs and is continuing for a period of 60 days after notice, or if any other event of default occurs and is continuing involving all of the series of subordinated debt securities, then the trustee or the holders of not less than 25% in aggregate principal amount of all of the series of subordinated debt securities may declare the entire principal amount of all of the series of subordinated debt securities due and payable immediately.

If, however, the event of default relating to the performance of other covenants or any other event of default that has occurred and is continuing is for less than all of the series of senior debt securities or subordinated debt securities, then, the trustee or the holders of not less than 25% in aggregate principal amount of each affected series of the senior debt securities or the subordinated debt securities, as the case may be, may declare the entire principal amount of all debt securities of that affected series due and payable immediately. The holders of not less than a majority, or any applicable supermajority, in aggregate principal amount of the debt securities of a series may, after satisfying conditions, rescind and annul any of the above-described declarations and consequences involving the series.

If an event of default relating to events in bankruptcy, insolvency or reorganization occurs and is continuing, then the principal amount of all of the debt securities outstanding, and any accrued interest, will automatically become due and payable immediately, without any declaration or other act by the trustee or any holder.

Each indenture imposes limitations on suits brought by holders of debt securities against us. Except for actions for payment of overdue principal or interest, no holder of debt securities of any series may institute any action against us under each indenture unless:

- the holder has previously given to the trustee written notice of default and continuance of that default;
- the holders of at least 25% in principal amount of the outstanding debt securities of the affected series have requested that the trustee institute the action;
- the requesting holders have offered the trustee reasonable indemnity for expenses and liabilities that may be incurred by bringing the action;
- the trustee has not instituted the action within 60 days of the request; and
- the trustee has not received inconsistent direction by the holders of a majority in principal amount of the outstanding debt securities of the series.

We will be required to file annually with the trustee a certificate, signed by an officer of our company, stating whether or not the officer knows of any default by us in the performance, observance or fulfillment of any condition or covenant of an indenture.

#### **Discharge, Defeasance and Covenant Defeasance**

We can discharge or defease our obligations under the indentures as stated below or as provided in the prospectus supplement.

Unless otherwise provided in the applicable prospectus supplement, we may discharge obligations to holders of any series of debt securities that have not already been delivered to the trustee for cancellation and that have either become due and payable or are by their terms to become due and payable, or are scheduled for redemption, within one year. We may effect a discharge by irrevocably depositing with the trustee cash or United States government obligations, as trust funds, in an amount certified to be enough to pay when due, whether at maturity, upon redemption or otherwise, the principal of, premium, if any, and interest on the debt securities and any mandatory sinking fund payments.

Unless otherwise provided in the applicable prospectus supplement, we may also discharge any and all of our obligations to holders of any series of debt securities at any time, which we refer to as “defeasance.” We may also be released from the obligations imposed by any covenants of any outstanding series of debt securities and provisions of the indentures, and we may omit to comply with those covenants without creating an event of default under the trust declaration, which we refer to as “covenant defeasance.” We may effect defeasance and covenant defeasance only if, among other things:

- we irrevocably deposit with the trustee cash or United States government obligations, as trust funds, in an amount certified to be enough to pay at maturity, or upon redemption, the principal, premium, if any, and interest on all outstanding debt securities of the series;
- we deliver to the trustee an opinion of counsel from a nationally recognized law firm to the effect that (i) in the case of covenant defeasance, the holders of the series of debt securities will not recognize income, gain or loss for United States federal income tax purposes as a result of the defeasance, and will be subject to tax in the same manner and at the same times as if no covenant defeasance had occurred and (ii) in the case of defeasance, either we have received from, or there has been published by, the Internal Revenue Service a ruling or there has been a change in applicable United States federal income tax law, and based on that ruling or change, the holders of the series of debt securities will not recognize income, gain or loss for United States federal income tax purposes as a result of the defeasance and will be subject to tax in the same manner as if no defeasance had occurred; and
- in the case of subordinated debt securities, no event or condition will exist that, based on the subordination provisions applicable to the series, would prevent us from making payments of principal of, premium, if any, and interest on any of the applicable subordinated debt securities at the date of the irrevocable deposit referred to above or at any time during the period ending on the 91st day after the deposit date.

Although we may discharge or decrease our obligations under the indentures as described in the two preceding paragraphs, we may not avoid, among other things, our duty to register the transfer or exchange of any series of debt securities, to replace any temporary, mutilated, destroyed, lost or stolen series of debt securities or to maintain an office or agency in respect of any series of debt securities.

#### **Modification of the Indenture**

Except as provided in the prospectus supplement, each indenture provides that we and the trustee may enter into supplemental indentures without the consent of the holders of debt securities to:

- secure any debt securities;
- evidence the assumption by a successor corporation of our obligations and the conversion of any debt securities into the capital stock of that successor corporation, if the terms of those debt securities so provide;
- add covenants for the protection of the holders of debt securities;
- cure any ambiguity or correct any inconsistency in the indenture;
- establish the forms or terms of debt securities of any series; and
- evidence and provide for the acceptance of appointment by a successor trustee.

Each indenture also provides that we and the trustee may, with the consent of the holders of not less than a majority in aggregate principal amount of debt securities of all series of senior debt securities or of subordinated debt securities then outstanding and affected, voting as one class, add any provisions to, or change in any manner, eliminate or modify in any way the provisions of, the indenture or modify in any manner the rights of the holders of the debt securities. We and the trustee may not, however, without the consent of the holder of each outstanding debt security affected:

- extend the stated maturity of any debt security;
- reduce the principal amount or premium, if any;
- reduce the rate or extend the time of payment of interest;
- reduce any amount payable on redemption;
- change the currency in which the principal, unless otherwise provided for a series, premium, if any, or interest is payable;
- reduce the amount of the principal of any debt security issued with an original issue discount that is payable upon acceleration or provable in bankruptcy;
- impair the right to institute suit for the enforcement of any payment on any debt security when due; or
- reduce the percentage of holders of debt securities of any series whose consent is required for any modification of the indenture for any such series.

#### **Concerning the Trustee**

Each indenture provides that there may be more than one trustee under the indenture, each for one or more series of debt securities. If there are different trustees for different series of debt securities, each trustee will be a trustee of a trust under the indentures separate and apart from the trust administered by any other trustee under the indenture. Except as otherwise indicated in this prospectus or any prospectus supplement, any action permitted to be taken by a trustee may be taken by that trustee only on the one or more series of debt securities for which it is the trustee under the indenture. Any trustee under the indentures may resign or be removed from one or more series of debt securities. All payments of principal of, premium, if any, and interest on, and all registration, transfer, exchange, authentication and delivery of, the debt securities of a series may be effected by the trustee for that series at an office or agency designated by the trustee of that series.

If the trustee becomes a creditor of our company, each indenture places limitations on the right of the trustee to obtain payment of claims or to realize on property received in respect of any such claim as security or otherwise. The trustee may engage in other transactions. If it acquires any conflicting interest relating to any duties concerning the debt securities, however, it must eliminate the conflict or resign as trustee.

The holders of a majority in aggregate principal amount of any series of debt securities then outstanding will have the right to direct the time, method and place of conducting any proceeding for exercising any remedy available to the trustee concerning the applicable series of debt securities, so long as the direction:

- would not conflict with any rule of law or with the applicable indenture;
- would not be unduly prejudicial to the rights of another holder of the debt securities; and
- would not involve any trustee in personal liability.

Each indenture provides that if an event of default occurs, is not cured and is known to any trustee, the trustee must use the same degree of care as a prudent person would use in the conduct of his or her own affairs in the exercise of the trust's power. The trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any of the holders of the debt securities, unless they have offered to the trustee security and indemnity satisfactory to the trustee.

#### **No Individual Liability of Incorporators, Stockholders, Officers or Directors**

Each indenture provides that no incorporator and no past, present or future stockholder, officer or director of our company or any successor corporation in those capacities will have any individual liability for any of our obligations, covenants or agreements under the debt securities or such indenture.

#### **Governing Law**

The indentures and the debt securities will be governed by, and construed in accordance with, the laws of the State of New York.

## DESCRIPTION OF WARRANTS

### General

We may issue warrants for the purchase of our debt securities, preferred stock or common stock, or any combination thereof. Warrants may be issued independently or together with our debt securities, preferred stock, or common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants. The warrant agent will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. This summary of certain provisions of the warrants is not complete. For the terms of a particular series of warrants, you should refer to the prospectus supplement for that series of warrants and the warrant agreement for that particular series.

### Debt Warrants

The prospectus supplement relating to a particular issue of warrants to purchase debt securities will describe the terms of the debt warrants, including the following:

- the title of the debt warrants;
- the offering price for the debt warrants, if any;
- the aggregate number of the debt warrants;
- the designation and terms of the debt securities, including any conversion rights, purchasable upon exercise of the debt warrants;
- if applicable, the date from and after which the debt warrants and any debt securities issued with them will be separately transferable;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the dates on which the right to exercise the debt warrants will commence and expire;
- if applicable, the minimum or maximum amount of the debt warrants that may be exercised at any one time;
- whether the debt warrants represented by the debt warrant certificates or debt securities that may be issued upon exercise of the debt warrants will be issued in registered or bearer form;
- information with respect to book-entry procedures, if any;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the debt warrants, if any;
- the redemption or call provisions, if any, applicable to the debt warrants;
- any provisions with respect to the holder's right to require us to repurchase the debt warrants upon a change in control or similar event; and
- any additional terms of the debt warrants, including procedures, and limitations relating to the exchange, exercise, and settlement of the debt warrants.

Debt warrant certificates will be exchangeable for new debt warrant certificates of different denominations. Debt warrants may be exercised at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement. Prior to the exercise of their debt warrants, holders of debt warrants will not have any of the rights of holders of the debt securities purchasable upon exercise and will not be entitled to payment of principal or any premium, if any, or interest on the debt securities purchasable upon exercise.

## Equity Warrants

The prospectus supplement relating to a particular series of warrants to purchase our common stock or preferred stock will describe the terms of the warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of warrants;
- the designation and terms of the common stock or preferred stock that may be purchased upon exercise of the warrants;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock or preferred stock that may be purchased upon exercise of a warrant and the exercise price for the warrants;
- the dates on which the right to exercise the warrants shall commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the warrants, if any;
- the redemption or call provisions, if any, applicable to the warrants;
- any provisions with respect to a holder's right to require us to repurchase the warrants upon a change in control or similar event; and
- any additional terms of the warrants, including procedures, and limitations relating to the exchange, exercise, and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent, or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors, or any other matter; or
- exercise any rights as stockholders of Achieve.

## DESCRIPTION OF SUBSCRIPTION RIGHTS

We may issue subscription rights to purchase our common stock, preferred stock or debt securities. These subscription rights may be offered independently or together with any other security offered hereby and may or may not be transferable by the stockholder receiving the subscription rights in such offering. In connection with any offering of subscription rights, we may enter into a standby arrangement with one or more underwriters or other purchasers pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering.

The prospectus supplement relating to any subscription rights we offer, if any, will, to the extent applicable, include specific terms relating to the offering, including some or all of the following:

- the price, if any, for the subscription rights;
- the exercise price payable for our common stock, preferred stock or debt securities upon the exercise of the subscription rights;
- the number of subscription rights to be issued to each stockholder;
- the number and terms of our common stock, preferred stock or debt securities which may be purchased per each subscription right;
- the extent to which the subscription rights are transferable;
- any other terms of the subscription rights, including the terms, procedures and limitations relating to the exchange and exercise of the subscription rights;
- the date on which the right to exercise the subscription rights shall commence, and the date on which the subscription rights shall expire;
- the extent to which the subscription rights may include an over-subscription privilege with respect to unsubscribed securities or an over-allotment privilege to the extent the securities are fully subscribed; and
- if applicable, the material terms of any standby underwriting or purchase arrangement which may be entered into by us in connection with the offering of subscription rights.

The description in the applicable prospectus supplement of any subscription rights we offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable subscription rights certificate, which will be filed with the SEC if we offer subscription rights. We urge you to read the applicable subscription rights certificate and any applicable prospectus supplement in their entirety.

## DESCRIPTION OF UNITS

We may issue units consisting of some or all of the securities described above, in any combination, including common stock, preferred stock, warrants and/or debt securities. The terms of these units will be set forth in a prospectus supplement. The description of the terms of these units in the related prospectus supplement will not be complete. You should refer to the applicable form of unit and unit agreement for complete information with respect to these units.



**LEGAL MATTERS**

Fenwick & West LLP, Seattle, Washington, will issue an opinion about certain legal matters with respect to the securities. Any underwriters or agents will be advised about legal matters relating to any offering by their own counsel.

## **EXPERTS**

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2020 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.



**Common Stock**  
**Preferred Stock**  
**Debt Securities**  
**Warrants**  
**Subscription Rights**  
**Units**

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**PROSPECTUS**

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**, 2021**

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**The information in this prospectus supplement and the accompanying prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus supplement and accompanying prospectus are not an offer to sell these securities, and we are not soliciting an offer to buy these securities, in any jurisdiction where the offer or sale is not permitted.**

**SUBJECT TO COMPLETION, DATED DECEMBER 21, 2021**

**PROSPECTUS**



**Up to \$25,000,000  
Common Stock**

We have entered into an ATM Sales Agreement with Virtu Americas LLC, or Virtu, relating to shares of our common stock offered by this prospectus. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$25.0 million from time to time through Virtu acting as our agent.

Our common stock is traded on The Nasdaq Capital Market under the symbol "ACHV." The last reported sales price of our common stock on The Nasdaq Capital Market on December 20, 2021 was \$7.39 per share.

Sales of our common stock, if any, under this prospectus may be made in sales deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended, or the Securities Act. Virtu is not required to sell any specific number or dollar amount of securities, but will act as a sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Virtu and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to Virtu for sales of common stock sold pursuant to the sales agreement will be equal to up to 3.0% of the aggregate gross proceeds of any shares of common stock sold under the sales agreement. In connection with the sale of the common stock on our behalf, Virtu will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Virtu will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Virtu with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended, or the Exchange Act. See "Plan of Distribution" beginning on page 11 regarding the compensation to be paid to Virtu.

**Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties referenced under the heading "[Risk Factors](#)" on page 5 of this prospectus as well as those contained in any accompanying prospectus and any related free writing prospectus or prospectus supplement we prepare or authorize in connection with this offering, and in the other documents that are incorporated by reference into this prospectus or the accompanying prospectus.**

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Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

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The date of this prospectus is \_\_\_\_\_, 2021.

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, we may from time to time sell shares of our common stock. Under this prospectus, we may from time to time sell shares of our common stock having an aggregate offering price of up to \$25.0 million, at prices and on terms to be determined by market conditions at the time of the offering.

This prospectus describes the terms of this offering of common stock and also adds to and updates information contained in the documents incorporated by reference into this prospectus. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference into this prospectus that was filed with the SEC before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference into this prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

We have not, and Virtu has not, authorized anyone to provide you with any information other than that contained or incorporated by reference in this prospectus or any accompanying prospectus supplement or related free writing prospectus to which we have referred you. Neither we nor Virtu take any responsibility for, and can provide no assurance as to the reliability of, any other information others may give you. We are not, and Virtu is not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus, the accompanying base prospectus, the documents incorporated by reference herein and therein and any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus, the accompanying base prospectus, the documents incorporated by reference herein and therein and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision.

Unless the context requires otherwise, in this prospectus the terms “Achieve,” the “Company,” “we,” “us” and “our” refer to Achieve Life Sciences, Inc., together with its subsidiaries, taken as a whole. This prospectus and the information incorporated by reference herein and therein includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names are the property of their respective owners. We do not intend our use or display of other companies’ trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, these other companies.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and documents incorporated herein by reference contain “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, the impact of the COVID-19 pandemic on our business 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 prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. 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:

- our ability to continue as a going concern, our anticipated future capital requirements and the terms of any capital financing agreements;
- progress and preliminary and future results of any clinical trials;
- anticipated regulatory filings, requirements and future clinical trials;
- the effects of COVID-19 on our business and financial results;
- timing and plans for the expansion of our focus to address other methods of nicotine addiction;
- timing and amount of future contractual payments, product revenue and operating expenses; and
- market acceptance of our products and the estimated potential size of these markets.

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 the section entitled “Risk Factors,” as well as those discussed in our most recent Quarterly Report on Form 10-Q filed with the SEC on November 9, 2021 and other documents we have filed with the SEC that are incorporated herein by reference. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus 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 prospectus 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.



## PROSPECTUS SUMMARY

### Company Overview

We are a clinical-stage pharmaceutical company committed to the global development and commercialization of cytisinicline for smoking cessation and nicotine addiction. Our primary focus is to address the global smoking and nicotine addiction epidemic, which is a leading cause of preventable death and is responsible for more than eight million deaths annually worldwide. We may expand our focus to address other methods of nicotine addiction such as e-cigarettes/vaping. Our management team has significant experience in growing emerging companies focused on the development of under-utilized pharmaceutical compounds to meet unmet medical needs. We intend to use this experience to develop and ultimately commercialize cytisinicline either directly or via strategic collaborations.

### Company Information

We were incorporated in California in October 1991 and subsequently reorganized as a Delaware corporation in March 1995. Our principal executive offices are located at 1040 West Georgia Street, Suite 1030, Vancouver, B.C. V6E 4H1, and our telephone number is (604) 210-2217.

## THE OFFERING

<b>Common stock offered by us</b>	Shares of our common stock having an aggregate offering price of up to \$25 million.
<b>Common stock to be outstanding immediately after this offering</b>	Up to 12,836,491 (as more fully described in the notes following this table), assuming sales of 3,382,950 shares of our common stock in this offering at an offering price of \$7.39 per share, which was the last reported sale price of our common shares on The Nasdaq Capital Market on December 20, 2021. The actual number of shares issued will vary depending on the sales price under this offering.
<b>Plan of distribution</b>	“At the market offering” that may be made from time to time through Virtu, our sales agent. See “Plan of Distribution.”
<b>Use of proceeds</b>	We intend to use the net proceeds from this offering to fund ongoing cytosine development, other clinical research and development and for working capital and general corporate purposes. We may also use a portion of the net proceeds for the acquisition of, or investment in, technologies, intellectual property or businesses that complement our business, although we have no present commitments or agreements to this effect. See “Use of Proceeds.”
<b>Risk factors</b>	Investing in our common stock involves significant risks. See the disclosure under the heading “Risk Factors” of this prospectus and under similar headings in other documents incorporated by reference into this prospectus.
<b>The Nasdaq Capital Market symbol</b>	“ACHV”

The number of shares of our common stock to be outstanding immediately after this offering is based on 9,453,542 shares of our common stock outstanding as of September 30, 2021. The number of shares outstanding as of September 30, 2021 excludes:

- 522,090 shares of common stock issuable upon the exercise of options outstanding as of September 30, 2021, with a weighted average exercise price of \$26.11 per share;
- 53,250 shares of common stock subject to restricted stock units outstanding as of September 30, 2021;
- 1,243,656 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2021, with a weighted average exercise price of \$18.46 per share; and
- 4,145 shares of common stock reserved for future issuance under our equity incentive plans as of September 30, 2021.

Except as otherwise indicated all information in this prospectus assumes no exercise of outstanding options or warrants, no vesting of restricted stock units, and no exercise of the underwriters’ option to purchase additional shares of common stock.

## RISK FACTORS

*Investment in any securities offered pursuant to this prospectus and the accompanying base prospectus involves risks. You should carefully consider the risk factors described below and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, incorporated by reference in this prospectus, any amendment or update thereto reflected in subsequent filings with the SEC, including in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q, and all other information contained or incorporated by reference in this prospectus, as updated by our subsequent filings under the Exchange Act. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.*

### **Risks Relating to this Offering**

*If you purchase shares of our common stock sold in this offering, you may experience immediate and substantial dilution in the net tangible book value of your shares. In addition, we may issue additional equity or convertible debt securities in the future, which may result in additional dilution to you.*

The price per share of our common stock being offered may be higher than the net tangible book value per share of our outstanding common stock prior to this offering. Assuming that an aggregate of 3,382,950 shares of our common stock are sold at a price of \$7.39 per share, the last reported sale price of our common stock on The Nasdaq Capital Market on December 20, 2021, for aggregate gross proceeds of approximately \$25.0 million, and after deducting commissions and estimated offering expenses payable by us, new investors in this offering will incur immediate dilution of \$3.03 per share. For a more detailed discussion of the foregoing, see the section entitled “Dilution” below. To the extent outstanding stock options or warrants are exercised, there will be further dilution to new investors. In addition, to the extent we need to raise additional capital in the future and we issue additional shares of common stock or securities convertible or exchangeable for our common stock, our then existing stockholders may experience dilution and the new securities may have rights senior to those of our common stock offered in this offering.

*We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.*

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section entitled “Use of Proceeds,” and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment. We expect to use the net proceeds from this offering to fund research, clinical and process development and manufacturing of our product candidates, working capital, capital expenditures and other general corporate purposes. Additionally, we may use a portion of the net proceeds from this offering to expand our current business by in-licensing or acquiring, as the case may be, commercial products, product candidates, technologies, compounds, other assets or complementary businesses, using cash or shares of our common stock. However, we have no current commitments or obligations to do so. The failure by our management to apply these funds effectively could harm our business. Pending their use, we plan to invest the net proceeds from this offering in short-term or long-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

*The actual number of shares we will issue under the sales agreement, at any one time or in total, is uncertain.*

Subject to certain limitations in the sales agreement and compliance with applicable law, we have the discretion to deliver a placement notice to Virtu at any time throughout the term of the sales agreement. The number of shares that are sold by Virtu after delivering a placement notice will fluctuate based on the market price of the common shares during the sales period and limits we set with Virtu. Because the price per share of each share sold

will fluctuate based on the market price of our common stock during the sales period, it is not possible at this stage to predict the number of shares that will be ultimately issued

***The common stock offered hereby will be sold in “at the market offerings,” and investors who buy shares at different times will likely pay different prices.***

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold, and there is no minimum or maximum sales price. Investors may experience a decline in the value of their shares as a result of share sales made at prices lower than the prices they paid.

***Our stock price is subject to market volatility.***

The stock markets in general, and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have experienced extreme volatility, including as a result of the COVID-19 pandemic, that has often been unrelated to the operating performance of the issuer. Furthermore, the trading price of our common stock may be adversely affected by third-parties trying to drive down the market price. Short sellers and others, some of whom post anonymously on social media, may be positioned to profit if our stock declines and their activities can negatively affect our stock price. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance.

## USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to \$25 million from time to time. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. There can be no assurance that we will sell any shares under or fully utilize the sales agreement with Virtu as a source of financing.

We currently intend to use any net proceeds from the sale of securities under this prospectus primarily to fund ongoing cytisinicline development, other clinical research and development and for working capital and general corporate purposes. We may also use a portion of the net proceeds for the acquisition of, or investment in, technologies, intellectual property or businesses that complement our business, although we have no present commitments or agreements to this effect.

The amounts and timing of our actual expenditures will depend on numerous factors, including the progress of our clinical trials and other development efforts and other factors described under "Risk Factors" in this prospectus, the accompanying base prospectus, and the documents incorporated by reference herein and therein, as well as the amount of cash used in our operations. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds. Pending these uses, we intend to invest the net proceeds in short-term or long-term, investment-grade, interest-bearing securities.

## **DIVIDEND POLICY**

We have never declared or paid any cash dividends on our capital stock. We intend to retain future earnings, if any, to finance the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, business prospects and other factors the board of directors deems relevant, and subject to the restrictions contained in any future financing instruments.

## DILUTION

If you invest in our common stock, your interest will be diluted to the extent of the difference between the price per share you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value of our common stock as of September 30, 2021 was approximately \$32.0 million, or approximately \$3.38 per share of common stock based upon 9,453,542 shares outstanding. Net tangible book value per share is equal to our total tangible assets, less our total liabilities, divided by the total number of shares outstanding as of September 30, 2021.

After giving effect to the sale of our common stock in the aggregate amount of \$25.0 million at an assumed offering price of \$7.39 per share, the last reported sale price of our common stock on The Nasdaq Capital Market on December 20, 2021, and after deducting commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2021 would have been \$56.0 million, or \$4.36 per share of common stock. This represents an immediate increase in net tangible book value of \$0.98 per share to our existing stockholders and an immediate dilution in net tangible book value of \$3.03 per share to new investors in this offering.

The following table illustrates this calculation on a per share basis. The as-adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares sold and other terms of the offering determined at the time shares of our common stock are sold pursuant to this prospectus. The as-adjusted information assumes that all of our common stock in the aggregate amount of \$25.0 million is sold at the assumed offering price of \$7.39 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on December 20, 2021. The shares sold in this offering, if any, will be sold from time to time at various prices.

Assumed public offering price per share		\$ 7.39
Net tangible book value per share as of September 30, 2021	\$ 3.38	
Increase in net tangible book value per share attributable to the offering	0.98	
As adjusted net tangible book value per share after giving effect to the offering		4.36
Dilution per share to new investors participating in the offering		\$ 3.03

The number of shares of our common stock to be outstanding immediately after this offering is based on 9,453,542 shares of our common stock outstanding as of September 30, 2021. The number of shares outstanding as of September 30, 2021 excludes:

- 522,090 shares of common stock issuable upon the exercise of options outstanding as of September 30, 2021, with a weighted average exercise price of \$26.11 per share;
- 53,250 shares of common stock subject to restricted stock units outstanding as of September 30, 2021;
- 1,243,656 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2021, with a weighted average exercise price of \$18.46 per share; and
- 4,145 shares of common stock reserved for future issuance under our equity incentive plans as of September 30, 2021.

To the extent that outstanding options or warrants have been or may be exercised, or restricted stock units have vested or may vest, or other shares are issued, new investors may experience further dilution. In addition, we may choose to issue additional common stock, or securities convertible into or exchangeable for common stock, in the future. The issuance of these securities could result in further dilution for new investors.

## PLAN OF DISTRIBUTION

We have entered into the ATM Sales Agreement, dated December 21, 2021, with the sales agent in which we may, at any time and from time to time, offer and sell shares of common stock through the sales agent, as our agent for the offer and sale of the common stock. Any such sales may be made by any method permitted by law that is deemed to be an “at the market offering” as defined in Rule 415 under the Securities Act.

Upon acceptance of written instructions from us, the sales agent will use its commercially reasonable efforts consistent with its normal trading and sales practices to sell shares of common stock under the terms and subject to the conditions set forth in the ATM Sales Agreement. We will instruct the sales agent as to the number of shares of common stock to be sold. We may instruct the sales agent not to sell shares of common stock if the sale cannot be effected at or above the price designated by us in any instruction. We may suspend the offering of our shares of common stock upon proper notice and subject to other conditions.

The sales agent has agreed to provide written confirmation of any sales to us no later than the opening of the trading day on the The Nasdaq Capital Market immediately following the trading day on which shares of our common stock were sold under the ATM Sales Agreement. Each confirmation will include the number of shares of common stock sold on the preceding day, the net proceeds to us and the compensation payable by us to the sales agent in connection with the sales.

We will pay the sales agent commissions for its services in acting as agent in the sale of our shares of common stock offered hereby. Under the ATM Sales Agreement, the sales agent will be entitled to compensation equal to up to 3% of the gross proceeds from each sale of common stock sold through it as our agent. We have also agreed to reimburse the sales agent for fees and disbursements of counsel to the sales agent in an amount up to \$50,000. In accordance with FINRA Rule 5110 these reimbursed fees and expenses are deemed underwriting compensation in connection with this offering. We estimate that the total expenses for the offering, excluding commissions payable to the sales agent under the ATM Sales Agreement, will be approximately \$0.2 million.

Settlement of sales of common stock will occur on the second trading day following the date on which such sales are made, or on some other date that is agreed upon by us and the sales agent in connection with a particular transaction, in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement. Sales of our common stock, if any, as contemplated by this prospectus and the accompanying prospectus will be settled through the facilities of The Depository Trust Company or by such other means as we and the sales agent may agree upon.

In connection with this offering, the sales agent will, with respect to sales effected in an “at the market offering,” be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation of the sales agent may be deemed to be underwriting commissions or discounts. We have agreed to indemnify the sales agent against certain liabilities, including liabilities under the Securities Act, or to contribute to payments that the sales agent may be required to make because of those liabilities.

The offering of shares of common stock pursuant to the ATM Sales Agreement will terminate upon the earlier of (1) the sale of all shares of common stock subject to the ATM Sales Agreement, or (2) termination of the ATM Sales Agreement in accordance with its terms.

The sales agent and its affiliates may in the future provide investment banking and advisory services for us and/or our affiliates in the ordinary course of their business for which they may receive customary fees.



## **LEGAL MATTERS**

The validity of the common stock offered hereby and certain legal matters in connection with this offering will be passed upon by Fenwick & West LLP, Seattle, Washington. Virtu Americas LLC is being represented in connection with this offering by Duane Morris LLP, New York, New York.

## **EXPERTS**

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2020 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

## WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and are required to file annual, quarterly, and other reports, proxy statements, and other information with the SEC. The SEC maintains an Internet site (<http://www.sec.gov>) that contains reports, proxy and information statements, and various other of our information. You may also inspect the documents described herein at our principal executive offices, 1040 West Georgia Street, Suite 1030, Vancouver, B.C. V6E 4H1, during normal business hours.

Our Internet address is [www.achievelifesciences.com](http://www.achievelifesciences.com). There we make available free of charge, on or through the investor relations section of our website, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with the Securities and Exchange Commission. The information found on our website is not part of this prospectus and investors should not rely on any such information in deciding whether to invest.

## INCORPORATION OF INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information that we file with the SEC, which means that we can disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus, and information we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14, or 15(d) of the Exchange Act prior to the termination of any offering of securities made by this prospectus:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2020, filed with the SEC on March 11, 2021;
- our Quarterly Report on Form 10-Q for the fiscal quarters ended March 31, 2021, filed with the SEC on [May 13, 2021](#); June 30, 2021, filed with the SEC on [August 12, 2021](#); and September 30, 2021, filed with the SEC on [November 9, 2021](#);
- our Current Reports on Form 8-K filed with the SEC on [March 15, 2021](#), [May 13, 2021](#) and [May 25, 2021](#) (excluding any information furnished in such report under Item 2.02);
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on September 27, 1995 (paper filing) under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description; and
- filings we make with the SEC pursuant to the Exchange Act after the date of the initial registration statement, of which this prospectus is a part, and prior to the effectiveness of the registration statement.

Upon written or oral request, we will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, a copy of any or all of such documents that are incorporated herein by reference (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates). Written or oral requests for copies should be directed to Achieve Life Sciences, Inc., 1040 West Georgia Street, Suite 1030, Vancouver, B.C. V6E 4H1, Attn: Sandra Thomson, telephone number (604) 736-3678.

Any statement contained in this prospectus, or in a document all or a portion of which is incorporated by reference, shall be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, any prospectus supplement or any document incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not, except as so modified or superseded, constitute a part of this prospectus.



**Up to \$25,000,000  
Common Stock**

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**PROSPECTUS**

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**, 2021**

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**PART II**

**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution**

The following table sets forth estimated expenses in connection with the issuance and distribution of the securities being registered:

<b>Item</b>	<b>Amount to be paid</b>
SEC registration fee	\$ 9,270
FINRA filing fee	15,500
Printing and engraving*	*
Legal fees and expenses*	*
Accounting fees and expenses*	*
Transfer agent and registrar fees and expenses*	*
Miscellaneous expenses*	*
Total*	\$ *

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\* These fees and expenses depend on the type of securities offered and the number of issuances and accordingly, cannot be estimated at this time.

**Item 15. Indemnification of Directors and Officers**

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the Delaware General Corporation Law are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

As permitted by the Delaware General Corporation Law, the Registrant's restated certificate of incorporation contains provisions that eliminate the personal liability of its directors for monetary damages for any breach of fiduciary duties as a director, except liability for the following:

- any breach of the director's duty of loyalty to the Registrant or its stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- under Section 174 of the Delaware General Corporation Law (regarding unlawful dividends or stock purchases); or
- any transaction from which the director derived an improper personal benefit.

As permitted by the Delaware General Corporation Law, the Registrant's restated bylaws provide that:

- the Registrant is required to indemnify its directors and executive officers to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions;
  - the Registrant may indemnify its other employees and agents as set forth in the Delaware General Corporation Law;
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- the Registrant is required to advance expenses, as incurred, to its directors and executive officers in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions; and
- the rights conferred in the restated bylaws are not exclusive.

The Registrant has entered, and intends to continue to enter, into indemnification agreements with each of its directors and executive officers to provide these directors and executive officers additional contractual assurances regarding the scope of the indemnification set forth in the Registrant's restated certificate of incorporation and restated bylaws and to provide additional procedural protections. At present, there is no pending litigation or proceeding involving a director or executive officer of the Registrant for which indemnification is sought. The indemnification provisions in the Registrant's restated certificate of incorporation, restated bylaws and the indemnification agreements entered into or to be entered into between the Registrant and each of its directors and executive officers may be sufficiently broad to permit indemnification of the Registrant's directors and executive officers for liabilities arising under the Securities Act.

The Registrant currently carries liability insurance for its directors and officers.

#### Item 16. Exhibits

The exhibits listed below are filed (except where otherwise indicated) as part of this Registration Statement.

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
1.1*	<a href="#">Form of Underwriting Agreement</a>					
1.2	<a href="#">ATM Sales Agreement, dated December 21, 2021, by and between the Registrant and Virtu Americas LLC</a>					X
4.1	<a href="#">Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.1	5/29/2013	
4.2	<a href="#">Certificate of Amendment to Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.1	5/22/2015	
4.3	<a href="#">Certificate of Amendment (Reverse Stock Split) to Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.1	8/2/2017	
4.4	<a href="#">Certificate of Amendment (Name Change) to Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.2	8/2/2017	
4.5	<a href="#">Certificate of Amendment (Removal of Cumulative Voting) to Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.1	11/1/2017	
4.6	<a href="#">Certificate of Amendment (Reverse Stock Split) to Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.1	5/23/2018	
4.7	<a href="#">Certificate of Amendment (Increase in Authorized Shares) to Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.2	5/23/2018	
4.8	<a href="#">Sixth Amended and Restated Bylaws</a>	8-K	033-80623	3.1	1/5/2017	
4.9	<a href="#">Amendment (Virtual Meeting) to Sixth Amended and Restated Bylaws</a>	10-Q	033-80623	3.1	11/7/2018	
4.10	<a href="#">Certificate of Amendment (Reverse Stock Split) to Second Amended and Restated Certificate of Incorporation</a>	8-K	033-80623	3.1	7/30/2020	

4.11	<a href="#">Form of Registrant's Common Stock certificate</a>	10-Q	000-21243	4.1	11/10/2008	
4.12	<a href="#">Form of Debt Security</a>					X
4.13	<a href="#">Form of Indenture</a>					X
4.14*	<a href="#">Form of Warrant</a>					
4.15*	<a href="#">Form of Preferred Stock Certificate</a>					
4.16*	<a href="#">Form of Subscription Rights Certificate</a>					
5.1	<a href="#">Opinion of Fenwick &amp; West LLP</a>					X
23.1	<a href="#">Consent of Fenwick &amp; West LLP (contained in Exhibit 5.1)</a>					X
23.2	<a href="#">Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm</a>					X
24.1	<a href="#">Power of Attorney (included on the signature page hereto)</a>					X

\* To be filed by amendment or as an exhibit to a report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended and incorporated herein by reference.

\*\* To be filed in accordance with the requirements of Section 305(b)(2) of the Trust Indenture Act of 1939 and Rule 5b-3 thereunder.

#### Item 17. Undertakings

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*provided, however,* that subparagraphs (i), (ii), and (iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

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(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the Registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

(iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and

(iv) any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers, and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against

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public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer, or controlling person of the Registrant in the successful defense of any action, suit, or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(d) If and when applicable, the Registrant hereby further undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Securities and Exchange Commission under Section 305(b)(2) of the Trust Indenture Act.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Vancouver, Province of British Columbia, on December 21, 2021.

**ACHIEVE LIFE SCIENCES, INC.**

By: /s/ John Bencich  
John Bencich  
*Chief Executive Officer*

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## POWER OF ATTORNEY

**KNOW ALL PERSONS BY THESE PRESENTS**, that each person whose signature appears below hereby constitutes and appoints John Bencich and Richard Stewart, and each of them, as his true and lawful attorneys-in-fact, proxies and agents, each with full power of substitution, for him in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments or any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, proxies and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, proxies and agents, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ John Bencich</u> John Bencich	Chief Executive Officer and Director (Principal Executive Officer and Principal Financial Officer)	December 21, 2021
<u>/s/ Jerry Wan</u> Jerry Wan	Senior Director of Accounting Operations (Principal Accounting Officer)	December 21, 2021
<u>/s/ Richard Stewart</u> Richard Stewart	Executive Chairman and Director	December 21, 2021
<u>/s/ Donald R. Joseph</u> Donald R. Joseph	Director	December 21, 2021
<u>/s/ Martin Mattingly</u> Martin Mattingly	Director	December 21, 2021
<u>/s/ Jay M. Moyes</u> Jay M. Moyes	Director	December 21, 2021
<u>/s/ Bridget Martell</u> Bridget Martell	Director	December 21, 2021
<u>/s/ Cindy Jacobs</u> Cindy Jacobs	Director	December 21, 2021

## ACHIEVE LIFE SCIENCES, INC.

Common Stock  
(par value \$0.001 per share)

## ATM Sales Agreement

December 21, 2021

Virtu Americas LLC  
One Liberty Plaza  
165 Broadway  
New York, NY 10006

Ladies and Gentlemen:

Achieve Life Sciences, Inc., a Delaware corporation (the “Company”), confirms its agreement (this “Agreement”), with Virtu Americas LLC (the “Agent”), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through or to the Agent, as sales agent or principal, shares (the “Placement Shares”) of the Company’s common stock, par value \$0.001 per share (the “Common Stock”); *provided, however*, that in no event shall the Company issue or sell through the Agent such number or dollar amount of Placement Shares that (a) exceeds the number of shares or dollar amount of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made, (b) exceeds the number or dollar amount of shares of Common Stock permitted to be sold under Form S-3 (including General Instruction I.B.6 thereof, if applicable) or (c) exceeds the number of shares or dollar amount registered on the Prospectus Supplement (as defined below) (the lesser of (a), (b) or (c) the “Maximum Amount”); and *provided further, however*, that in no event shall the aggregate number of Placement Shares sold pursuant to this Agreement exceed the number of authorized but unissued shares of Common Stock (less shares of Common Stock issuable upon exercise, conversion or exchange of any outstanding securities of the Company or otherwise reserved from the Company’s authorized capital stock). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the number of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that the Agent shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through the Agent will be effected pursuant to the Registration Statement (as defined below), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue any Placement Shares.

The Company shall file, in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations thereunder (the “Securities Act”), with the Securities

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and Exchange Commission (the “Commission”), a registration statement on Form S-3, including a base prospectus, relating to certain securities including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (the “Exchange Act”). The Company has prepared a prospectus or a prospectus supplement to the base prospectus included as part of the registration statement, which prospectus or prospectus supplement relates to the Placement Shares (the “Prospectus Supplement”). The Company will furnish to the Agent, for use by the Agent, copies of the base prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares. Except where the context otherwise requires, such registration statement, and any post-effective amendment thereto, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act, or any subsequent registration statement on Form S-3 filed pursuant to Rule 415(a)(6) under the Securities Act by the Company to cover any Placement Shares, is herein called the “Registration Statement.” The base prospectus, including all documents incorporated or deemed incorporated therein by reference to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such base prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act, together with any then issued Issuer Free Writing Prospectus(es) (as defined below), is herein called the “Prospectus.” Any reference herein to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, any Prospectus Supplement, the Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act on or after the most recent effective date of the Registration Statement, or the date of the Prospectus Supplement, Prospectus or such Issuer Free Writing Prospectus, as the case may be, and incorporated by reference therein (the “Incorporated Documents”).

For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, “EDGAR”).

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a “Placement”), it will notify the Agent by electronic mail (or other method mutually agreed to in writing by the parties) of the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a “Placement Notice”), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on

Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective immediately upon receipt by the Agent unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, (ii) the entire amount of the Placement Shares thereunder has been sold, (iii) the Company suspends or terminates the Placement Notice, which suspension and termination rights may be exercised by the Company in its sole discretion, or (iv) this Agreement has been terminated under the provisions of Section 13. The amount of any discount, commission or other compensation to be paid by the Company to the Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of Sections 2 or 3 of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by the Agent. Subject to the terms and conditions of this Agreement, for the period specified in a Placement Notice, the Agent will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Capital Market (the “Exchange”), to sell the Placement Shares up to the amount specified in, and otherwise in accordance with the terms of, such Placement Notice. The Agent will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of a Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 of the Securities Act, including sales made directly on or through the Exchange or any other existing trading market for the Common Stock, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices and/or any other method permitted by law. “Trading Day” means any day on which Common Stock is traded on the Exchange. While a Placement Notice is in effect, neither the Agent nor any of its subsidiaries shall engage in (i) any short sale of any security of the Company, as defined in Regulation SHO, or (ii) any market making bidding, stabilization or other trading activity with regard to the Common Stock or related derivative securities, in each case, if such activity would be prohibited under Regulation M or other anti-manipulation rules. For the avoidance of doubt, the restrictive covenant in the prior sentence shall not apply to transactions by or on behalf of any customer of the Agent or transactions by the Agent to facilitate any such transactions by or on behalf of any customer of the Agent.

4. Suspension of Sales. The Company or the Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed

immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares (a “Suspension”); *provided, however*, that such Suspension shall not affect or impair any party’s obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a Suspension is in effect, any obligation under Sections 7(l), 7(m), and 7(n) with respect to the delivery of certificates, opinions, or comfort letters to the Agent, shall be waived. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule 3 may be amended from time to time.

5. Sale and Delivery to the Agent; Settlement.

a. Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the effectiveness of a Placement Notice pursuant to Section 2 hereof, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Exchange to sell such Placement Shares up to the amount specified in, and otherwise in accordance with the terms of, such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Placement Shares, (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Exchange to sell such Placement Shares as required under this Agreement and (iii) the Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by the Agent and the Company.

b. Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2<sup>nd</sup>) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a “Settlement Date”). The Agent shall notify the Company of each sale of Placement Shares no later than the opening of the Trading Day immediately following the Trading Day on which the Agent sold Placement Shares. The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the “Net Proceeds”) will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent’s commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any Governmental Authority in respect of such sales.

c. Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent’s or its designee’s account (provided the Agent shall have given the Company written notice of such designee and such designee’s account information at least one (1) Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit

and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date through no fault of the Agent, then in addition to and in no way limiting the rights and obligations set forth in Section 11(a) hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or reasonable, documented expense (including reasonable and documented legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

d. Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount, and (B) the amount authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing.

6. Representations and Warranties of the Company. Except as disclosed in the Registration Statement or the Prospectus (including the Incorporated Documents), the Company represents and warrants to, and agrees with the Agent that as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different date or time:

a. Registration Statement and Prospectus. The Company, and assuming no act or omission on the part of the Agent that would make such statement untrue, the transactions contemplated by this Agreement meet the requirements for and comply with the applicable conditions set forth in Form S-3 (including General Instructions I.A and I.B) under the Securities Act. The Registration Statement has been filed with the Commission and has been declared effective under the Securities Act. The Prospectus Supplement will name the Agent as the agent in the section entitled "Plan of Distribution." The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed, as applicable. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through



EDGAR, to the Agent and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which the Agent has consented, which consent will not be unreasonably withheld, conditioned or delayed, or that is required by applicable law or the listing maintenance requirements of the Exchange. The Common Stock is currently listed on the Exchange under the trading symbol "ACHV." The Company has not, in the twelve (12) months preceding the date hereof, received notice from the Exchange to the effect that the Company is not in compliance with the listing or maintenance requirements of the Exchange. To the Company's knowledge, it is in compliance with all such listing and maintenance requirements of the Exchange.

b. No Misstatement or Omission. At each Settlement Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became or becomes effective, did not, and will not, contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto, on the date thereof and at each Applicable Time (defined below), did not or will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. The documents incorporated by reference in the Prospectus or any Prospectus Supplement did not, and any further documents filed and incorporated by reference therein will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in light of the circumstances under which they were made, not misleading. The foregoing shall not apply to, and the Company neither makes nor shall may make representation or warranty in respect of, statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by the Agent specifically for use in the preparation thereof ("Agent Information").

c. Conformity with Securities Act and Exchange Act. The Registration Statement, the Prospectus, any Issuer Free Writing Prospectus or any amendment or supplement thereto, and the Incorporated Documents, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed or will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

d. Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified (subject, in the case of unaudited statements, to normal year-end audit adjustments which will not be material, either individually or in the aggregate) and have been prepared in compliance with the published requirements of the Securities Act and Exchange Act, as applicable, and in conformity with generally accepted accounting principles in the United States ("GAAP") applied on a

consistent basis during the periods involved (except (i) for such adjustments to accounting standards and practices as are noted therein and (ii) in the case of unaudited financial statements, to the extent they may exclude footnotes or may be condensed or summary statements); the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, are accurately and fairly presented in all material respects and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement, or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off balance sheet obligations), not described in the Registration Statement (excluding the exhibits thereto), and the Prospectus which are required to be described in the Registration Statement or Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

e. Conformity with EDGAR Filing. The Prospectus delivered to the Agent for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the versions of the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

f. Organization. The Company and any subsidiary that is a significant subsidiary (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission) (each, a “Subsidiary,” collectively, the “Subsidiaries”), are, and will be, duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and the Subsidiaries are duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect on the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders’ equity or results of operations of the Company and the Subsidiaries taken as a whole, or prevent the consummation of the transactions contemplated hereby (a “Material Adverse Effect”).

g. Subsidiaries. The Company owns directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company’s Annual Report on Form 10-K for the most recently ended fiscal year and other than (i) those subsidiaries not required to be listed on Exhibit

21.1 by Item 601 of the Exchange Act and (ii) those subsidiaries formed since the last day of the most recently ended fiscal year.

h. No Violation or Default. Neither the Company nor any Subsidiary is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other similar agreement or instrument to which the Company or any Subsidiary is a party or by which the Company or any Subsidiary is bound or to which any of the property or assets of the Company or any Subsidiary is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any Governmental Authority, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, have a Material Adverse Effect. To the Company's knowledge, no other party under any material contract or other agreement to which it or any Subsidiary is a party is in default in any respect thereunder where such default would have a Material Adverse Effect.

i. No Material Adverse Effect. Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus, there has not been (i) any Material Adverse Effect, or the occurrence of any development that would result in a Material Adverse Effect, (ii) any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or the Subsidiaries, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock (other than (A) the grant of additional options under the Company's existing stock option plans, (B) changes in the number of outstanding Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof, (C) as a result of the issuance of Placement Shares, (D) any repurchases of capital stock of the Company, (E) as described in a proxy statement filed on Schedule 14A or a Registration Statement on Form S-4, or (F) otherwise publicly announced) or outstanding long-term indebtedness of the Company or the Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above in the ordinary course of business or as otherwise disclosed in the Registration Statement or Prospectus (including any document incorporated by reference therein).

j. Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and non-assessable and, other than as disclosed in the Registration Statement or the Prospectus, are not subject to any preemptive rights, rights of first refusal or similar rights pursuant to the Company's organizational documents or any agreement or other instrument to which the Company is a party or by which the Company is bound. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than (i) the grant of additional options, restricted stock or other equity awards under the Company's existing equity incentive plans, (ii) changes in the number of outstanding Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof, (iii) as a result of the issuance of

Placement Shares, or (iv) any repurchases of capital stock of the Company) and such authorized capital stock conforms to the description thereof set forth in the Registration Statement and the Prospectus. The description of the Common Stock in the Registration Statement and the Prospectus is complete and accurate in all material respects. Except as disclosed in or contemplated by the Registration Statement or the Prospectus, the Company did not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

k. S-3 Eligibility. (i) At the time of filing the Registration Statement and (ii) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Securities Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Section 13 or 15(d) of the Exchange Act or form of prospectus), the Company met the then applicable requirements for use of Form S-3 under the Securities Act, including compliance with General Instruction I.B.1 or General Instruction I.B.6 of Form S-3, as applicable. The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in General Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

l. Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification and contribution provisions of Section 11 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof.

m. Authorization of Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim (other than any pledge, lien, encumbrance, security interest or other claim arising from an act or omission of the Agent or a purchaser), including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Prospectus.

n. No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any Governmental Authority is required for the execution, delivery and performance by the Company of this Agreement, and the issuance and sale by the Company of the Placement Shares as contemplated hereby, except for the registration of the Placement Shares under the Securities Act and such consents, approvals, authorizations, orders

and registrations or qualifications (i) as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority (“FINRA”) or the Exchange, including any notices that may be required by the Exchange, in connection with the sale of the Placement Shares by the Agent, (ii) as may be required under the Securities Act or (iii) as have been previously obtained by the Company.

o. No Preferential Rights. Except as set forth in the Registration Statement and the Prospectus, (i) no person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a “Person”), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any Common Stock or shares of any other capital stock or other securities of the Company (other than upon the exercise of options or warrants to purchase Common Stock or upon the exercise of options that may be granted from time to time under the Company’s stock option plan), (ii) no Person has any preemptive rights, rights of first refusal, or any other rights (whether pursuant to a “poison pill” provision or otherwise) to purchase any Common Stock or shares of any other capital stock or other securities of the Company from the Company which have not been duly waived with respect to the offering contemplated hereby, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise, except in each case for such rights as have been waived on or prior to the date hereof.

p. Independent Public Accountant. PricewaterhouseCoopers LLP (the “Accountant”), whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company’s most recent Annual Report on Form 10-K filed with the Commission and incorporated into the Registration Statement, is and, during the periods covered by its report, were independent public accountants within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company’s knowledge, the Accountant is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the “Sarbanes-Oxley Act”) with respect to the Company.

q. Enforceability of Agreements. All agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or whose termination is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company and, to the Company’s knowledge, enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors’ rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, and except for any unenforceability that, individually or in the aggregate, would not have a Material Adverse Effect.

r. No Litigation. There are no actions, suits or proceedings by or before any Governmental Authority pending or, to the Company’s knowledge, threatened, to which the

Company or any Subsidiary is a party or to which any of the properties of the Company or any Subsidiary is subject (i) other than proceedings accurately described in all material respects in the Prospectus and proceedings that would not have a Material Adverse Effect on the Company and its Subsidiaries, taken as a whole, or on the power or ability of the Company to perform its obligations under this Agreement or to consummate the transactions or (ii) that are required under the Securities Act to be described in the Registration Statement or the Prospectus and are not so described; and there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement that are not so filed.

s. Licenses and Permits. The Company and the Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as currently conducted, as described in the Registration Statement and the Prospectus (the “Permits”), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, have a Material Adverse Effect. Neither the Company nor any Subsidiary has received written notice of any proceeding relating to revocation or modification of any such Permit or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, have a Material Adverse Effect.

t. No Material Defaults. Neither the Company nor any Subsidiary has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would have a Material Adverse Effect.

u. Certain Market Activities. Neither the Company, nor any Subsidiary, nor, to the knowledge of the Company, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or would cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

v. Broker/Dealer Relationships. Neither the Company nor any Subsidiary or any related entities (i) is required to register as a “broker” or “dealer” in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a “person associated with a member” or “associated person of a member” (within the meaning set forth in the FINRA Manual).

w. No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

x. Taxes. The Company and the Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to do so would not have a Material Adverse Effect. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any of its Subsidiaries which has had, or would have, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it which would have a Material Adverse Effect.

y. Title to Real and Personal Property. The Company and the Subsidiaries have good and valid title in fee simple to all items of real property and good and valid title to all personal property described in the Registration Statement or Prospectus as being owned by them that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries or (ii) would not, individually or in the aggregate, have a Material Adverse Effect. Any real property described in the Registration Statement or Prospectus as being leased by the Company and the Subsidiaries is held by them under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made or proposed to be made of such property by the Company or the Subsidiaries or (B) would not, individually or in the aggregate, have a Material Adverse Effect.

z. Intellectual Property. The Company and the Subsidiaries own or possess adequate enforceable rights to use all patents, patent applications, trademarks (both registered and unregistered), trade names, trademark registrations, service marks, service mark registrations, Internet domain name registrations, copyrights, copyright registrations, licenses and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) (collectively, the “Intellectual Property”), necessary for the conduct of their respective businesses as conducted as of the date hereof, except to the extent that the failure to own or possess adequate rights to use such Intellectual Property would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company and the Subsidiaries have not received any written notice of any claim of infringement or conflict which asserted Intellectual Property rights of others, which infringement or conflict, if the subject of an unfavorable decision, would result in a Material Adverse Effect. There are no pending, or to the Company’s knowledge, threatened judicial proceedings or interference proceedings challenging the Company’s or any Subsidiary’s rights in or to or the validity of the scope of any of the Company’s or its Subsidiaries’ patents, patent applications or proprietary information. No other entity or individual has any right or claim in any of the Company’s or any of its Subsidiary’s material patents, patent applications or any patent to be issued therefrom by virtue of any contract, license or other agreement entered into between such entity or individual and the Company or any Subsidiary or by any non-contractual obligation, other than by written licenses granted by the Company or any Subsidiary. The Company has not received any written notice of any claim challenging the rights of the Company or its Subsidiaries in or to any Intellectual Property owned, licensed or optioned by the Company or any Subsidiary which claim, if the subject of an unfavorable decision, would result in a Material Adverse Effect.

aa. Compliance with Applicable Laws. The Company has not been advised, and has no reason to believe, that it and each of its Subsidiaries are not conducting business in compliance with all applicable laws, rules and regulations of the jurisdictions in which it is conducting business, except where failure to be so in compliance would not result in a Material Adverse Effect.

bb. Environmental Laws. The Company and the Subsidiaries (i) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"); (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses as described in the Registration Statement and the Prospectus; and (iii) have not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, have a Material Adverse Effect.

cc. Compliance Program. The Company has established and administers a compliance program applicable to the Company, to assist the Company and the directors, officers and employees of the Company in complying with applicable regulatory guidelines (including, without limitation, those administered by the Food and Drug Administration (the "FDA"), the European Medicines Agency (the "EMA"), and any other foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA or EMA); except where such noncompliance would not have a Material Adverse Effect.

dd. Clinical Studies. The animal and other preclinical studies and clinical trials conducted by the Company or on behalf of the Company were, and, if still pending are, to the Company's knowledge, being conducted in all material respects in compliance with all applicable laws and in accordance with experimental protocols, procedures and controls generally used by qualified experts in the preclinical study and clinical trials of new drugs and biologics as applied to comparable products to those being developed by the Company; the descriptions of the results of such preclinical studies and clinical trials contained in the Registration Statement and the Prospectus are accurate and complete in all material respects, and, except as set forth in the Registration Statement and the Prospectus, the Company has no knowledge of any other clinical trials or preclinical studies, the results of which reasonably call into question the clinical trial or preclinical study results described or referred to in the Registration Statement and the Prospectus when viewed in the context in which such results are described; and the Company has not received any written notices or correspondence from the FDA, the EMA, or any other domestic or foreign governmental agency requiring the termination, suspension or modification of any preclinical studies or clinical trials conducted by or on behalf of the Company that are described in the Registration Statement and the Prospectus or the results of which are referred to in the Registration Statement and the Prospectus.\_

ee. Disclosure Controls. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in



accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) that comply with the requirements of the Exchange Act. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within ninety (90) days prior to the filing date of the Company's Annual Report on Form 10-K for the fiscal year most recently ended (such date, the "Evaluation Date"). The Company presented in its Annual Report on Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the most recent Evaluation Date, and the "disclosure controls and procedures" are effective.

ff. Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission during the past twelve (12) months. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Exchange Act Rules 13a-15 and 15d-15.

gg. Finder's Fees. Neither the Company nor any Subsidiary has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to the Agent pursuant to this Agreement.

hh. Labor Disputes. No labor disturbance by or dispute with employees of the Company or any Subsidiary exists or, to the knowledge of the Company, is threatened which would result in a Material Adverse Effect.

ii. Investment Company Act. Neither the Company nor any Subsidiary is or, after giving effect to the offering and sale of the Placement Shares, will be an "investment company" or an entity "controlled" by an "investment company," as such terms are defined in the Investment Company Act of 1940, as amended (the "Investment Company Act").

jj. Operations. The operations of the Company and the Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or the Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any Governmental Authority (collectively, the "Money Laundering Laws"), except where the failure to be in such compliance would not result in a Material Adverse Effect; and no action, suit or proceeding by or before any Governmental Authority involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

kk. Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity (each, an “Off-Balance Sheet Transaction”) that would affect materially the Company’s liquidity or the availability of or requirements for its capital resources, including those Off-Balance Sheet Transactions described in the Commission’s Statement about Management’s Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), required to be described in the Registration Statement or the Prospectus which have not been described as required.

ll. Underwriter Agreements. Other than with respect to this Agreement, the Company is not a party to any agreement with an agent or underwriter for any other “at the market” or continuous equity transaction.

mm. ERISA. To the knowledge of the Company, (i) each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company and the Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the “Code”); (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred which would result in a material liability to the Company with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and (iii) for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no “accumulated funding deficiency” as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) equals or exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions, other than, in the case of (i), (ii) and (iii) above, as would not have a Material Adverse Effect.

nn. Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a “Forward-Looking Statement”) contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

oo. Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System.

pp. Insurance. The Company and the Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and the Subsidiaries reasonably believe are adequate for the conduct of their business.

qq. No Improper Practices. (i) Neither the Company nor, to the Company's knowledge, the Subsidiaries, nor to the Company's knowledge, any of their respective executive officers has, in the past five (5) years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of applicable law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company's knowledge, the Subsidiaries or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company's knowledge, the Subsidiaries, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or the Subsidiaries or any affiliate of them, on the one hand, and the directors, officers, stockholders or directors of the Company or, to the Company's knowledge, the Subsidiaries, on the other hand, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, the Subsidiaries to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or the Subsidiaries to alter the customer's or supplier's level or type of business with the Company or the Subsidiaries or (B) a trade journalist or publication to write or publish favorable information about the Company or the Subsidiaries or any of their respective products or services, and; (vi) neither the Company nor the Subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or the Subsidiaries has made any payment of funds of the Company or the Subsidiaries or received or retained any funds in violation of any applicable law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

rr. Status Under the Securities Act. The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Placement Shares.

ss. No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 25 below), did not, does not and will not, through the completion or termination of the Placement or Placements for which such Issuer Free Writing Prospectus is issued, include any information that conflicted, conflicts or will conflict with the information contained in the

Registration Statement or the Prospectus, including any incorporated document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by the Agent specifically for use therein.

tt. No Conflicts. Neither the execution of this Agreement, nor the issuance, offering or sale of the Placement Shares, nor the consummation of any of the transactions contemplated herein, nor the compliance by the Company with the terms and provisions hereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches and defaults that would not have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the organizational or governing documents of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any Governmental Authority having jurisdiction over the Company, except where such violation would not have a Material Adverse Effect.

uu. OFAC.

(i) Neither the Company nor any Subsidiary (collectively, the “Entity”) nor, to the Company’s knowledge, any director, officer, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (uu), “Person”) that is, or is owned or controlled by a Person that is:

(a) the subject of any sanctions administered or enforced by the U.S. Department of Treasury’s Office of Foreign Assets Control (“OFAC”), the United Nations Security Council (“UNSC”), the European Union (“EU”), Her Majesty’s Treasury (“HMT”), or other relevant sanctions authority (collectively, “Sanctions”), nor

(b) located, organized or resident in a country or territory that is the subject of Sanctions.

(ii) The Entity will not, directly or indirectly, knowingly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

(a) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(b) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(iii) The Entity represents and covenants that, except as detailed in the Registration Statement and the Prospectus, for the past 5 years, it has not knowingly engaged in and is not now knowingly engaged in any unauthorized dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

vv. Stock Transfer Taxes. On each Settlement Date, all material stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with by the Company in all material respects.

ww. IT Systems. (i)(x) To the knowledge of Company, there has been no material security breach or other material compromise of any Company's information technology and computer systems, networks, hardware, software, data (including the data of their respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of them), equipment or technology (collectively, "IT Systems and Data") and (y) the Company has not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any material security breach or other material compromise to their IT Systems and Data; (ii) the Company is presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, in the case of this clause (ii), individually or in the aggregate, have a Material Adverse Effect; and (iii) the Company has implemented backup and disaster recovery technology consistent with industry standards and practices.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to the Agent as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with the Agent that:

a. Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by the Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act) (the "Prospectus Delivery Period"), (i) the Company will notify the Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference or amendments not related to any Placement, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus, other than documents incorporated by reference, has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus that relates to the Placement or for additional information that relates to the Placement; (ii) the Company will prepare and file with the Commission, promptly upon the Agent's request, any amendments or supplements to the Registration Statement or Prospectus that, upon the advice of Company Counsel (as defined

below), may be necessary or advisable in connection with the distribution of the Placement Shares by the Agent (*provided, however*, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and *provided, further*, that the only remedy the Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus relating to the Placement Shares or a security convertible into the Placement Shares (other than an Incorporated Document) unless a copy thereof has been submitted to the Agent within a reasonable period of time before the filing and the Agent has not reasonably objected thereto within two (2) Business Days (*provided, however*, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing if the filing does not name the Agent and does not reference the transactions contemplated hereunder; and *provided, further*, that the only remedy the Agent shall have with respect to the failure by the Company to obtain such consent shall be to cease making sales under this Agreement) and the Company will furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

b. Notice of Commission Stop Orders. The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agent promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

c. Delivery of Prospectus; Subsequent Changes. During the Prospectus Delivery Period, the Company will comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430A under the Securities Act, it will use its commercially reasonable efforts to

comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430A and to notify the Agent promptly of all such filings if not available on EDGAR. If during the Prospectus Delivery Period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such Prospectus Delivery Period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided, however*, that the Company may delay such amendment or supplement, if, in the judgment of the Company, it is in the best interest of the Company.

d. Listing of Placement Shares. Prior to the date of the first Placement Notice, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange.

e. Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the reasonable expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during the Prospectus Delivery Period (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as the Agent may from time to time reasonably request and, at the Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agent to the extent such document is available on EDGAR.

f. Earnings Statement. To the extent not otherwise available on EDGAR, the Company will make generally available to its security holders as soon as practicable, but in any event not later than fifteen (15) months after the end of the Company's current fiscal quarter, an earnings statement covering a twelve (12)-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

g. Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

h. Notice of Other Sales. Without the prior written consent of the Agent (such consent not to be unreasonably withheld, conditioned or delayed), the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the fifth (5<sup>th</sup>) Trading Day immediately prior to the date on which any Placement Notice is delivered to the Agent hereunder and ending on the fifth (5<sup>th</sup>) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of

such suspension or termination); and will not directly or indirectly in any other “at the market” or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior the termination of this Agreement; *provided, however*, that such restrictions will not apply in connection with the Company’s issuance or sale of (i) Common Stock, options to purchase Common Stock, other awards of Common Stock under the Company’s equity incentive plans or Common Stock issuable upon the exercise of options, pursuant to any stock option, or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented; (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent; (iii) Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, strategic partners or potential strategic partners or other investors conducted in a manner so as not to be integrated with the offering of Common Stock hereby; and (iv) Common Stock in connection with any acquisition, strategic investment or other similar transaction (including any joint venture, strategic alliance or partnership).

i. Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to the Agent pursuant to this Agreement.

j. Due Diligence Cooperation. During the term of this Agreement, the Company will cooperate with any reasonable due diligence review conducted by the Agent or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company’s principal offices, as the Agent may reasonably request.

k. Required Filings Relating to Placement of Placement Shares. The Company agrees that on such dates as the Securities Act shall require with respect to the Placement Shares, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (each and every filing date under Rule 424(b), a “Filing Date”), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through the Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Agent with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

l. Representation Dates; Certificate. Each time during the term of this Agreement that the Company:

(i) amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;



(ii) files its Annual Report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended audited financial information or a material amendment to the previously filed Annual Report on Form 10-K);

(iii) files its Quarterly Reports on Form 10-Q under the Exchange Act; or

(iv) files a Current Report on Form 8-K containing amended financial information (other than information “furnished” pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act;

(each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a “Representation Date”); the Company shall furnish the Agent (but in the case of clause (iv) above only if the Agent reasonably determines that the information contained in such Current Report on Form 8-K is material) with a certificate, in the form attached hereto as Exhibit 7(l). The requirement to provide a certificate under this Section 7(1) shall be automatically waived for any Representation Date occurring (i) at a time a Suspension is in effect, which waiver shall continue until the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date) and (ii) at a time at which no Placement Notice is pending, which waiver shall continue until the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date). Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when a Suspension is in effect or no Placement Notice is pending and did not provide the Agent with a certificate under this Section 7(1), then before the Company delivers the instructions for the sale of Placement Shares or the Agent sells any Placement Shares pursuant to such instructions, the Company shall provide the Agent with a certificate, in the form attached hereto as Exhibit 7(1), dated the date of the Placement Notice.

m. Legal Opinion. On or prior to the date of the first Placement Notice given hereunder, the Company shall cause to be furnished to the Agent a written opinion and negative assurance letter of Fenwick & West LLP (“Company Counsel”), or other counsel reasonably satisfactory to the Agent, in form and substance reasonably satisfactory to the Agent. Thereafter, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(1) for which no waiver is applicable, the Company shall cause to be furnished to the Agent a negative assurance letter of Company Counsel in form and substance reasonably satisfactory to the Agent; *provided that*, in lieu of such negative assurance for subsequent periodic filings under the Exchange Act, Company Counsel may furnish the Agent with a letter (a “Reliance Letter”) to the effect that the Agent may rely on the negative assurance letter previously delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as

of the date of the Reliance Letter).

n. Comfort Letter. On or prior to the date of the first Placement Notice given hereunder and within five (5) Trading Days after each subsequent Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l) for which no waiver is applicable, and other than pursuant to Section 7(l)(iii), the Company shall cause its independent accountants to furnish the Agent letters (the “Comfort Letters”), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n). The Comfort Letter from the Company’s independent accountants shall be in a form and substance reasonably satisfactory to the Agent, (i) confirming that they are an independent public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants’ “comfort letters” to underwriters in connection with registered public offerings (the first such letter, the “Initial Comfort Letter”) and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

o. Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or would constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than the Agent.

p. Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor the Subsidiaries will be or become, at any time prior to the termination of this Agreement, an “investment company,” as such term is defined in the Investment Company Act.

q. No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder pursuant to Section 23, neither the Agent nor the Company (including its agents and representatives, other than the Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

r. Sarbanes-Oxley Act. The Company will maintain and keep accurate books and records reflecting its assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company’s consolidated financial statements in accordance with GAAP, (iii) that receipts and expenditures of the Company are being made only in accordance with management’s and the Company’s directors’ authorization, and (iv) provide reasonable assurance regarding prevention

or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company will maintain disclosure controls and procedures that comply with the requirements of the Exchange Act.

8. Representations and Covenants of the Agent. The Agent represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required. The Agent shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which it is exempt from registration or such registration is not otherwise required, during the term of this Agreement. The Agent shall comply with all applicable law and regulations in connection with the transactions contemplated by this Agreement, including the issuance and sale through the Agent of the Placement Shares.

9. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation and filing of the Registration Statement, including any fees required by the Commission, and the printing or electronic delivery of the Prospectus as originally filed and of each amendment and supplement thereto, in such number as the Agent shall reasonably deem necessary, (ii) the printing and delivery to the Agent of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the reasonable and documented out-of-pocket fees and disbursements of counsel to the Agent not to exceed \$50,000 in the aggregate, (vi) the fees and expenses of the transfer agent and registrar for the Common Stock, (vii) the filing fees incident to any review by FINRA of the terms of the sale of the Placement Shares, and (viii) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

10. Conditions to the Agent's Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein (other than those representations and warranties made as of a specified date or time), to the due performance in all material respects by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing reasonable satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

a. Registration Statement Effective. The Registration Statement shall remain effective and shall be available for the sale of all Placement Shares contemplated to be issued by any Placement Notice.

b. No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state Governmental Authority during the period of

effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state Governmental Authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction the initiation of, or a threat to initiate, any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement of a material fact made in the Registration Statement or the Prospectus or any material Incorporated Document untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or any material Incorporated Document so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain a materially untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

c. No Misstatement or Material Omission. The Agent shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agent's reasonable opinion is material, or omits to state a fact that in the Agent's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

d. Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any Material Adverse Effect, or any development that would cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities) by any "nationally recognized statistical rating organization," as such term is defined by the Commission for purposes of Rule 436(g)(2) under the Securities Act (a "Rating Organization"), or a public announcement by any Rating Organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), the effect of which, in the case of any such action by a Rating Organization described above, in the reasonable judgment of the Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

e. Company Counsel Legal Opinion. The Agent shall have received the opinion and negative assurance letter of Company Counsel required to be delivered pursuant to Section 7(m) on or before the date on which such delivery of such opinion and negative assurance letter are required pursuant to Section 7(m).

f. Agent Counsel Legal Opinion. Agent shall have received from Duane Morris LLP, counsel for the Agent, such opinion or opinions, on or before the date on which the delivery of the Company Counsel legal opinion is required pursuant to Section 7(m), with respect to such matters as the Agent may reasonably require, and the Company shall have furnished to such counsel such documents as they request for enabling them to pass upon such matters.

g. Comfort Letter. The Agent shall have received the Comfort Letter required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such letter is required pursuant to Section 7(n).

h. Representation Certificate. The Agent shall have received the certificate required to be delivered pursuant to Section 7(1) on or before the date on which delivery of such certificate is required pursuant to Section 7(1).

i. Secretary's Certificate. On or prior to the first Representation Date, the Agent shall have received a certificate, signed on behalf of the Company by its corporate Secretary, in form and substance satisfactory to the Agent and its counsel.

j. No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

k. Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(1), the Company shall have furnished to the Agent such appropriate further information, certificates and documents as the Agent may reasonably request. All such certificates and documents will be in compliance with the provisions hereof.

l. Securities Act Filings Made. All filings with the Commission related to the Placement Shares required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

m. Approval for Listing. The Placement Shares shall either have been approved for listing on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

n. No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 13(a).

11. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its partners, members, directors, officers, employees and agents and each person, if any, who controls the Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission

or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any Governmental Authority, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; *provided that* (subject to Section 11(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the reasonable and documented fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any Governmental Authority, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above,

*provided, however*, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with the Agent Information.

(b) Indemnification by the Agent. The Agent agrees to indemnify and hold harmless the Company and its directors and officers, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 11(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or in any related Issuer Free Writing Prospectus (or any amendment or supplement thereto) or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with Agent Information.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 11 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 11, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 11 and (ii) any liability that it may have to any indemnified party under the foregoing provisions of this Section 11 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its

election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable and documented costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict of interest exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable and documented fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable and documented fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such reasonable and documented fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 11 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 11 is applicable in accordance with its terms but for any reason is held to be unavailable or insufficient from the Company or the Agent, the Company and the Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from a Person other than the Agent, such as a Person who controls the Company within the meaning of the Securities Act or Exchange Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution to which the Company and the Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Agent on the other hand). The relative benefits received by the Company on the one hand and the Agent on the other hand shall be deemed to be in the same proportion as the total Net Proceeds from the sale of the

Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agent (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this Section 11(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 11(d) shall be deemed to include, for the purpose of this Section 11(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 11(c) hereof. Notwithstanding the foregoing provisions of this Section 11(d), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 11(d), any person who controls a party to this Agreement within the meaning of the Securities Act or the Exchange Act, and any officers, directors, partners, employees or agents of the Agent, will have the same rights to contribution as that party, and each officer of the Company who signed the Registration Statement and director of the Company will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 11(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 11(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 11(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 11(c) hereof.

12. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 11 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.



13. Termination.

a. The Agent may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any Material Adverse Effect, or any development that would have a Material Adverse Effect that, in the sole judgment of the Agent, is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 13(a), the Agent shall provide the required notice as specified in Section 14 (Notices).

b. The Company shall have the right, by giving five (5) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

c. The Agent shall have the right, by giving five (5) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

d. Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein except that the provisions of

Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

e. This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) shall remain in full force and effect. Upon termination of this Agreement, the Company shall not have any liability to the Agent for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by the Agent under this Agreement.

f. Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided, however*, that such termination shall not be effective until the close of business on the date of receipt of such notice by the Agent or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

14. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Agent, shall be delivered to:

Virtu Americas LLC  
One Liberty Plaza  
165 Broadway  
New York, NY 10006  
Attention: Virtu Capital Markets  
Email:

with a copy to:

Duane Morris LLP  
1540 Broadway  
New York, NY 10036  
Attention:  
Telephone:  
Email:

Dean M. Colucci

and if to the Company, shall be delivered to:

Achieve Life Sciences, Inc.  
1040 West Georgia Street  
Suite 1030  
Vancouver, British Columbia, Canada V6E 4H1  
Attention: John Bencich  
Telephone:  
Email:

with a copy to:

Fenwick & West LLP  
1191 Second Avenue  
10th Floor  
Seattle, WA 98101  
Attention: Amanda L. Rose,  
Chelsea Anderson  
Email:

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally, by email, or by verifiable facsimile transmission on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "Business Day" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither the Company nor the Agent may assign its rights or obligations under this Agreement without the prior written consent of the other party.

16. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share consolidation, stock split, stock dividend, corporate domestication or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability; Waiver. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter

hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement. No implied waiver by a party shall arise in the absence of a waiver in writing signed by such party. No failure to delay in exercising any right, power, or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power, or privilege hereunder.

18. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL . THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. THE COMPANY AND THE AGENT EACH HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

19. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

20. Use of Information. The Agent may not use any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to advise any party with respect to transactions not expressly approved by the Company.

21. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile or electronic transmission or email of a .pdf attachment.

22. Effect of Headings. The section, Schedule and Exhibit headings herein are for convenience only and shall not affect the construction hereof.

23. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior consent of the Agent (any such consent not to be unreasonably withheld, conditioned or delayed), and the Agent represents, warrants and agrees that, unless it obtains the prior consent of the Company (any such consent not to be unreasonably withheld, conditioned or delayed), it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a “free writing prospectus,” as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by the Agent or by the Company, as the case may be, is hereinafter referred to as a “Permitted Free Writing Prospectus.” The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an “issuer free writing prospectus,” as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 23 hereto are Permitted Free Writing Prospectuses.

24. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

a. the Agent is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not the Agent has advised or is advising the Company on other matters, and the Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

b. it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

c. neither the Agent nor its affiliates have provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

d. it is aware that the Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and the Agent and its affiliates have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

e. it waives, to the fullest extent permitted by law, any claims it may have against the Agent or its affiliates for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that the Agent and its affiliates shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company.

25. Definitions. As used in this Agreement, the following terms have the respective meanings set forth below:

“Applicable Time” means (i) each Representation Date, (ii) the time of each sale of any Placement Shares pursuant to this Agreement and (iii) each Settlement Date

“Governmental Authority” means any law or statute or any judgment, order, rule, regulation or decree of any court or arbitrator or federal, state, local or foreign governmental agency or regulatory authority having jurisdiction over the Company or any of their properties or assets.

“Issuer Free Writing Prospectus” means any “issuer free writing prospectus,” as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a “road show” that is a “written communication” within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5) (i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g) under the Securities Act.

“Rule 172,” “Rule 405,” “Rule 415,” “Rule 424,” “Rule 424(b),” “Rule 430B,” and “Rule 433” refer to such rules under the Securities Act.

All references in this Agreement to financial statements and schedules and other information that is “contained,” “included” or “stated” in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to “supplements” to the Prospectus shall include, without limitation, any supplements, “wrappers” or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agent outside of the United States.

[Remainder of the page intentionally left blank]

If the foregoing correctly sets forth the understanding between the Company and the Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agent.

Very truly yours,

**ACHIEVE LIFE SCIENCES, INC.**

By: /s/ John Bencich

Name: John Bencich

Title: Chief Executive Officer (Principal Executive and  
Financial Officer)

**ACCEPTED as of the date first-above written:**

**VIRTU AMERICAS LLC**

By: /s/ Joshua R. Feldman

Name: Joshua R. Feldman

Title: Managing Director

**SCHEDULE 1**

FORM OF PLACEMENT NOTICE

From: Achieve Life Sciences, Inc.  
To: Virtu Americas LLC  
Attention: Virtu Capital Markets  
Subject: ATM -- Placement Notice

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the ATM Sales Agreement between Achieve Life Sciences, Inc., a Delaware corporation (the “Company”), and Virtu Americas LLC (the “Agent”), dated [•], 2021, the Company hereby requests that the Agent sell up to [ ] of the Company’s Common Stock, par value \$0.001 per share, at a minimum market price of \$ per share, during the time period beginning [month, day, time] and ending [month, day, time].

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**SCHEDULE 2**

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**Compensation**

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The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to up to 3.0% of the gross proceeds from each sale of Placement Shares.

**SCHEDULE 3**

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**Notice Parties**

---

The Company

John Bencich

With a copy (which shall not constitute notice) to:

Amanda Rose

Chelsea Anderson

The Agent

Jeffrey Lumby

Joshua Feldman

Conor Lumby

With a copy to

**EXHIBIT 7(1)**  
**Form of Representation Date Certificate**  
\_\_\_\_\_, 20\_\_\_\_

This Representation Date Certificate (this “Certificate”) is executed and delivered in connection with Section 7(1) of the ATM Sales Agreement (the “Agreement”), dated [•], 2021, and entered into between Achieve Life Sciences, Inc. (the “Company”) and Virtu Americas LLC. All capitalized terms used but not defined herein shall have the meanings given to such terms in the Agreement.

The Company hereby certifies as follows:

1. As of the date of this Certificate (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading and (ii) neither the Registration Statement nor the Prospectus contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein not untrue or misleading for this paragraph 1 to be true.

2. Each of the representations and warranties of the Company contained in the Agreement were, when originally made, and are, as of the date of this Certificate, true and correct in all material respects.

3. Except as waived by the Agent in writing, each of the covenants required to be performed by the Company in the Agreement on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement, has been duly, timely and fully performed in all material respects and each condition required to be complied with by the Company on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement has been duly, timely and fully complied with in all material respects.

4. Subsequent to the date of the most recent financial statements in the Prospectus, and except as described in the Prospectus, including Incorporated Documents, there has been no Material Adverse Effect.

5. No stop order suspending the effectiveness of the Registration Statement or of any part thereof has been issued, and no proceedings for that purpose have been instituted or are pending or threatened by any securities or other governmental authority (including, without limitation, the Commission).

6. No order suspending the effectiveness of the Registration Statement or the qualification or registration of the Placement Shares under the securities or Blue Sky laws of any

jurisdiction are in effect and no proceeding for such purpose is pending before, or threatened, to the Company's knowledge or in writing by, any securities or other governmental authority (including, without limitation, the Commission).

The undersigned has executed this Representation Date Certificate as of the date first written above.

**ACHIEVE LIFE SCIENCES, INC.**

By:

Name:

Title:

---

**EXHIBIT 23**

**Permitted Issuer Free Writing Prospectus**

None.

## FORM OF DEBT SECURITY

[Face of Security]

## ACHIEVE LIFE SCIENCES, INC.

[If applicable, insert—FOR PURPOSES OF THE ORIGINAL ISSUE DISCOUNT PROVISIONS OF THE INTERNAL REVENUE CODE OF 1986, THE ISSUE PRICE OF THIS SECURITY IS % OF ITS PRINCIPAL AMOUNT AT STATED MATURITY SET FORTH BELOW (ITS “PRINCIPAL AMOUNT”), THE AMOUNT OF ORIGINAL ISSUE DISCOUNT IS % OF ITS PRINCIPAL AMOUNT, THE YIELD TO MATURITY IS % AND THE ISSUE DATE IS ]

[IF THE SECURITY IS A GLOBAL SECURITY, INSERT—THIS NOTE IS A GLOBAL SECURITY. IT IS EXCHANGEABLE FOR NOTES REGISTERED IN THE NAME OF A PERSON OTHER THAN THE DEPOSITARY (AS HEREINAFTER DEFINED) OR ITS NOMINEE ONLY IN THE LIMITED CIRCUMSTANCES HEREINAFTER DESCRIBED AND MAY NOT BE TRANSFERRED EXCEPT AS A WHOLE BY THE DEPOSITARY TO A NOMINEE OF THE DEPOSITARY OR BY A NOMINEE OF THE DEPOSITARY TO THE DEPOSITARY OR ANOTHER NOMINEE OF THE DEPOSITARY OR BY THE DEPOSITARY OR A NOMINEE OF THE DEPOSITARY TO A SUCCESSOR OF THE DEPOSITARY OR A NOMINEE OF SUCH SUCCESSOR DEPOSITARY.]

No.

§  
CUSIP No.

Achieve Life Sciences, Inc., a Delaware Corporation (herein called the “Company”, which term includes any successor corporation under the Indenture referred to on the reverse hereof), for value received, hereby promises to pay to, or registered assigns, the principal sum of Dollars on [if Security is to bear interest prior to maturity, insert—, and to pay interest thereon from or from the most recent Interest Payment Date to which interest has been paid or duly provided for, semi-annually on and in each year, commencing , at the rate of % per annum, until the principal hereof is paid or made available for payment [if applicable, insert—, provided that any principal and premium, and any such installment of interest, which is overdue shall bear interest at the rate of % per annum (to the extent that the payment of such interest shall be legally enforceable), from the dates such amounts are due until they are paid or made available for payment, and such interest shall be payable on demand]. The interest so payable, and punctually paid or duly provided for, on any Interest Payment Date will, as provided in such Indenture, be paid to the Person in whose name this Security (or one or more Predecessor Securities) is registered at the close of business on the Record Date for such interest, which shall be the or (whether or not a Business Day), as the case may be, next preceding such Interest Payment Date. Any such interest not so punctually paid or duly provided for will forthwith cease to be payable to the Holder on such Record Date and may either be paid to the Person this Security (or one or more Predecessor Securities) is registered at the close of business on a Special Record Date for the payment of such Defaulted Interest to be fixed by the Trustee, notice whereof shall be given to Holders of Securities of this series not less than 10 days prior to such Special Record Date, or be paid at any time in any other lawful manner not inconsistent with the requirements of any securities exchange on which the Securities of this series may be listed, and upon such notice as may be required by such exchange, all as more fully provided in said Indenture. [If the Security is not to bear interest prior to maturity, insert—The principal of this Security shall not bear interest except in the case of a default in payment of principal upon acceleration, upon redemption or at Stated Maturity and in such case the overdue principal and any overdue premium shall bear interest at the rate of % per annum (to the extent that the payment of such interest shall be legally enforceable), from the dates such amounts are due until they are paid or made available for payment. Interest on any overdue principal or premium shall be payable on demand. [Any such interest on overdue principal or premium which is not paid on demand shall bear interest at the rate of % per annum (to the extent that the payment of such interest on interest shall be legally enforceable), from the date of such demand until the amount so demanded is paid or made available for payment. Interest on any overdue interest shall be payable on demand.]].

Payment of the principal of (and premium, if any, on) and [any such] interest on this Security will be made at the office or agency of the Company maintained for that purpose in in such coin or currency of [the United States of America] as at the time of payment is legal tender for payment of public and private debts[; provided, however, that at the option of the Company payment of interest may be made by check mailed to the address of the Person entitled thereto as such address shall appear in the Register].

Reference is hereby made to the further provisions of this Security set forth on the reverse hereof, which further provisions shall for all purposes have the same effect as if set forth at this place.

Unless the certificate of authentication hereon has been manually executed by or on behalf of the Trustee under the Indenture referred to on the reverse hereof, this Security shall not be entitled to any benefit under the Indenture or be valid or obligatory for any purpose.

IN WITNESS WHEREOF, the Company has caused this instrument to be duly executed under its corporate seal.

Dated:

Achieve Life Sciences, Inc.

By

\_\_\_\_\_ [Title]

Attest and Countersign

\_\_\_\_\_  
Secretary

[Reverse of Security.]

**ACHIEVE LIFE SCIENCES, INC.**

This Security is one of a duly authorized issue of securities of the Company (herein called the "Securities"), issued and to be issued in one or more series under an Indenture dated as of \_\_\_\_\_, (herein called the "Indenture," which term shall have the meaning assigned to it in such instrument), between the Company and \_\_\_\_\_, as trustee (herein called the "Trustee", which term includes any successor trustee under the Indenture), to which Indenture and all indentures supplemental thereto reference is hereby made for a statement of the respective rights, limitations or rights, duties and immunities thereunder of the Company, the Trustee and the Holders of the Securities and of the terms upon which the Securities are, and are to be, authenticated and delivered. This Security is one of the series designated on the face hereof [ , limited in aggregate principal amount to \$ \_\_\_\_\_ ].

[If the Security is to be subordinated, insert—The indebtedness evidenced by this Security is, to the extent and in the manner set forth in the Indenture, expressly subordinated and subject in right of payment to the prior payment in full of all Senior Indebtedness (as defined in the Indenture) of the Company. This Security is issued subject to such provisions of the Indenture, and each Holder of this Security, by accepting the same, agrees to and shall be bound by such provisions and authorizes and directs the Trustee on the Holder's behalf to take such action as may be necessary or appropriate to acknowledge or effectuate such subordination as provided in the Indenture and appoints the Trustee such Holder's attorney-in-fact for any and all such purposes.]

The Securities of this series are subject to redemption upon not less than 30 days', and no more than 60 days, notice provided in the manner set forth in the Indenture, [(1) on in any year commencing with the year and ending with the year at the Redemption Price equal to 100% of the principal amount, and (2)] at any time [on or after], as a whole or in part, at the election of the principal the following Redemption Prices (expressed as percentages of the principal amount): If redeemed [on or before \_\_\_\_\_, \_\_\_\_\_%, and if redeemed] during the 12-month period beginning of the years indicated,

<u>Year</u>	<u>Redemption Price</u>	<u>Year</u>	<u>Redemption Price</u>

and thereafter at a Redemption Price equal to \_\_\_\_\_% of the principal amount together in the case of any such redemption with accrued interest to the Redemption Date, but interest installments whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holders of such Securities of record at the close of business on the relevant record dates referred to on the face hereof, all as provided in the Indenture.

[If the Security is to be redeemable in part, insert—In the event of redemption of this Security in part only, a new Security or Securities of this series for the unredeemed portion hereof will be issued in the name of the Holder hereof upon the cancellation hereof.]

[If the Security is to be subject to repayment at the option of the Holder, insert—To be repaid at the option of the Holder, the Company must receive this Security, with the form of "Option to Elect Repayment" hereon duly completed, at an office or agency of the Company maintained for that purpose in (or at such other place of which the Company shall from time to time notify the Holder of this Security) not less than nor more than \_\_\_\_\_ days prior to the Repayment Date. The exercise of the repayment option by the Holder shall be irrevocable.]

[If the Security is not to be subject to redemption at the option of the Company, insert—The Securities are not redeemable at the option of the Company prior to Maturity.]

[If the Security is not to be an Original Issue Discount Security, insert—If an Event of Default with respect to Securities of this series shall occur and be continuing, the principal of the Securities of this series may be declared due and payable in the manner and with the effect provided in the Indenture.]

The Indenture permits, with certain exceptions as therein provided, the amendment thereof and the modification of the rights and obligations of the Company and the rights of the Holders of the Securities of each series under the Indenture to be affected at any time by the Company with the consent of the Holders of not less than a majority in aggregate principal amount of the Securities at the time Outstanding of each series to be affected.

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The Indenture also contains provisions permitting the Holders of a majority in principal amount of the Securities of each series at the time Outstanding, on behalf of the Holders of all Securities of such series, to waive compliance by the Company with certain provisions of the Indenture and certain past defaults under the Indenture and their consequences. Any such consent or waiver by the Holder of this Security shall be conclusive and binding upon such Holder and upon all future Holders of this Security and of any Security issued upon the registration of transfer hereof or in exchange hereof or in lieu hereof, whether or not notation of such consent of waiver is made upon this Security.

As provided in and subject to the provisions of the indenture, the Holder of this Security shall not have the right to institute any proceeding with respect to the Indenture or for the appointment of a receiver or trustee or for any other remedy thereunder, unless such Holder shall have previously given the Trustee written notice of a continuing Event of Default with respect to the Securities of this series, the Holders of not less than 25% in principal amount of the Securities of this series at the time Outstanding shall have made written request to the trustee to institute proceedings in respect of such Event of Default as Trustee and offered the Trustee reasonable indemnity satisfactory to it, and the Trustee shall not have received from the Holders of a majority in principal amount of Securities of this series at the time Outstanding a direction inconsistent with such request, and shall have failed to institute any such proceeding, for 90 days after receipt of such notice, request and offer of indemnity. The foregoing shall not apply to any suit instituted by the Holder of this Security for the enforcement of any payment of principal hereof or any premium or interest hereon on or after the respective due dates expressed herein.

No reference herein to the Indenture and no provision of this Security or of the Indenture shall alter or impair the obligation of the Company, which is absolute and unconditional, to pay the principal of (and premium, if any, on) and interest on this Security at the times, place and rate, and in the coin or currency, herein prescribed.

[If the Security is to be in registered form, insert—As provided in the Indenture and subject to certain limitations therein set forth, the transfer of this Security is registrable in the Register, upon surrender of this Security for registration of transfer at the office or agency of the Company in any place where the principal of (and premium, if any, on) and interest on this Security are payable, duly endorsed by, or accompanied by a written instrument of transfer in form satisfactory to the Company and the Registrar duly executed by, the Holder hereof or his attorney duly authorized in writing, and, thereupon one or more new Securities of this series, of authorized denominations and for the same aggregate principal amount, will be issued to the designated transferee or transferees.]

[The Securities of this series are issuable only in registered form in denominations of \$ [and any integral multiple] [or increments of \$ in excess] thereof. As provided in the Indenture and subject to certain limitations therein set forth, Securities of this series are exchangeable for a like aggregate principal amount of Securities of this series of a different authorized denomination, as requested by the Holder surrendering the same.]

[No service charge shall be made for any such registration of transfer or exchange, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection therewith.]

[Prior to due presentment of this Security for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name this Security is registered as the owner hereof for all purposes, whether or not this Security be overdue, and neither the Company, the Trustee nor any such agent shall be affected by notice to the contrary.]

[If the Security is a Global Security, insert—“Global Security” and “Global Securities” means a Security or Securities evidencing all or a part of a series of Securities, issued to the Depository (as hereinafter defined) for such Series or its nominee, and registered in the name of such Depository or its nominee. “Depository” means, with respect to the Securities of any series issuable or issued in whole or in part in the form of one or more Global Securities, the person designated as the Depository by the Company.

No holder of any beneficial interest in this Security held on its behalf by a Depository or a nominee of such Depository shall have any rights under the Indenture with respect to such Global Security, and such Depository or nominee may be treated by the Company, the Trustee, and any agent of the Company or the Trustee as the owner of such Global Security for all purposes whatsoever. Notwithstanding the foregoing, nothing herein shall impair, as between a Depository and such holders of beneficial interests, the operation of customary practices governing the exercise of the rights of the Depository as Holder of any Security.

This Security is exchangeable, in whole but not in part, for Securities registered in the names of Persons other than the Depository or its nominee or in the name of a successor to the Depository or a nominee of such successor depository only if (i) the Depository notifies the Company that it is unwilling or unable to continue as Depository for this Note or if at any time such Depository ceases to be a clearing agency registered under the Securities Exchange Act of 1934, as amended, and, in either case, a successor depository is not appointed by the Company within 90 days, (ii) the Company in its discretion at any time determines not to have all of the Securities of this series represented by one or more Global Security or Securities and notifies the Trustee thereof, or (iii) an Event of Default has occurred and is continuing with respect to the Securities of this series. If this Security is exchangeable pursuant to the

preceding sentence, it shall be exchangeable for Securities issuable in authorized denominations and registered in such names as the Depository holding this Security shall direct. Subject to the foregoing, this Security is not exchangeable, except for a Security or Securities of the same aggregate denominations to be registered in the name of such Depository or its nominee or in the name of a successor to the Depository or a nominee of such successor depository.]

[The Indenture entitles Holders to receive annual reports with respect to the Trustee's eligibility and qualifications to serve as Trustee by filing their names and addresses with the Trustee for that purpose within two years preceding and mailing of any such annual report.]

No recourse shall be had for the payment of the principal of (and premium, if any, on) or interest on this Security, or for any claim based hereon, or otherwise in respect hereof, or based on or in respect of the Indenture of any indenture supplemental thereto, against any incorporator, stockholder, officer or director, as such, past, present or future, of the Company or any successor corporation, whether by virtue of any constitution, statute or rule of law, or by the enforcement of any assessment or penalty or otherwise, all such liability being, by the acceptance hereof and as part of the consideration for the issue hereof, expressly waived and released.

All terms used in this Security which are defined in the Indenture shall have the meanings assigned to them in the Indenture.

This Security, including without limitation the obligation of the Company contained herein to pay the principal of (and premium, if any, on) and interest on this Security in accordance with the terms hereof and of the Indenture, shall be construed in accordance with and governed by the laws of the State of New York.

[Trustee's Certificate of Authentication.]

This is one of the Securities of the series designated herein referred to in the within-mentioned Indenture.

[Authenticating Agent for] the Trustee, as

By \_\_\_\_\_  
Authorized Officer

**ACHIEVE LIFE SCIENCES, INC.**

And

, as Trustee

**INDENTURE**

Dated as of \_\_\_\_\_,

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**CROSS-REFERENCE TABLE**

<b>TIA SECTION</b>	<b>INDENTURE SECTION</b>
310(a)(1)(2)(5)	7.10
310(a)(3)(4)	Inapplicable
310(b)	7.8; 7.10
310(c)	Inapplicable
311(a)(b)	7.11
311(c)	Inapplicable
312(a)	2.6
312(b)(c)	10.3
313(a)(b)	7.6
313(c)	7.6; 10.2
313(d)	7.6
314(a)	4.2; 4.4; 10.2
314(b)	N/A
314(c)(1)(2)	10.4; 10.5
314(c)(3)	Inapplicable
314(d)	Inapplicable
314(e)	10.5
314(f)	Inapplicable
315(a)	7.1, 7.2
315(b)	7.5; 10.2
315(c)	7.1
315(d)	7.1; 7.2
315(e)	6.11
316(a)(last sentence)	2.10
316(a)(1)(A)	6.5
316(a)(1)(B)	6.4
316(a)(2)	8.2
316(b)	6.7
316(c)	8.4
317(a)(1)	6.8
317(a)(2)	6.9
317(b)	2.5; 7.12
318(a)	10.1

Note: This Cross-Reference Table shall not, for any purpose, be deemed to be a part of the Indenture.

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INDENTURE, dated as of \_\_\_\_\_, \_\_\_\_\_, by and between Achieve Life Sciences, Inc., a Delaware corporation, as Issuer (the “Company”) and \_\_\_\_\_, a  
organized under the laws of \_\_\_\_\_, as Trustee (the “Trustee”).

## RECITALS OF THE COMPANY

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of its debentures, notes or other evidences of indebtedness to be issued in one or more series (the “Securities”), as herein provided, up to such principal amount as may from time to time be authorized in or pursuant to one or more resolutions of the Board of Directors or by supplemental indenture.

All things necessary to make this Indenture a valid agreement of the Company in accordance with its terms have been done, and the execution and delivery thereof have been in all respects duly authorized by the parties hereto.

### NOW, THEREFORE, THIS INDENTURE WITNESSETH:

For and in consideration of the premises and the purchase of the Securities by the Holders thereof, it is mutually agreed, for the equal and proportionate benefit of all Holders of the Securities of a Series thereof, as follows:

## ARTICLE 1 – DEFINITIONS AND INCORPORATION BY REFERENCE

### 1.1 DEFINITIONS.

“Affiliate” of any specified Person means any other Person which, directly or indirectly through one or more intermediaries, controls, or is controlled by or is under common control with, such specified Person. For the purposes of this definition, “control” (including, with correlative meanings, the terms “controlling,” “controlled by” and “under common control with”), as used with respect to any Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such Person, whether through the ownership of voting securities, by agreement or otherwise.

“Agent” means any Registrar, Paying Agent, co-registrar or agent for service of notices and demands.

“Board of Directors” means the Board of Directors of the Company or any committee duly authorized to act therefor.

“Board Resolution” means a copy of a resolution certified pursuant to an Officers’ Certificate to have been duly adopted by the Board of Directors of the Company and to be in full force and effect on the date of such certification which has been delivered to the Trustee.

“Capital Stock” means, with respect to any Person, any and all shares or other equivalents (however designated) of capital stock, partnership interests or any other participation, right or other interest in the nature of an equity interest in such Person or any option, warrant or other security convertible into any of the foregoing.

“Company” means the party named as such in the first paragraph of this Indenture until a successor replaces such party pursuant to Article 5 of this Indenture, and thereafter means the successor and any other primary obligor on the Securities.

“Company Order” means a written order signed in the name of the Company by two Officers, one of whom must be its Chief Executive Officer or its Chief Financial Officer.

“Company Request” means any written request signed in the name of the Company by its Chief Executive Officer, its President, any Vice President, its Chief Financial Officer or its Treasurer and attested to by its Secretary or any Assistant Secretary.

“Corporate Trust Office” means the office of the Trustee at which at any particular time its corporate trust business shall be principally administered.

“Default” means any event that is, or that with the passing of time or giving of notice or both would be, an Event of Default.

“Depository” means, with respect to the Securities of any Series issuable or issued in whole or in part in the form of one or more Global Securities, the Person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act, until a successor Depository shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Depository” shall mean each Person who is then a Depository hereunder, and if at any time there is more than one such Person, such Persons.

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“Dollars” means the currency of the United States of America.

“Euro” means the single currency of participating member states of the economic and monetary union as contemplated in the Treaty on European Union.

“Exchange Act” means the Securities Exchange Act of 1934, as amended.

“Foreign Currency” means any currency or currency unit issued by a government other than the government of the United States of America.

“Foreign Government Obligations” means, with respect to Securities that are denominated in a Foreign Currency, (i) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (ii) obligations of a Person controlled or supervised by, or acting as an agency or instrumentality of, such government, the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which, in either case under clauses (i) and (ii), are not callable or redeemable at the option of the issuer thereof.

“GAAP” means generally accepted accounting principles consistently applied as in effect in the United States of America from time to time.

“Global Security” or “Global Securities” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.2, evidencing all or part of a Series of Securities issued to the Depository for such Series or its nominee, and registered in the name of such Depository or nominee, and bearing the legend set forth in Section 2.15(c) (or such other legend(s) as may be applied to such Securities in accordance with Section 2.2(24)).

“Holder” or “Securityholder” means the Person in whose name a Security is registered on the Registrar’s books.

“Indebtedness” means (without duplication), with respect to any Person, any indebtedness at any time outstanding, secured or unsecured, contingent or otherwise, which is for borrowed money (whether or not the recourse of the lender is to the whole of the assets of such Person or only to a portion thereof), or evidenced by bonds, notes, debentures or similar instruments, or representing the balance deferred and unpaid of the purchase price of any property (excluding any balances that constitute accounts payable or trade payables, and other accrued liabilities arising in the ordinary course of business), if and to the extent any of the foregoing indebtedness would appear as a liability upon a balance sheet of such Person prepared in accordance with GAAP.

“Indenture” means this Indenture as amended, restated or supplemented from time to time.

“Interest Payment Date,” when used with respect to any Security, means the Stated Maturity of an installment of interest on such Security.

“Lien” means, with respect to any property or assets of any Person, any mortgage or deed of trust, pledge, hypothecation, assignment, deposit arrangement, security interest, lien, charge, easement, encumbrance, preference, priority or other security agreement or preferential arrangement of any kind or nature whatsoever on or with respect to such property or assets (including, without limitation, any capitalized lease obligation, conditional sales or other title retention agreement having substantially the same economic effect as any of the foregoing).

“Maturity,” when used with respect to any Security, means the date on which the principal of such Security, or an installment of principal, becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption, notice of option to elect payment or otherwise.

“Officer” means the Chief Executive Officer, the President, any Vice President, the Chief Financial Officer, the Treasurer or the Secretary of the Company, or any other officer designated by the Board of Directors, as the case may be.

“Officers’ Certificate” means, with respect to any Person, a certificate signed by the Chairman, Chief Executive Officer, President or any Senior or Executive Vice President and the Chief Financial Officer or any Treasurer of such Person, that shall comply with applicable provisions of this Indenture.

“Opinion of Counsel” means a written opinion from legal counsel, which counsel is reasonably acceptable to the Trustee. The counsel may be an employee of or counsel to the Company.



“Person” means any individual, corporation, limited liability company, partnership, joint venture, association, joint-stock company, trust, unincorporated organization or government (including any agency or political subdivision thereof).

“Redemption Date,” when used with respect to any Security to be redeemed, means the date fixed for such redemption pursuant to this Indenture.

“Responsible Officer,” when used with respect to the Trustee, means any officer within the corporate trust department or division of the Trustee (or any successor group of the Trustee) or any other officer of the Trustee customarily performing functions similar to those performed by any of the above designated officers, and also means, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of his knowledge of and familiarity with the particular subject.

“SEC” means the United States Securities and Exchange Commission as constituted from time to time, or any successor performing substantially the same functions.

“Securities” means the securities that are issued under this Indenture, as amended or supplemented from time to time pursuant to this Indenture.

“Securities Act” means the Securities Act of 1933, as amended.

“Series” or “Series of Securities” means each series of debentures, notes or other debt instruments of the Company created pursuant to Sections 2.1 and 2.2.

“Significant Subsidiary” means (i) any direct or indirect Subsidiary of the Company that would be a “significant subsidiary” as defined in Article 1, Rule 1-02 of Regulation S-X, promulgated pursuant to the Securities Act, as such regulation is in effect on the date hereof, or (ii) any group of direct or indirect Subsidiaries of the Company that, taken together as a group, would be a “significant subsidiary” as defined in Article 1, Rule 1-02 of Regulation S-X, promulgated pursuant to the Securities Act, as such regulation is in effect on the date hereof.

“Stated Maturity,” when used with respect to any Security or any installment of principal thereof or interest thereon, means the date specified in such Security as the fixed date on which the principal of such Security, or such installment of principal or interest, is due and payable, and when used with respect to any other Indebtedness, means the date specified in the instrument governing such Indebtedness as the fixed date on which the principal of such Indebtedness, or any installment of interest thereon, is due and payable.

“Subsidiary” of any specified Person means any corporation, limited liability company, partnership, joint venture, association or other business entity, whether now existing or hereafter organized or acquired, (i) in the case of a corporation, of which more than 50% of the total voting power of the Capital Stock entitled (without regard to the occurrence of any contingency) to vote in the election of directors thereof is held, directly or indirectly, by such Person or any of its Subsidiaries; or (ii) in the case of a partnership, joint venture, association or other business entity, with respect to which such Person or any of its Subsidiaries has the power to direct or cause the direction of the management and policies of such entity by contract or otherwise, or if in accordance with GAAP such entity is consolidated with such Person for financial statement purposes.

“TIA” means the Trust Indenture Act of 1939 (15 U.S. Code Section 77aaa-77bbbb) as in effect on the date of this Indenture (except as provided in Section 8.3).

“Trustee” means the party named as such in this Indenture until a successor replaces it pursuant to this Indenture, and thereafter means the successor, and if at any time there is more than one such Person, “Trustee” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“U.S. Government Obligations” means direct non-callable obligations of, or non-callable obligations guaranteed by, the United States of America for the payment of which obligation or guarantee the full faith and credit of the United States of America is pledged.

## 1.2. OTHER DEFINITIONS.

The definitions of the following terms may be found in the sections indicated as follows:

<b>TERM</b>	<b>DEFINED IN SECTION</b>
“Bankruptcy Law”	6.1
“Business Day”	10.7
“Covenant Defeasance”	9.3
“Custodian”	6.1
“Event of Default”	6.1
“Journal”	10.15
“Judgment Currency”	10.16
“Legal Defeasance”	9.2
“Legal Holiday”	10.7
“Market Exchange Rate”	10.15
“New York Paying Agent”	2.4
“Paying Agent”	2.4
“Place of Payment”	10.7
“Registrar”	2.4
“Required Currency”	10.16
“Service Agent”	2.4

## 1.3. INCORPORATION BY REFERENCE OF TRUST INDENTURE ACT.

Whenever this Indenture refers to a provision of the TIA, the portion of such provision required to be incorporated herein in order for this Indenture to be qualified under the TIA is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“Commission” means the SEC.

“Indenture securities” means the Securities.

“Indenture securityholder” means a Holder or Securityholder.

“Indenture to be qualified” means this Indenture.

“Indenture trustee” or “institutional trustee” means the Trustee.

“Obligor on the indenture securities” means the Company.

All other terms used in this Indenture that are defined by the TIA, defined in the TIA by reference to another statute or defined by SEC rule have the meanings therein assigned to them.

#### **1.4. RULES OF CONSTRUCTION.**

Unless the context otherwise requires:

- (1) a term has the meaning assigned to it herein, whether defined expressly or by reference;
- (2) an accounting term not otherwise defined has the meaning assigned to it in accordance with GAAP;
- (3) “or” is not exclusive;
- (4) words in the singular include the plural, and in the plural include the singular;
- (5) words used herein implying any gender shall apply to each gender; and
- (6) the words “herein”, “hereof” and “hereunder” and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section or other subdivision.

### **ARTICLE 2 – THE SECURITIES**

#### **2.1. ISSUABLE IN SERIES.**

The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is \$ \_\_\_\_\_, \_\_\_\_\_. The Securities may be issued in one or more Series. All Securities of a Series shall be identical except as may be set forth in a Board Resolution, a supplemental indenture or an Officers’ Certificate detailing the adoption of the terms thereof pursuant to the authority granted under a Board Resolution. In the case of Securities of a Series to be issued from time to time, the Board Resolution, Officers’ Certificate or supplemental indenture may provide for the method by which specified terms (such as interest rate, Stated Maturity, record date or date from which interest shall accrue) are to be determined. Securities may differ between Series in respect of any matters, PROVIDED, that all Series of Securities shall be equally and ratably entitled to the benefits of the Indenture.

#### **2.2. ESTABLISHMENT OF TERMS OF SERIES OF SECURITIES.**

At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection 2.2(1) and either as to such Securities within the Series or as to the Series generally in the case of Subsections 2.2(2) through 2.2(24)) by a Board Resolution, a supplemental indenture or an Officers’ Certificate, in each case, pursuant to authority granted under a Board Resolution:

- (1) the title of the Series (which shall distinguish the Securities of that particular Series from the Securities of any other Series);
- (2) any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Section 2.7, 2.8, 2.11, 3.6 or 8.5);
- (3) the price or prices (expressed as a percentage of the principal amount thereof) at which the Securities of the Series will be issued;
- (4) the date or dates on which the principal of the Securities of the Series is payable;
- (5) the rate or rates (which may be fixed or variable) per annum or, if applicable, the method used to determine such rate or rates (including, but not limited to, any commodity, commodity index, stock exchange index or financial index) at which the Securities of the Series shall bear interest, if any, the date or dates from which such interest, if any, shall accrue, the date or dates on which such interest, if any, shall commence and be payable and any regular record date for the interest payable on any Interest Payment Date;
- (6) the place or places where the principal of, and interest and premium, if any, on, the Securities of the Series shall be payable, or the method of such payment, if by wire transfer, mail or other means;
- (7) if applicable, the period or periods within which, the price or prices at which and the terms and conditions upon which the Securities of the Series may be redeemed, in whole or in part, at the option of the Company;
- (8) the obligation, if any, of the Company to redeem or purchase the Securities of the Series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof, and the period or periods within which, the price or prices at which and

the terms and conditions upon which Securities of the Series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;

(9) the dates, if any, on which and the price or prices at which the Securities of the Series will be repurchased by the Company at the option of the Holders thereof, and other detailed terms and provisions of such repurchase obligations;

(10) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the Securities of the Series shall be issuable;

(11) the forms of the Securities of the Series in bearer (if to be issued outside of the United States of America) or fully registered form (and, if in fully registered form, whether the Securities will be issuable as Global Securities);

(12) if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the Maturity thereof pursuant to Section 6.2;

(13) the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, including, but not limited to, the Euro, and, if such currency of denomination is a composite currency other than the Euro, the agency or organization, if any, responsible for overseeing such composite currency;

(14) the designation of the currency, currencies or currency units in which payment of the principal of, and interest and premium, if any, on, the Securities of the Series will be made;

(15) if payments of principal of, or interest or premium, if any, on, the Securities of the Series are to be made in one or more currencies or currency units other than that or those in which such Securities are denominated, the manner in which the exchange rate with respect to such payments will be determined;

(16) the manner in which the amounts of payment of principal of, or interest and premium, if any, on, the Securities of the Series will be determined, if such amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;

(17) the provisions, if any, relating to any collateral provided for the Securities of the Series;

(18) any addition to or change in the covenants set forth in Articles 4 or 5 that applies to Securities of the Series;

(19) any addition to or change in the Events of Default which applies to any Securities of the Series, any provision for the payment of additional interest or liquidated damages in connection with any Event of Default, and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.2;

(20) the terms and conditions, if any, for conversion of the Securities into or exchange of the Securities for shares of common stock, preferred stock, other debt securities or warrants for common stock, preferred stock or other securities of any kind of the Company that apply to Securities of the Series;

(21) any Trustees, depositories, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein;

(22) the terms and conditions, if any, upon which the Securities shall be subordinated in right of payment to other Indebtedness of the Company;

(23) if applicable, that the Securities of the Series, in whole or any specified part, shall be defeasible pursuant to Article 9; and

(24) any other terms of the Securities of the Series (which terms shall not be inconsistent with the provisions of this Indenture, except as permitted by Section 8.1, but which may modify or delete any provision of this Indenture insofar as it applies to such Series).

All Securities of any one Series need not be issued at the same time, and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture or Officers' Certificate referred to above, however, the authorized principal amount of any Series may not be increased to provide for issuances of additional Securities of such Series, unless otherwise provided in such Board Resolution, supplemental indenture or Officers' Certificate.

### **2.3. EXECUTION AND AUTHENTICATION.**

The Securities shall be executed on behalf of the Company by two Officers of the Company or an Officer and an Assistant Secretary of the Company. Each such signature may be either manual or facsimile. The Company's seal may be impressed, affixed, imprinted or reproduced on the Securities and may be in facsimile form.

If an Officer whose signature is on a Security no longer holds that office at the time the Security is authenticated, the Security shall nevertheless be valid.

A Security shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent. The signature shall be conclusive evidence that the Security has been authenticated under this Indenture. The Trustee shall at any time, and from time to time, authenticate Securities for original issue in the principal amount provided in the Board Resolution, supplemental indenture hereto or Officers' Certificate, upon receipt by the Trustee of a Company Order. Such Company Order may authorize authentication and delivery pursuant to oral or electronic instructions from the Company or its duly authorized agent or agents, which oral instructions shall be promptly confirmed in writing. Each Security shall be dated the date of its authentication.

The aggregate principal amount of Securities of any Series outstanding at any time may not exceed any limit upon the maximum principal amount for such Series set forth in the Board Resolution, supplemental indenture hereto or Officers' Certificate delivered pursuant to Section 2.2, except as provided in Section 2.8.

Prior to the issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.1) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officers' Certificate complying with Section 10.4, and (c) an Opinion of Counsel complying with Section 10.4.

The Trustee shall have the right to decline to authenticate and deliver any Securities of any Series: (a) if the Trustee, being advised in writing by outside counsel, determines that such action may not lawfully be taken; or (b) if the Trustee in good faith by its board of directors or trustees, executive committee or a trust committee of directors and/or vice-presidents shall reasonably determine that such action would expose the Trustee to personal liability, or cause it to have a conflict of interest with respect to Holders of any then outstanding Series of Securities.

The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Any appointment shall be evidenced by an instrument signed by an authorized officer of the Trustee, a copy of which shall be furnished to the Company. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

#### **2.4. REGISTRAR AND PAYING AGENT.**

The Company shall maintain in each Place of Payment for any Series of Securities (i) an office or agency where such Securities may be presented for registration of transfer or for exchange ("Registrar"), (ii) an office or agency where such Securities may be presented for payment ("Paying Agent") (PROVIDED that the Company shall at all times maintain a Paying Agent in the Borough of Manhattan, City of New York, State of New York (the "New York Paying Agent"), and PROVIDED, FURTHER, that at the option of the Company payment of interest may be made by check mailed to the address of the Person entitled thereto as such address shall appear in the register for the Securities maintained by the Registrar), and (iii) an office or agency where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served ("Service Agent"). The Registrar shall keep a register of the Securities and of their transfer and exchange. The Company may have one or more co-registrars and one or more additional paying agents. The Company shall give prompt written notice to the Trustee of the location, and any change in the location, of such office or agency. If at any time the Company shall fail to maintain any such required office, or to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the address of the Trustee as set forth in Section 10.2. If the Company acts as Paying Agent, it shall segregate the money held by it for the payment of principal of, and interest and premium, if any, on, the Securities and hold it as a separate trust fund. The Company may change any Paying Agent, Registrar, co-registrar or any other Agent without notice to any Securityholder.

The Company may also from time to time designate one or more other offices or agencies where the Securities may be presented or surrendered for any or all such purposes, and may from time to time rescind such designations; PROVIDED, HOWEVER, that no such designation or rescission shall in any manner relieve the Company of its obligation to maintain an office or agency in each Place of Payment for Securities of any Series for such purposes. The Company hereby initially designates the Corporate Trust Office of the Trustee as such office of the Company. The Company shall give prompt written notice to the Trustee of such designation or rescission, and of any change in the location of any such other office or agency.

The Company shall enter into an appropriate agency agreement with any Registrar or Paying Agent not a party to this Indenture. The agreement shall implement the provisions of this Indenture that relate to such Agent. The Company shall notify the Trustee of the name and address of any such Agent. If the Company fails to maintain a Registrar or Paying Agent, or agent for service of notices and

demands, or fails to give the foregoing notice, the Trustee shall act as such. The Company hereby appoints the Trustee as the initial Registrar, Paying Agent and Service Agent for each Series unless another Registrar, Paying Agent or Service Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued. The Company designates, as the New York Paying Agent, with offices at .

## **2.5. PAYING AGENT TO HOLD ASSETS IN TRUST.**

The Trustee as Paying Agent shall, and the Company shall require each Paying Agent other than the Trustee to agree in writing that each Paying Agent shall, hold in trust for the benefit of the Holders of any Series of Securities or the Trustee all assets held by the Paying Agent for the payment of principal of, or interest or premium, if any, on, such Series of Securities (whether such assets have been distributed to it by the Company or any other obligor on such Series of Securities), and the Company and the Paying Agent shall notify the Trustee in writing of any Default by the Company (or any other obligor on such Series of Securities) in making any such payment. The Company at any time may require a Paying Agent to distribute all assets held by it to the Trustee and account for any assets disbursed, and the Trustee may, at any time during the continuance of any payment default with respect to any Series of Securities, upon written request to a Paying Agent, require such Paying Agent to distribute all assets held by it to the Trustee and to account for any assets distributed. Upon distribution to the Trustee of all assets that shall have been delivered by the Company to the Paying Agent, the Paying Agent shall have no further liability for such assets.

## **2.6. SECURITYHOLDER LISTS.**

The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Securityholders of each Series of Securities. If the Trustee is not the Registrar, the Company shall furnish to the Trustee as of each regular record date for the payment of interest on the Securities of a Series and before each related Interest Payment Date, and at such other times as the Trustee may request in writing, a list in such form and as of such date as the Trustee may reasonably require of the names and addresses of Securityholders of each Series of Securities.

## **2.7. TRANSFER AND EXCHANGE.**

When Securities of a Series are presented to the Registrar with a request to register the transfer thereof, the Registrar shall register the transfer as requested if the requirements of applicable law are met, and when such Securities of a Series are presented to the Registrar with a request to exchange them for an equal principal amount of other authorized denominations of Securities of the same Series, the Registrar shall make the exchange as requested. To permit transfers and exchanges, upon surrender of any Security for registration of transfer at the office or agency maintained pursuant to Section 2.4, the Company shall execute and the Trustee shall authenticate Securities at the Registrar's request.

If Securities are issued as Global Securities, the provisions of Section 2.15 shall apply.

All Securities issued upon any registration of transfer or exchange of Securities shall be the valid obligations of the Company, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such registration of transfer or exchange.

Every Security presented or surrendered for registration of transfer or for exchange shall (if so required by the Company or the Registrar or a co-registrar) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Registrar or a co-registrar, duly executed by the Holder thereof or his attorney duly authorized in writing.

Any exchange or transfer shall be without charge, except that the Company may require payment by the Holder of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation to a transfer or exchange, but this provision shall not apply to any exchange pursuant to Section 2.11, 3.6 or 8.5. The Trustee shall not be required to register transfers of Securities of any Series, or to exchange Securities of any Series, for a period of 15 days before the record date for selection for redemption of such Securities. The Trustee shall not be required to exchange or register transfers of Securities of any Series called or being called for redemption in whole or in part, except the unredeemed portion of such Security being redeemed in part.

## **2.8. REPLACEMENT SECURITIES.**

If a mutilated Security is surrendered to the Trustee, or if the Holder of a Security presents evidence to the satisfaction of the Company and the Trustee that the Security has been lost, destroyed or wrongfully taken, the Company shall issue and the Trustee shall authenticate a replacement Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. An indemnity bond may be required by the Company or the Trustee that is sufficient in the

reasonable judgment of the Company or the Trustee, as the case may be, to protect the Company, the Trustee or any Agent from any loss which any of them may suffer if a Security is replaced. The Company may charge such Holder for the Company's out-of-pocket expenses in replacing a Security, including the fees and expenses of the Trustee. Every replacement Security shall constitute an original additional obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that Series duly issued hereunder.

## **2.9. OUTSTANDING SECURITIES.**

Securities outstanding at any time are all Securities authenticated by the Trustee, except for those canceled by it, those delivered to it for cancellation and those described in this Section 2.9 as not outstanding.

If a Security is replaced pursuant to Section 2.8 (other than a mutilated Security surrendered for replacement), it ceases to be outstanding until the Company and the Trustee receive proof satisfactory to each of them that the replaced Security is held by a bona fide purchaser. A mutilated Security ceases to be outstanding upon surrender of such Security and replacement thereof pursuant to Section 2.8.

If a Paying Agent holds on a Redemption Date or the Stated Maturity money sufficient to pay the principal of, premium, if any, and accrued interest on, Securities payable on that date, and is not prohibited from paying such money to the Holders thereof pursuant to the terms of this Indenture (PROVIDED, that if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made), then on and after that date such Securities cease to be outstanding and interest on them ceases to accrue.

A Security does not cease to be outstanding solely because the Company or an Affiliate holds the Security.

## **2.10. WHEN TREASURY SECURITIES DISREGARDED; DETERMINATION OF HOLDERS' ACTION.**

In determining whether the Holders of the required aggregate principal amount of the Securities of any Series have concurred in any direction, waiver or consent, the Securities of any Series owned by the Company or any other obligor on such Securities, or by any Affiliate of any of them, shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such direction, waiver or consent, only Securities of such Series which the Trustee actually knows are so owned shall be so disregarded. Securities of such Series so owned which have been pledged in good faith shall not be disregarded if the pledgee establishes to the satisfaction of the Trustee the pledgee's right so to act with respect to the Securities of such Series and that the pledgee is not the Company or any other obligor on the Securities of such Series, or an Affiliate of any of them.

## **2.11. TEMPORARY SECURITIES.**

Until definitive Securities are ready for delivery, the Company may prepare and execute, and the Trustee shall authenticate, temporary Securities. Temporary Securities shall be substantially in the form, and shall carry all rights, of definitive Securities, but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and execute, and the Trustee shall authenticate, definitive Securities in exchange for temporary Securities without charge to the Holder.

## **2.12. CANCELLATION.**

All Securities surrendered for payment, redemption or registration of transfer or exchange, or for credit against any sinking fund payment, shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee for cancellation. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and may deliver to the Trustee (or to any other Person for delivery to the Trustee) for cancellation any Securities previously authenticated hereunder which the Company has not issued and sold. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for transfer, exchange or payment. The Trustee or, at the direction of the Trustee, the Registrar or the Paying Agent, and no one else, shall cancel, and at the written request of the Company shall dispose of, all Securities surrendered for transfer, exchange, payment or cancellation. If the Company shall acquire any of the Securities, such acquisition shall not operate as a redemption or satisfaction of the Indebtedness represented by such Securities unless and until the same are surrendered to the Trustee for cancellation pursuant to this Section 2.12. No Securities shall be authenticated in lieu of or in exchange for any Securities cancelled as provided in this Section 2.12, except as expressly permitted by this Indenture.

## **2.13. PAYMENT OF INTEREST; DEFAULTED INTEREST; COMPUTATION OF INTEREST.**

Except as otherwise provided as contemplated by Section 2.2 with respect to any Series of Securities, interest on any Security which is payable, and is punctually paid or duly provided for, on any Interest Payment Date shall be paid to the Person in whose name that Security is registered at the close of business on the regular record date for such interest, as provided in the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the terms of such Series.

If the Company defaults in a payment of interest on the Securities, it shall pay the defaulted amounts, plus any interest payable on defaulted amounts pursuant to Section 4.1, to the Persons who are Securityholders on a subsequent special record date, which date shall be the 15th day next preceding the date fixed by the Company for the payment of defaulted interest, or the next succeeding Business Day if such date is not a Business Day. At least 15 days before the special record date, the Company shall mail or cause to be mailed to each Securityholder, with a copy to the Trustee, a notice that states the special record date, the payment date and the amount of defaulted interest, and interest payable on such defaulted interest, if any, to be paid.

Except as otherwise specified as contemplated by Section 2.2 for Securities of any Series, interest on the Securities of each Series shall be computed on the basis of a 360-day year of twelve 30-day months.

#### **2.14. CUSIP NUMBER.**

The Company in issuing the Securities may use one or more "CUSIP" numbers, and, if the Company does so, the Trustee shall use the CUSIP number(s) in notices of redemption or exchange as a convenience to Holders, PROVIDED, that any such notice may state that no representation is made as to the correctness or accuracy of the CUSIP number(s) printed in the notice or on the Securities, and that reliance may be placed only on the other identification numbers printed on the Securities, and that any such redemption or exchange shall not be affected by any defect in or omission of any such numbers.

#### **2.15. PROVISIONS FOR GLOBAL SECURITIES.**

(a) A Board Resolution, a supplemental indenture hereto or an Officers' Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities, and the Depository for such Global Securities or Securities.

(b) Notwithstanding any provisions to the contrary contained in Section 2.7 and in addition thereto, if, and only if the Depository (i) at any time is unwilling or unable to continue as Depository for such Global Security or ceases to be a clearing agency registered under the Exchange Act and (ii) a successor Depository is not appointed by the Company within 90 days after the date the Company is so informed in writing or becomes aware of the same, the Company promptly will execute and deliver to the Trustee definitive Securities, and the Trustee, upon receipt of a Company Request for the authentication and delivery of such definitive Securities (which the Company will promptly execute and deliver to the Trustee) and an Officers' Certificate to the effect that such Global Security shall be so exchangeable, will authenticate and deliver definitive Securities, without charge, registered in such names and in such authorized denominations as the Depository shall direct in writing (pursuant to instructions from its direct and indirect participants or otherwise) in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms. Upon the exchange of a Global Security for definitive Securities, such Global Security shall be canceled by the Trustee. Unless and until it is exchanged in whole or in part for definitive Securities, as provided in this Section 2.15(b), a Global Security may not be transferred except as a whole by the Depository with respect to such Global Security to a nominee of such Depository, by a nominee of such Depository to such Depository or another nominee of such Depository or by the Depository or any such nominee to a successor Depository or a nominee of such a successor Depository.

(c) Any Global Security issued hereunder shall bear a legend in substantially the following form:

"This Security is a Global Security within the meaning of the Indenture hereinafter referred to, and is registered in the name of the Depository or a nominee of the Depository. This Security is exchangeable for Securities registered in the name of a Person other than the Depository or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depository to a nominee of the Depository, by a nominee of the Depository to the Depository or another nominee of the Depository or by the Depository or any such nominee to a successor Depository or a nominee of such a successor Depository."

(d) The Depository, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

(e) Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.2, payment of the principal of, and interest and premium, if any, on, any Global Security shall be made to the Depository or its nominee in its capacity as the Holder thereof.



(f) Except as provided in Section 2.15(e) above, the Company, the Trustee and any Agent shall treat a Person as the Holder of such principal amount of outstanding Securities of any Series represented by a Global Security as shall be specified in a written statement of the Depository (which may be in the form of a participants' list for such Series) with respect to such Global Security, for purposes of obtaining any consents, declarations, waivers or directions required to be given by the Holders pursuant to this Indenture, PROVIDED, that until the Trustee is so provided with a written statement, it may treat the Depository or any other Person in whose name a Global Security is registered as the owner of such Global Security for the purpose of receiving payment of the principal of, and any premium and (subject to Section 2.13) any interest on, such Global Security and for all other purposes whatsoever, and none of the Company, the Trustee or any agent of the Company or the Trustee shall be affected by notice to the contrary.

#### **2.16. PERSONS DEEMED OWNERS.**

Prior to due presentment of a Security for registration of transfer, the Company, the Trustee, the Registrar and any agent of the Company, the Registrar or the Trustee may treat the Person in whose name such Security is registered as the owner of such Security for the purpose of receiving payment of the principal of, and any premium and (subject to Section 2.13) any interest on, such Security and for all other purposes whatsoever, and none of the Company, the Trustee, the Registrar or any agent of the Company, the Trustee or the Registrar shall be affected by notice to the contrary.

### **ARTICLE 3 – REDEMPTION**

#### **3.1. NOTICES TO TRUSTEE.**

The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities, or may covenant to redeem and pay the Series of Securities or any part thereof, prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities or the related Board Resolution, supplemental indenture or Officers' Certificate. If a Series of Securities is redeemable and the Company elects to redeem all or part of such Series of Securities, it shall notify the Trustee of the Redemption Date and the principal amount of Securities to be redeemed at least 45 days (unless a shorter notice shall be satisfactory to the Trustee) before the Redemption Date. Any such notice may be canceled at any time prior to notice of such redemption being mailed to any Holder, and shall thereby be void and of no effect.

#### **3.2. SELECTION BY TRUSTEE OF SECURITIES TO BE REDEEMED.**

Unless otherwise indicated for a particular Series of Securities by a Board Resolution, a supplemental indenture or an Officers' Certificate, if fewer than all of the Securities of a Series are to be redeemed, the Trustee shall select the Securities of a Series to be redeemed pro rata, by lot or by any other method that the Trustee considers fair and appropriate (unless the Company specifically directs the Trustee otherwise) and, if such Securities are listed on any securities exchange, by a method that complies with the requirements of such exchange.

The Trustee shall make the selection from Securities of a Series outstanding and not previously called for redemption, and shall promptly notify the Company in writing of the Securities selected for redemption and, in the case of any Security selected for partial redemption, the principal amount thereof to be redeemed at least 35 but not more than 60 days before the Redemption Date. Securities of a Series in denominations of \$1,000 may be redeemed only in whole. The Trustee may select for redemption portions of the principal of Securities of a Series that have denominations larger than \$1,000. Securities of a Series and portions of them it selects shall be in amounts of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.2(10), the minimum principal denomination for each Series and integral multiples thereof. Provisions of this Indenture that apply to Securities called for redemption also apply to portions of Securities called for redemption.

#### **3.3. NOTICE OF REDEMPTION.**

Unless otherwise indicated for a particular Series by Board Resolution, a supplemental indenture hereto or an Officers' Certificate, at least 30 days, and no more than 60 days, before a Redemption Date, the Company shall mail, or cause to be mailed, a notice of redemption by first-class mail to each Holder of Securities to be redeemed at his or her last address as the same appears on the registry books maintained by the Registrar. The notice shall identify the Securities to be redeemed and shall state:

- (1) the Redemption Date;
- (2) the redemption price, and that such redemption price shall become due and payable on the Redemption Date;

(3) if any Security of a Series is being redeemed in part, the portion of the principal amount of such Security of a Series to be redeemed and that, after the Redemption Date and upon surrender of such Security of a Series, a new Security or Securities in principal amount equal to the unredeemed portion will be issued;

(4) the name and address of the Paying Agent;

(5) that Securities of a Series called for redemption must be surrendered to the Paying Agent to collect the redemption price, and the place or places where each such Security is to be surrendered for such payment;

(6) that, unless the Company defaults in making the redemption payment, interest on the Securities of a Series called for redemption ceases to accrue on the Redemption Date, and the only remaining right of the Holders of such Securities is to receive payment of the redemption price upon surrender to the Paying Agent of the Securities redeemed;

(7) if fewer than all of the Securities of a Series are to be redeemed, the identification of the particular Securities of a Series (or portion thereof) to be redeemed, as well as the aggregate principal amount of Securities of a Series to be redeemed and the aggregate principal amount of Securities of a Series to be outstanding after such partial redemption.

(8) the CUSIP number, if any, printed on the Securities being redeemed; and

(9) that no representation is made as to the correctness or accuracy of the CUSIP number, if any, listed in such notice or printed on the Securities.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at the Company's sole expense.

### **3.4. EFFECT OF NOTICE OF REDEMPTION.**

Once the notice of redemption described in Section 3.3 is mailed, Securities of a Series called for redemption become due and payable on the Redemption Date and at the redemption price, plus interest, if any, accrued to the Redemption Date. Upon surrender to the Trustee or Paying Agent, such Securities of a Series shall be paid at the redemption price, plus accrued interest, if any, to the Redemption Date; PROVIDED, that if the Redemption Date is after a regular interest payment record date and on or prior to the next Interest Payment Date, the accrued interest shall be payable to the Holder of the redeemed Securities registered on the relevant record date, as specified by the Company in the notice to the Trustee pursuant to Section 3.1.

### **3.5. DEPOSIT OF REDEMPTION PRICE.**

On or prior to the Redemption Date (but no later than 11:00 A.M. Eastern Time on such date), the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date other than Securities or portions thereof called for redemption on that date which have been delivered by the Company to the Trustee for cancellation.

On and after any Redemption Date, if money sufficient to pay the redemption price of, and accrued interest on, Securities called for redemption shall have been made available in accordance with the preceding paragraph and the Company and the Paying Agent are not prohibited from paying such moneys to Holders, the Securities called for redemption will cease to accrue interest and the only right of the Holders of such Securities will be to receive payment of the redemption price of and, subject to the proviso in Section 3.4, accrued and unpaid interest on such Securities to the Redemption Date. If any Security called for redemption shall not be so paid, interest will be paid, from the Redemption Date until such redemption payment is made, on the unpaid principal of the Security and any interest or premium, if any, not paid on such unpaid principal, in each case, at the rate and in the manner provided in the Securities.

### **3.6. SECURITIES REDEEMED IN PART.**

Upon surrender of a Security of a Series that is redeemed in part, the Company shall execute, and the Trustee shall authenticate, for a Holder a new Security of the same Series equal in principal amount to the unredeemed portion of the Security surrendered.

## **ARTICLE 4 – COVENANTS**

### **4.1. PAYMENT OF SECURITIES.**

The Company shall pay the principal of, and interest and premium, if any, on, each Series of Securities on the dates and in the manner provided in such Securities and this Indenture.

An installment of principal or interest shall be considered paid on the date it is due if the Trustee or Paying Agent holds on that date money designated for and sufficient to pay such installment and is not prohibited from paying such money to the Holders pursuant to the terms of this Indenture or otherwise.

The Company shall pay interest on overdue principal, and overdue interest, to the extent lawful, at the rate specified in the Series of Securities.

#### **4.2. SEC REPORTS.**

The Company will deliver to the Trustee within 15 days after the filing of the same with the SEC, copies of the quarterly and annual reports and of the information, documents and other reports, if any, which the Company is required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act; PROVIDED, HOWEVER, that each such report or document will be deemed to be so delivered to the Trustee if the Company files such report or document with the SEC through the SEC's EDGAR database no later than the time such report or document is required to be filed with the SEC pursuant to the Exchange Act. Notwithstanding that the Company may not be subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, the Company will file with the SEC, to the extent permitted, and provide the Trustee with, such quarterly and annual reports and such information, documents and other reports specified in Sections 13 and 15(d) of the Exchange Act. The Company will also comply with the other provisions of TIA Section 314(a).

#### **4.3. WAIVER OF STAY, EXTENSION OR USURY LAWS.**

The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, or plead (as a defense or otherwise) or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension, usury or other law which would prohibit or forgive the Company from paying all or any portion of the principal of, and/or interest and premium, if any, on, the Securities as contemplated herein, wherever enacted, now or at any time hereafter in force, or which may affect the covenants or the performance of this Indenture; and the Company hereby expressly waives (to the extent that they may lawfully do so) all benefit or advantage of any such law, and covenants that it will not hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law had been enacted.

#### **4.4. COMPLIANCE CERTIFICATE.**

(a) The Company shall deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, an Officers' Certificate which complies with TIA Section 314(a)(4) stating that a review of the activities of the Company and its Subsidiaries during such fiscal year has been made under the supervision of the signing Officers with a view to determining whether the Company has kept, observed, performed and fulfilled its obligations under this Indenture, and further stating, as to each such Officer signing such certificate, that to the best of his or her knowledge the Company has kept, observed, performed and fulfilled each and every covenant contained in this Indenture and that there is no default in the performance or observance of any of the terms, provisions and conditions hereof (or, if a Default or Event of Default shall have occurred, describing all such Defaults or Events of Default of which he or she may have knowledge and what action the Company is taking or proposes to take with respect thereto) and that to the best of his or her knowledge no event has occurred and remains in existence by reason of which payments on account of the principal of, or interest or premium, if any, on, the Securities is prohibited, or if such event has occurred, a description of the event and what action the Company is taking or proposes to take with respect thereto.

(b)(i) If any Default or Event of Default has occurred and is continuing or (ii) if any Holder seeks to exercise any remedy hereunder with respect to a claimed Default under this Indenture or the Securities, within five Business Days after the Company becoming aware of such occurrence the Company shall deliver to the Trustee an Officers' Certificate specifying such event, notice or other action and what action the Company is taking or proposes to take with respect thereto.

#### **4.5. CORPORATE EXISTENCE.**

Subject to Article 5, the Company shall do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence, in accordance with the organizational documents (as the same may be amended from time to time) of the Company and the rights (charter and statutory), licenses and franchises of the Company; PROVIDED, HOWEVER, that the Company shall not be required to preserve any such right, license or franchise, or its corporate existence, if the Board of Directors shall

determine that the preservation thereof is no longer desirable in the conduct of the business of the Company and that the loss thereof is not adverse in any material respect to the Holders.

## **ARTICLE 5 – SUCCESSOR CORPORATION**

### **5.1. LIMITATION ON CONSOLIDATION, MERGER AND SALE OF ASSETS.**

(a) The Company will not, in any transaction or series of transactions, merge or consolidate with or into, or sell, assign, convey, transfer, lease or otherwise dispose of all or substantially all of its properties and assets (as an entirety or substantially as an entirety in one transaction or a series of related transactions), to any Person or Persons, unless at the time of and after giving effect thereto (i) either (A) if the transaction or series of transactions is a merger or consolidation, the Company shall be the surviving Person of such merger or consolidation, or (B) the Person formed by such consolidation or into which the Company is merged or to which the properties and assets of the Company are transferred (any such surviving Person or transferee Person being the “Surviving Entity”) shall be a corporation organized and existing under the laws of the United States of America, any state thereof or the District of Columbia, or a corporation or comparable legal entity organized under the laws of a foreign jurisdiction and shall expressly assume by a supplemental indenture executed and delivered to the Trustee, in form reasonably satisfactory to the Trustee, all of the obligations of the Company (including, without limitation, the obligation to pay the principal of, and premium and interest, if any, on, the Securities and the performance of the other covenants) under the Securities of each Series and this Indenture, and in each case, this Indenture shall remain in full force and effect; and (ii) immediately before and immediately after giving effect to such transaction or series of transactions on a pro forma basis (including, without limitation, any Indebtedness incurred or anticipated to be incurred in connection with or in respect of such transaction or series of transactions), no Default or Event of Default shall have occurred and be continuing.

(b) In connection with any consolidation, merger or transfer of assets contemplated by this Section 5.1, the Company shall deliver, or cause to be delivered, to the Trustee, in form and substance reasonably satisfactory to the Trustee, an Officers’ Certificate and an Opinion of Counsel, each stating that such consolidation, merger or transfer, and the supplemental indenture in respect thereto, comply with this Section 5.1, and that all conditions precedent herein provided for relating to such transaction or transactions have been complied with.

### **5.2. SUCCESSOR PERSON SUBSTITUTED.**

Upon any consolidation, merger or transfer of all or substantially all of the assets of the Company in accordance with Section 5.1 above, the successor corporation formed by such consolidation, or into which the Company is merged or to which such transfer is made, shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor corporation had been named as the Company herein, and thereafter (except with respect to any such transfer which is a lease) the predecessor corporation shall be relieved of all obligations and covenants under this Indenture and the Securities.

## **ARTICLE 6 – DEFAULTS AND REMEDIES**

### **6.1. EVENTS OF DEFAULT.**

“Events of Default,” wherever used herein with respect to Securities of any Series, means any one of the following events, unless in the establishing Board Resolution, supplemental indenture or Officers’ Certificate, it is provided that such Series shall not have the benefit of said Event of Default:

- (1) there is a default in the payment of any principal of, or premium, if any, on, the Securities when the same becomes due and payable at Maturity, upon acceleration, redemption or otherwise;
- (2) there is a default in the payment of any interest on any Security of a Series when the same becomes due and payable, and the Default continues for a period of 30 days;
- (3) the Company defaults in the observance or performance of any other covenant in the Securities of a Series or in this Indenture for 90 days after written notice from the Trustee or the Holders of not less than 25% in the aggregate principal amount of the Securities of such Series then outstanding, which notice must specify the Default, demand that it be remedied and state that the notice is a “Notice of Default”;
- (4) the Company or any Significant Subsidiary pursuant to or within the meaning of any Bankruptcy Law:
  - (A) commences a voluntary case,

- (B) consents to the entry of an order for relief against it in an involuntary case,
- (C) consents to the appointment of a Custodian of it or for all or substantially all of its property,
- (D) makes a general assignment for the benefit of its creditors, or
- (E) generally is not paying its debts as they become due;

(5) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:

(A) is for relief against the Company or any Significant Subsidiary in an involuntary case;

(B) appoints a Custodian of the Company or any Significant Subsidiary, or for all or substantially all of the property of the Company or any Significant Subsidiary; or

(C) orders the liquidation of the Company or any Significant Subsidiary, and the order or decree remains unstayed and in effect for 90 consecutive days; or

(6) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate, in accordance with Section 2.2(19).

The term "Bankruptcy Law" means Title 11, U.S. Code, or any similar federal or state law for the relief of debtors. The term "Custodian" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

The Trustee may withhold notice of any Default (except in the payment of the principal of, or interest or premium, if any, on, the Securities) to the Holders of the Securities of any Series in accordance with Section 7.5. When a Default is cured, it ceases to exist.

## **6.2. ACCELERATION.**

If an Event of Default with respect to Securities of any Series at the time outstanding (other than an Event of Default arising under Section 6.1(4) or (5)) occurs and is continuing, the Trustee by written notice to the Company, or the Holders of not less than 25% in aggregate principal amount of the Securities of that Series then outstanding by written notice to the Company and the Trustee, may declare that the entire principal amount of all the Securities of that Series then outstanding plus accrued and unpaid interest to the date of acceleration are immediately due and payable, in which case such amounts shall become immediately due and payable; PROVIDED, HOWEVER, that after such acceleration but before a judgment or decree based on such acceleration is obtained by the Trustee, the Holders of a majority in aggregate principal amount of the outstanding Securities of that Series may rescind and annul such acceleration and its consequences if (i) all existing Events of Default, other than the nonpayment of accelerated principal, interest or premium, if any, that has become due solely because of the acceleration, have been cured or waived, (ii) to the extent the payment of such interest is lawful, interest on overdue installments of interest and overdue principal, which has become due otherwise than by such declaration of acceleration, has been paid and (iii) the rescission would not conflict with any judgment or decree. No such rescission shall affect any subsequent Default or impair any right consequent thereto. In case an Event of Default specified in Section 6.1(4) or (5) with respect to the Company occurs, such principal, premium, if any, and interest amount with respect to all of the Securities of that Series shall be due and payable immediately without any declaration or other act on the part of the Trustee or the Holders of the Securities of that Series.

## **6.3. REMEDIES.**

If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing, the Trustee may pursue any available remedy by proceeding at law or in equity to collect the payment of the principal of, or interest and premium, if any, on, the Securities of that Series, or to enforce the performance of any provision of the Securities of that Series or this Indenture.

The Trustee may maintain a proceeding even if it does not possess any of the Securities of that Series or does not produce any of them in the proceeding. A delay or omission by the Trustee or any Securityholder in exercising any right or remedy accruing upon an Event of Default shall not impair the right or remedy or constitute a waiver of or acquiescence in the Event of Default. No remedy is exclusive of any other remedy. All available remedies are cumulative to the extent permitted by law.

## **6.4. WAIVER OF PAST DEFAULTS AND EVENTS OF DEFAULT.**

Subject to Sections 6.2, 6.7 and 8.2, the Holders of a majority in principal amount of the Securities of any Series then outstanding have the right to waive any existing Default or Event of Default with respect to such Series or compliance with any provision of this Indenture (with respect to such Series) or the Securities of such Series. Upon any such waiver, such Default with respect to such Series shall cease to exist, and any Event of Default with respect to such Series arising therefrom shall be deemed to

have been cured for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or Event of Default or impair any right consequent thereto. This Section 6.4 shall be in lieu of TIA Section 316(a)(1)(B), and TIA Section 316(a)(1)(B) is hereby expressly excluded from this Indenture and Section as permitted by the TIA.

#### **6.5. CONTROL BY MAJORITY.**

Subject to Sections 6.2, 6.7 and 8.2, the Holders of a majority in principal amount of the Securities of any Series then outstanding may direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on the Trustee by this Indenture with respect to such Series. The Trustee, however, may refuse to follow any direction that conflicts with law or this Indenture, or that the Trustee determines may be unduly prejudicial to the rights of another Securityholder, or that may involve the Trustee in personal liability; PROVIDED, that the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction. This Section 6.5 shall be in lieu of TIA Section 316(a)(1)(A), and TIA Section 316(a)(1)(A) is hereby expressly excluded from this Indenture and Section as permitted by the TIA.

#### **6.6. LIMITATION ON SUITS.**

Subject to Section 6.7, a Securityholder may not institute any proceeding or pursue any remedy with respect to this Indenture or the Securities of a Series unless:

- (1) the Holder gives to the Trustee written notice of a continuing Event of Default with respect to the Securities of that Series;
- (2) the Holders of at least 25% in aggregate principal amount of the Securities of such Series then outstanding make a written request to the Trustee to pursue the remedy;
- (3) such Holder or Holders offer to the Trustee indemnity reasonably satisfactory to the Trustee against any loss, liability or expense to be incurred in compliance with such request;
- (4) the Trustee does not comply with the request within 60 days after receipt of the request and the offer of indemnity; and
- (5) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in aggregate principal amount of the Securities of such Series then outstanding.

A Securityholder may not use this Indenture to prejudice the rights of another Securityholder, or to obtain a preference or priority over another Securityholder.

#### **6.7. RIGHTS OF HOLDERS TO RECEIVE PAYMENT.**

Notwithstanding any other provision of this Indenture, the right of any Holder of a Security of a Series to receive payment of the principal of, and interest and premium, if any, on, the Security of such Series on or after the respective due dates expressed in the Security of such Series, or to bring suit for the enforcement of any such payment on or after such respective dates, is absolute and unconditional, and shall not be impaired or affected without the consent of the Holder.

#### **6.8. COLLECTION SUIT BY TRUSTEE.**

If an Event of Default in payment of principal, interest or premium, if any, specified in Section 6.1(1) or (2) with respect to Securities of any Series at the time outstanding occurs and is continuing, the Trustee may recover judgment in its own name and as trustee of an express trust against the Company (or any other obligor on the Securities of that Series) for the whole amount of unpaid principal and premium, if any, and accrued interest remaining unpaid, together with interest on overdue principal and premium, if any, and, to the extent that payment of such interest is lawful, interest on overdue installments of interest, in each case at the rate then borne by the Securities of that Series, and such further amounts as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, as set forth in Section 7.7.

#### **6.9. TRUSTEE MAY FILE PROOFS OF CLAIM.**

The Trustee may file such proofs of claim and other papers or documents, and take other actions (including sitting on a committee of creditors), as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and the Securityholders allowed in any judicial proceedings relative to the Company (or any other obligor on the Securities), any of their respective creditors or any of their respective property, and the Trustee shall be entitled and empowered to collect and receive any monies or other

property payable or deliverable on any such claims, and to distribute the same after deduction of its charges and expenses to the extent that any such charges and expenses are not paid out of the estate in any such proceedings, and any custodian in any such judicial proceeding is hereby authorized by each Securityholder to make such payments to the Trustee, and in the event that the Trustee shall consent to the making of such payments directly to the Securityholders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.7.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to, or accept or adopt on behalf of any Securityholder, any plan of reorganization, arrangement, adjustment or composition affecting the Securities of a Series or the rights of any Holder thereof, or to authorize the Trustee to vote in respect of the claim of any Securityholder in any such proceedings.

#### **6.10. PRIORITIES.**

If the Trustee collects any money pursuant to this Article 6, it shall pay out the money in the following order:

FIRST: to the Trustee for amounts due under Section 7.7;

SECOND: to Securityholders for amounts then due and unpaid for the principal of, and interest and premium, if any, on, the Securities in respect of which, or for the benefit of which, such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities; for principal and any premium and interest, respectively; and

THIRD: to the Company.

The Trustee may fix a record date and payment date for any payment to Securityholders pursuant to this Section 6.10. At least 15 days before such record date, the Trustee shall mail to each Securityholder a notice that states the record date, the payment date and amount to be paid.

#### **6.11. UNDERTAKING FOR COSTS.**

In any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken or omitted by it as Trustee, a court in its discretion may require the filing by any party litigant in the suit of an undertaking to pay the costs of the suit, and the court in its discretion may assess reasonable costs, including reasonable attorneys' fees, against any party litigant in the suit, having due regard to the merits and good faith of the claims or defenses made by the party litigant. This Section 6.11 does not apply to a suit by the Trustee, a suit by a Holder pursuant to Section 6.7 or a suit by Holders of more than 10% in principal amount of the Securities of a Series then outstanding.

### **ARTICLE 7 – TRUSTEE**

#### **7.1. DUTIES OF TRUSTEE.**

(a) If an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture and use the same degree of care and skill in their exercise as a prudent Person would exercise or use under the same circumstances in the conduct of his own affairs.

(b) Except during the continuance of an Event of Default:

(1) The Trustee need perform only those duties that are specifically set forth in this Indenture, and no covenants or obligations shall be implied in this Indenture against the Trustee.

(2) In the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture, but, in the case of any such certificates or opinions which by any provision hereof are specifically required to be furnished to the Trustee, the Trustee shall be under a duty to examine the same to determine whether or not they conform to the requirements of this Indenture.

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:

(1) This paragraph does not limit the effect of paragraph (b) of this Section 7.1.

(2) The Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts.

(3) The Trustee shall not be liable with respect to any action it takes or omits to take in good faith in accordance with a direction received by it pursuant to Sections 6.2 and 6.5.

(d) No provision of this Indenture shall require the Trustee to expend or risk its own funds, or otherwise incur any financial liability, in the performance of any of its rights or powers if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity satisfactory to it against such risk or liability is not reasonably assured to it.

(e) Whether or not therein expressly so provided, paragraphs (a), (b), (c) and (d) of this Section 7.1 shall govern every provision of this Indenture that in any way relates to the Trustee.

(f) The Trustee and Paying Agent shall not be liable for interest on any money received by either of them, except as the Trustee and Paying Agent may agree in writing with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by the law.

(g) The Paying Agent, the Registrar and any authenticating agent shall be entitled to the protections, immunities and standard of care set forth in paragraphs (a), (b), (c), (d) and (f) of this Section 7.1 and in Section 7.2 with respect to the Trustee.

## **7.2. RIGHTS OF TRUSTEE.**

(a) Subject to Section 7.1:

(1) The Trustee may rely on, and shall be protected in acting or refraining from acting upon, any document reasonably believed by it to be genuine and to have been signed or presented by the proper Person. The Trustee need not investigate any fact or matter stated in the document.

(2) Before the Trustee acts or refrains from acting, it may require an Officers' Certificate or an Opinion of Counsel, or both, which shall conform to the provisions of Section 10.5. The Trustee shall be protected and shall not be liable for any action it takes or omits to take in good faith in reliance on such certificate or opinion.

(3) The Trustee may act through agents and attorneys, and shall not be responsible for the misconduct or negligence of any agent appointed by it with due care.

(4) The Trustee shall not be liable for any action it takes or omits to take in good faith which it reasonably believes to be authorized or within its rights or powers.

(5) The Trustee may consult with counsel reasonably acceptable to the Trustee, which may be counsel to the Company, and the advice or opinion of such counsel as to matters of law shall be full and complete authorization and protection from liability in respect of any action taken, omitted or suffered by it hereunder in good faith and in accordance with the advice or opinion of such counsel.

(6) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request, order or direction of any of the Holders pursuant to the provisions of this Indenture, unless such Holders shall have offered to the Trustee reasonable security or indemnity against the costs, expenses and liabilities which may be incurred therein or thereby.

(7) The Trustee shall not be deemed to have knowledge of any fact or matter (including, without limitation, a Default or Event of Default) unless such fact or matter is known to a Responsible Officer of the Trustee.

(8) Unless otherwise expressly provided herein or in the Securities of a Series or the related Board Resolution, supplemental indenture or Officers' Certificate, the Trustee shall not have any responsibility with respect to reports, notices, certificates or other documents filed with it hereunder, except to make them available for inspection, at reasonable times, by Securityholders, it being understood that delivery of such reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (except as set forth in Section 4.4).

## **7.3. INDIVIDUAL RIGHTS OF TRUSTEE.**

The Trustee in its individual or any other capacity may become the owner or pledgee of Securities, and may make loans to, accept deposits from, perform services for or otherwise deal with the Company, or any Affiliate thereof, with the same rights it would



have if it were not Trustee. Any Agent may do the same with like rights. The Trustee, however, shall be subject to Sections 7.10 and 7.11.

#### **7.4. TRUSTEE'S DISCLAIMER.**

The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities (except that the Trustee represents that it is duly authorized to execute and deliver this Indenture and authenticate the Securities and perform its obligations hereunder), and the Trustee shall not be accountable for the Company's use of the proceeds from the sale of Securities or any money paid to the Company pursuant to the terms of this Indenture, and the Trustee shall not be responsible for any statement in the Securities other than its certificates of authentication.

#### **7.5. NOTICE OF DEFAULT.**

If a Default or an Event of Default occurs and is continuing with respect to the Securities of any Series, and if it is known to the Trustee, the Trustee shall mail to each Securityholder of the Securities of that Series notice of the Default or the Event of Default, as the case may be, within 90 days after it occurs or, if later, after a Responsible Officer of the Trustee has knowledge of such Default or Event of Default (except if such Default or Event of Default has been validly cured or waived before the giving of such notice). Except in the case of a Default or an Event of Default in payment of the principal of, or interest or premium, if any, on, any Security of any Series, the Trustee may withhold the notice if and so long as the Board of Directors of the Trustee, the executive committee or any trust committee of such board and/or its Responsible Officers in good faith determine(s) that withholding the notice is in the interests of the Securityholders of that Series.

#### **7.6. REPORTS BY TRUSTEE TO HOLDERS.**

If and to the extent required by the TIA, within 60 days after April 1 of each year, commencing the April 1 following the date of this Indenture, the Trustee shall mail to each Securityholder a brief report dated as of such April 1 that complies with TIA Section 313(a). The Trustee also shall comply with TIA Sections 313(b) and 313(c).

A copy of each report at the time of its mailing to Securityholders shall be filed with the SEC and any stock exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee when the Securities of any Series are listed on any stock exchange or any delisting thereof, and the Trustee shall comply with TIA Section 313(d).

#### **7.7. COMPENSATION AND INDEMNITY.**

The Company shall pay to the Trustee from time to time reasonable compensation for its services. The Trustee's compensation shall not be limited by any provision of law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee within 45 days after receipt of request for all reasonable out-of-pocket disbursements and expenses incurred or made by it in connection with its duties under this Indenture, including the reasonable compensation, disbursements and expenses of the Trustee's agents and counsel.

The Company shall indemnify the Trustee for, and hold it harmless against, any and all loss or liability incurred by it in connection with the acceptance or performance of its duties under this Indenture including the reasonable costs and expenses of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder. The Trustee shall notify the Company promptly of any claim asserted against the Trustee for which it may seek indemnity.

The failure by the Trustee to so notify the Company shall not however relieve the Company of its obligations. Notwithstanding the foregoing, the Company need not reimburse the Trustee for any expense or indemnify it against any loss or liability incurred by the Trustee through its negligence or bad faith. To secure the payment obligations of the Company in this Section 7.7, the Trustee shall have a lien prior to the Securities of any Series on all money or property held or collected by the Trustee except such money or property held in trust to pay the principal of, interest and premium, if any, on particular Securities of that Series.

When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.1(4) or (5) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any Bankruptcy Law.

For purposes of this Section 7.7, the term "Trustee" shall include any trustee appointed pursuant to this Article 7.

#### **7.8. REPLACEMENT OF TRUSTEE.**

The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company in writing at least 90 days in advance of such resignation.

The Holders of a majority in principal amount of the outstanding Securities of any Series may remove the Trustee with respect to that Series by notifying the removed Trustee in writing and may appoint a successor Trustee with respect to that Series with the consent of the Company, which consent shall not be unreasonably withheld. The Company may remove the Trustee with respect to that Series at its election if:

- (1) the Trustee fails to comply with, or ceases to be eligible under, Section 7.10;
- (2) the Trustee is adjudged a bankrupt or an insolvent, or an order for relief is entered with respect to the Trustee, under any Bankruptcy Law;
- (3) a Custodian or other public officer takes charge of the Trustee or its property; or
- (4) the Trustee otherwise becomes incapable of acting.

(5) If the Trustee resigns or is removed, or if a vacancy exists in the office of Trustee, with respect to any Series of Securities for any reason, the Company shall promptly appoint, by Board Resolution, a successor Trustee.

If a successor Trustee with respect to the Securities of one or more Series does not take office within 60 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least 10% in principal amount of the outstanding Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

If the Trustee with respect to the Securities of one or more Series fails to comply with Section 7.10, any Securityholder of the applicable Series may petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately following such delivery, (i) the retiring Trustee with respect to one or more Series shall, subject to its rights under Section 7.7, transfer all property held by it as Trustee with respect to such Series to the successor Trustee, (ii) the resignation or removal of the retiring Trustee shall become effective and (iii) the successor Trustee with respect to such Series shall have all the rights, powers and duties of the Trustee under this Indenture. A successor Trustee with respect to the Securities of one or more Series shall mail notice of its succession to each Securityholder of such Series.

#### **7.9. SUCCESSOR TRUSTEE BY CONSOLIDATION, MERGER OR CONVERSION.**

If the Trustee, or any Agent, consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust assets to, another corporation, subject to Section 7.10, the successor corporation without any further act shall be the successor Trustee or Agent, as the case may be.

#### **7.10. ELIGIBILITY; DISQUALIFICATION.**

This Indenture shall always have a Trustee who satisfies the requirements of TIA Sections 310(a)(1), (2) and (5) in every respect. The Trustee (or in the case of a Trustee that is a Person included in a bank holding company system, the related bank holding company) shall have a combined capital and surplus of at least \$100,000,000 as set forth in its most recent published annual report of condition. The Trustee shall comply with TIA Section 310(b), including the provision in Section 310(b)(1). In addition, if the Trustee is a Person included in a bank holding company system, the Trustee, independently of such bank holding company, shall meet the capital requirements of TIA Section 310(a)(2). If at any time the Trustee shall cease to be eligible in accordance with the provisions of this Section 7.10, it shall resign immediately in the manner and with the effect specified in this Article 7.

#### **7.11. PREFERENTIAL COLLECTION OF CLAIMS AGAINST COMPANY.**

The Trustee shall comply with TIA Section 311(a), excluding any creditor relationship listed in TIA Section 311(b). A Trustee who has resigned or been removed shall be subject to TIA Section 311(a) to the extent indicated therein.

#### **7.12. PAYING AGENTS.**

The Company shall cause each Paying Agent other than the Trustee to execute and deliver to it and the Trustee an instrument in which such agent shall agree with the Trustee, subject to the provisions of this Section 7.12:

(1) that it will hold all sums held by it as agent for the payment of the principal of, or interest or premium, if any, on, the Securities (whether such sums have been paid to it by the Company or by any obligor on the Securities) in trust for the benefit of Holders of the Securities or the Trustee;

(2) that it will at any time during the continuance of any Event of Default, upon written request from the Trustee, deliver to the Trustee all sums so held in trust by it together with a full accounting thereof; and

(3) that it will give the Trustee written notice within three Business Days after any failure of the Company (or by any obligor on the Securities) in the payment of any installment of the principal of, or interest or premium, if any, on, the Securities when the same shall be due and payable.

## **ARTICLE 8 – AMENDMENTS, SUPPLEMENTS AND WAIVERS**

### **8.1. WITHOUT CONSENT OF HOLDERS.**

The Company, when authorized by a Board Resolution, and the Trustee may amend or supplement this Indenture or the Securities of one or more Series without notice to or consent of any Securityholder:

(1) to comply with Section 5.1;

(2) to provide for certificated Securities in addition to uncertificated Securities;

(3) to comply with any requirements of the SEC under the TIA;

(4) to cure any ambiguity, defect or inconsistency, or to make any other change herein or in the Securities that does not materially and adversely affect the rights of any Securityholder;

(5) to provide for the issuance of, and establish the form and terms and conditions of, Securities of any Series as permitted by this Indenture; or

(6) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more Series, and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee.

The Trustee is hereby authorized to join with the Company in the execution of any supplemental indenture authorized or permitted by the terms of this Indenture, and to make any further appropriate agreements and stipulations which may be therein contained, but the Trustee shall not be obligated to enter into any such supplemental indenture which adversely affects its own rights, duties or immunities under this Indenture.

### **8.2. WITH CONSENT OF HOLDERS.**

(a) The Company, when authorized by a Board Resolution, and the Trustee may amend or supplement this Indenture or the Securities of one or more Series with the written consent of the Holders of not less than a majority in aggregate principal amount of the outstanding Securities of such Series affected by such amendment or supplement without notice to any Securityholder. The Holders of not less than a majority in aggregate principal amount of the outstanding Securities of each such Series affected by such amendment or supplement may waive compliance by the Company in a particular instance with any provision of this Indenture or the Securities of such Series without notice to any Securityholder. Subject to Section 8.4, without the consent of each Securityholder affected, however, an amendment, supplement or waiver may not:

(1) reduce the amount of Securities whose Holders must consent to an amendment, supplement or waiver to this Indenture or the Securities;

(2) reduce the rate of, or change the time for payment of, interest on any Security;

(3) reduce the principal, or change the Stated Maturity, of any Security, or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation;

(4) make any Security payable in money other than that stated in the Security;

(5) change the amount or time of any payment required by the Securities, or reduce the premium payable upon any redemption of the Securities, or change the time before which no such redemption may be made;

(6) waive a Default or Event of Default in the payment of the principal of, or interest or premium, if any, on, any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);

(7) waive a redemption payment with respect to any Security, or change any of the provisions with respect to the redemption of any Securities;

(8) make any changes in Section 6.6 or this Section 8.2, except to increase any percentage of Securities the Holders of which must consent to any matter; or

(9) take any other action otherwise prohibited by this Indenture to be taken without the consent of each Holder affected thereby.

(b) Upon the request of the Company, accompanied by a Board Resolution authorizing the execution of any such supplemental indenture, and upon the receipt by the Trustee of evidence reasonably satisfactory to the Trustee of the consent of the Securityholders as aforesaid and of the documents described in Section 8.6, the Trustee shall join with the Company in the execution of such supplemental indenture, unless such supplemental indenture affects the Trustee's own rights, duties or immunities under this Indenture, in which case the Trustee may in its discretion, but shall not be obligated to, enter into such supplemental indenture.

(c) It shall not be necessary for the consent of the Holders under this section to approve the particular form of any proposed amendment, supplement or waiver, but it shall be sufficient if such consent approves the substance thereof.

After an amendment or supplement under this Section becomes effective, the Company shall mail to Securityholders a notice briefly describing the amendment or supplement. Any failure of the Company to mail any such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any supplemental indenture.

### **8.3. COMPLIANCE WITH TRUST INDENTURE ACT.**

Every amendment to, or supplement of, this Indenture or the Securities shall comply with the TIA as then in effect.

### **8.4. REVOCATION AND EFFECT OF CONSENTS.**

Until an amendment, supplement, waiver or other action becomes effective, a consent to it by a Holder of a Security is a continuing consent conclusive and binding upon such Holder and every subsequent Holder of the same Security or portion thereof, and of any Security issued upon the transfer thereof or in exchange therefor or in place thereof, even if notation of the consent is not made on any such Security. Any such Holder or subsequent Holder, however, may revoke the consent as to his Security or portion of a Security, if the Trustee receives the notice of revocation before the date the amendment, supplement, waiver or other action becomes effective.

The Company may, but shall not be obligated to, fix a record date for the purpose of determining the Holders entitled to consent to any amendment, supplement or waiver, which record date shall be at least 30 days prior to the first solicitation of such consent. If a record date is fixed, then, notwithstanding the preceding paragraph, those Persons who were Holders at such record date (or their duly designated proxies), and only such Persons, shall be entitled to consent to such amendment, supplement or waiver, or to revoke any consent previously given, whether or not such Persons continue to be Holders after such record date.

After an amendment, supplement, waiver or other action becomes effective, it shall bind every Securityholder, unless it makes a change described in any of clauses (1) through (9) of Section 8.2. In that case, the amendment, supplement, waiver or other action shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security; PROVIDED, that any such waiver shall not impair or affect the right of any Holder to receive payment of the principal of, and interest and premium, if any, on, a Security, on or after the respective due dates expressed in such Security, or to bring suit for the enforcement of any such payment on or after such respective dates without the consent of such Holder.

### **8.5. NOTATION ON OR EXCHANGE OF SECURITIES.**

If an amendment, supplement or waiver changes the terms of a Security of any Series, the Trustee may request the Holder of such Security to deliver it to the Trustee. In such case, the Trustee shall place an appropriate notation on such Security about the changed terms and return it to the Holder. Alternatively, the Company, in exchange for such Security, may issue, and the Trustee shall authenticate, a new security that reflects the changed terms. Failure to make the appropriate notation or issue a new Security shall not affect the validity and effect of such amendment, supplement or waiver.

## **8.6. TRUSTEE TO SIGN AMENDMENTS, ETC.**

The Trustee shall sign any amendment, supplement or waiver authorized pursuant to this Article 8 if the amendment, supplement or waiver does not adversely affect the rights, duties, liabilities or immunities of the Trustee. If it does, the Trustee may, but need not, sign it. In signing or refusing to sign such amendment, supplement or waiver the Trustee shall be entitled to receive and, subject to Section 7.1, shall be fully protected in relying upon an Officers' Certificate and an Opinion of Counsel stating that such amendment, supplement or waiver is authorized or permitted by this Indenture. The Company may not sign an amendment or supplement until the Board of Directors of the Company approves it.

## **ARTICLE 9 – DISCHARGE OF INDENTURE; DEFEASANCE**

### **9.1. DISCHARGE OF INDENTURE.**

The Company may terminate its obligations under the Securities of any Series and this Indenture with respect to such Series, except the obligations referred to in the last paragraph of this Section 9.1, if there shall have been canceled by the Trustee, or delivered to the Trustee for cancellation, all Securities of such Series theretofore authenticated and delivered (other than any Securities of such Series that are asserted to have been destroyed, lost or stolen and that shall have been replaced as provided in Section 2.8) and the Company has paid all sums payable by it hereunder or deposited all required sums with the Trustee.

After such delivery the Trustee upon request shall acknowledge in a writing prepared by or on behalf of the Company the discharge of the Company's obligations under the Securities of such Series and this Indenture, except for those surviving obligations specified below.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company in Sections 7.7, 9.5 and 9.6 shall survive.

### **9.2. LEGAL DEFEASANCE.**

The Company may at its option, by Board Resolution, be discharged from its obligations with respect to the Securities of any Series on the date upon which the conditions set forth in Section 9.4 below are satisfied (hereinafter, "Legal Defeasance"). For this purpose, such Legal Defeasance means that the Company shall be deemed to have paid and discharged the entire indebtedness represented by the Securities of such Series and to have satisfied all its other obligations under such Securities and this Indenture insofar as such Securities are concerned (and the Trustee, at the expense of the Company, shall, subject to Section 9.6, execute proper instruments acknowledging the same, as are delivered to it by the Company), except for the following, which shall survive until otherwise terminated or discharged hereunder: (A) the rights of Holders of outstanding Securities of such Series to receive solely from the trust funds described in Section 9.4 and as more fully set forth in such section, payments in respect of the principal of, and interest and premium, if any, on, the Securities of such Series when such payments are due, (B) the Company's obligations with respect to the Securities of such Series under Sections 2.4, 2.5, 2.6, 2.7, 2.8 and 2.9, (C) the rights, powers, trusts, duties and immunities of the Trustee hereunder (including claims of, or payments to, the Trustee under or pursuant to Section 7.7) and (D) this Article 9. Subject to compliance with this Article 9, the Company may exercise its option under this Section 9.2 with respect to the Securities of any Series notwithstanding the prior exercise of its option under Section 9.3 below with respect to the Securities of such Series.

### **9.3. COVENANT DEFEASANCE.**

At the option of the Company, pursuant to a Board Resolution, the Company shall be released from its obligations with respect to the outstanding Securities of any Series under Sections 4.2 through 4.5, inclusive, and Section 5.1, with respect to the outstanding Securities of such Series, on and after the date the conditions set forth in Section 9.4 are satisfied (hereinafter, "Covenant Defeasance"). For this purpose, such Covenant Defeasance means that the Company may omit to comply with and shall have no liability in respect of any term, condition or limitation set forth in any such specified section or portion thereof, whether directly or indirectly by reason of any reference elsewhere herein to any such specified Section or portion thereof or by reason of any reference in any such specified section or portion thereof to any other provision herein or in any other document, but the remainder of this Indenture and the Securities of any Series shall be unaffected thereby.

### **9.4. CONDITIONS TO LEGAL DEFEASANCE OR COVENANT DEFEASANCE.**

The following shall be the conditions to application of Section 9.2 or Section 9.3 to the outstanding Securities of a Series:

(1) the Company shall irrevocably have deposited or caused to be deposited with the Trustee (or another trustee satisfying the requirements of Section 7.10 who shall agree to comply with the provisions of this Article 9 applicable to it) as funds in trust for the purpose of making the following payments, specifically pledged as security for, and dedicated solely to, the benefit of the Holders of the Securities, (A) money in an amount, or (B) U.S. Government Obligations or Foreign Government Obligations which through the scheduled payment of principal and interest in respect thereof in accordance with their terms will provide, not later than the due date of any payment, money in an amount, or (C) a combination thereof, sufficient, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge, and which shall be applied by the Trustee (or other qualifying trustee) to pay and discharge, the principal of, and accrued interest and premium, if any, on, the outstanding Securities of such Series at the Stated Maturity of such principal, interest or premium, if any, or on dates for payment and redemption of such principal, interest and premium, if any, selected in accordance with the terms of this Indenture and of the Securities of such Series;

(2) no Event of Default or Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit, or shall have occurred and be continuing at any time during the period ending on the 91st day after the date of such deposit or, if longer, ending on the day following the expiration of the longest preference period under any Bankruptcy Law applicable to the Company in respect of such deposit as specified in the Opinion of Counsel identified in paragraph (8) below (it being understood that this condition shall not be deemed satisfied until the expiration of such period);

(3) such Legal Defeasance or Covenant Defeasance shall not cause the Trustee to have a conflicting interest for purposes of the TIA with respect to any securities of the Company;

(4) such Legal Defeasance or Covenant Defeasance shall not result in a breach or violation of, or constitute default under, any other agreement or instrument to which the Company is a party or by which it is bound;

(5) the Company shall have delivered to the Trustee an Opinion of Counsel stating that, as a result of such Legal Defeasance or Covenant Defeasance, neither the trust nor the Trustee will be required to register as an investment company under the Investment Company Act of 1940, as amended;

(6) in the case of an election under Section 9.2, the Company shall have delivered to the Trustee an Opinion of Counsel stating that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling to the effect that or (ii) there has been a change in any applicable Federal income tax law with the effect that, and such opinion shall confirm that, the Holders of the outstanding Securities of such Series or Persons in their positions will not recognize income, gain or loss for Federal income tax purposes solely as a result of such Legal Defeasance and will be subject to Federal income tax on the same amounts, in the same manner, including as a result of prepayment, and at the same times as would have been the case if such Legal Defeasance had not occurred;

(7) in the case of an election under Section 9.3, the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that the Holders of the outstanding Securities of such Series will not recognize income, gain or loss for Federal income tax purposes as a result of such Covenant Defeasance, and will be subject to Federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Covenant Defeasance had not occurred;

(8) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for in this Article 9 relating to either the Legal Defeasance under Section 9.2 or the Covenant Defeasance under Section 9.3 (as the case may be) have been complied with;

(9) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit under clause (1) was not made by the Company with the intent of defeating, hindering, delaying or defrauding any creditors of the Company or others; and

(10) the Company shall have paid, or duly provided for payment under terms mutually satisfactory to the Company and the Trustee, all amounts then due to the Trustee pursuant to Section 7.7.

#### **9.5. DEPOSITED MONEY AND U.S. AND FOREIGN GOVERNMENT OBLIGATIONS TO BE HELD IN TRUST; OTHER MISCELLANEOUS PROVISIONS.**

All money, U.S. Government Obligations and Foreign Government Obligations (including the proceeds thereof) deposited with the Trustee pursuant to Section 9.4 in respect of the outstanding Securities shall be held in trust and applied by the Trustee, in accordance with the provisions of such Securities and this Indenture, to the payment, either directly or through any Paying Agent as the Trustee may determine, to the Holders of such Securities, of all sums due and to become due thereon in respect of principal, accrued interest and premium, if any, but such money need not be segregated from other funds except to the extent required by law.

The Company shall pay and indemnify the Trustee against any tax, fee or other charge imposed on or assessed against the U.S. Government Obligations and Foreign Government Obligations deposited pursuant to Section 9.4 or the principal, interest and

premium, if any, received in respect thereof other than any such tax, fee or other charge which by law is for the account of the Holders of the outstanding Securities.

Anything in this Article 9 to the contrary notwithstanding, but subject to payment of any of its outstanding fees and expenses, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money, U.S. Government Obligations or Foreign Government Obligations held by the Trustee as provided in Section 9.4 which, in the opinion of a nationally-recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, are in excess of the amount thereof which would then be required to be deposited to effect an equivalent Legal Defeasance or Covenant Defeasance.

#### **9.6. REINSTATEMENT.**

If the Trustee or Paying Agent is unable to apply any money, U.S. Government Obligations or Foreign Government Obligations in accordance with Section 9.1, 9.2, 9.3 or 9.4 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the Company's obligations under this Indenture and the Securities shall be revived and reinstated as though no deposit had occurred pursuant to this Article 9 until such time as the Trustee or Paying Agent is permitted to apply all such money, U.S. Government Obligations or Foreign Government Obligations, as the case may be, in accordance with Section 9.1, 9.2, 9.3 or 9.4; PROVIDED, HOWEVER, that if the Company has made any payment of principal of, or accrued interest or premium, if any, on, any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money, U.S. Government Obligations or Foreign Government Obligations held by the Trustee or Paying Agent.

#### **9.7. MONEYS HELD BY PAYING AGENT.**

In connection with the satisfaction and discharge of this Indenture, all moneys then held by any Paying Agent under the provisions of this Indenture shall, upon demand of the Company, be paid to the Trustee, or, if sufficient moneys have been deposited pursuant to Section 9.1, to the Company, and thereupon such Paying Agent shall be released from all further liability with respect to such moneys.

#### **9.8. MONEYS HELD BY TRUSTEE.**

Any moneys deposited with the Trustee or any Paying Agent or then held by the Company in trust for the payment of the principal of, or interest or premium, if any, on, any Security that are not applied but remain unclaimed by the Holder of such Security for two years after the date upon which the principal of, or interest or premium, if any, on, such Security shall have respectively become due and payable shall be repaid to the Company upon Company Request, or if such moneys are then held by the Company in trust, such moneys shall be released from such trust; and the Holder of such Security entitled to receive such payment shall thereafter, as an unsecured general creditor, look only to the Company for the payment thereof, and all liability of the Trustee or such Paying Agent with respect to such trust money shall thereupon cease; PROVIDED, HOWEVER, that the Trustee or any such Paying Agent, before being required to make any such repayment, may, at the expense of the Company, either mail to each Securityholder affected, at the address shown in the register of the Securities maintained by the Registrar, or cause to be published once a week for two successive weeks, in a newspaper published in the English language, customarily published each Business Day and of general circulation in the City of New York, New York, a notice that such money remains unclaimed and that, after a date specified therein, which shall not be less than 30 days from the date of such mailing or publication, any unclaimed balance of such moneys then remaining will be repaid to the Company. After payment to the Company or the release of any money held in trust by the Company, Securityholders entitled to the money must look only to the Company for payment as general creditors, unless applicable abandoned property law designates another Person.

### **ARTICLE 10 – MISCELLANEOUS**

#### **10.1. TRUST INDENTURE ACT CONTROLS.**

If any provision of this Indenture limits, qualifies or conflicts with another provision which is required to be included in this Indenture by the TIA, the required provision shall control. If any provision of this Indenture modifies or excludes any provision of the TIA which may be so modified or excluded, the latter provision shall be deemed to apply to this Indenture as so modified or to be excluded, as the case may be.

#### **10.2. NOTICES.**

Any notice or communication shall be given in writing and delivered in Person, sent by facsimile (and receipt confirmed by telephone or electronic transmission report), delivered by commercial courier service or mailed by first-class mail, postage prepaid, addressed as follows:

If to the Company:

Achieve Life Sciences, Inc.  
1040 West Georgia Street  
Suite 1030  
Vancouver, British Columbia, Canada V6E 4H1  
Attention: Chief Executive Officer

Copy to:

1191 Second Avenue  
10th Floor  
Seattle, WA 98101  
Attention: Amanda L. Rose, Chelsea Anderson

If to the Trustee:

The Company or the Trustee by written notice to the other may designate additional or different addresses for subsequent notices or communications. Any notice or communication to the Company or the Trustee shall be deemed to have been given or made as of the date so delivered if personally delivered; when receipt is confirmed by telephone or electronic transmission report, if sent by facsimile; and three Business Days after mailing if sent by registered or certified mail, postage prepaid (except that a notice of change of address shall not be deemed to have been given until actually received by the addressee).

Any notice or communication mailed to a Securityholder shall be mailed to such Securityholder by first-class mail, postage prepaid, at such Securityholder's address shown on the register kept by the Registrar.

Failure to mail, or any defect in, a notice or communication to a Securityholder shall not affect its sufficiency with respect to other Securityholders. If a notice or communication to a Securityholder is mailed in the manner provided above, it shall be deemed duly given, three Business Days after such mailing, whether or not the addressee receives it.

In case by reason of the suspension of regular mail service, or by reason of any other cause, it shall be impossible to mail any notice as required by this Indenture, then such method of notification as shall be made with the approval of the Trustee shall constitute a sufficient mailing of such notice.

In the case of Global Securities, notices or communications to be given to Securityholders shall be given to the Depository, in accordance with its applicable policies as in effect from time to time.

In addition to the manner provided for in the foregoing provisions, notices or communications to Securityholders shall be given by the Company by release made to Reuters Economic Services and Bloomberg Business News.

### **10.3. COMMUNICATIONS BY HOLDERS WITH OTHER HOLDERS.**

Securityholders of any Series may communicate pursuant to TIA Section 312(b) with other Securityholders of that Series or any other Series with respect to their rights under this Indenture or the Securities of that Series or any other Series. The Company, the Trustee, the Registrar and any other Person shall have the protection of TIA Section 312(c).

### **10.4. CERTIFICATE AND OPINION AS TO CONDITIONS PRECEDENT.**

Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

(1) an Officers' Certificate (which shall include the statements set forth in Section 10.5 below) stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(2) an Opinion of Counsel (which shall include the statements set forth in Section 10.5 below) stating that, in the opinion of such counsel, all such conditions precedent have been complied with.



#### **10.5. STATEMENT REQUIRED IN CERTIFICATE AND OPINION.**

Each certificate and opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than pursuant to Section 4.4) shall include:

- (1) a statement that the Person making such certificate or opinion has read such covenant or condition;
- (2) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;
- (3) a statement that, in the opinion of such Person, it or he has made such examination or investigation as is necessary to enable it or him to express an informed opinion as to whether or not such covenant or condition has been complied with; and
- (4) a statement as to whether or not, in the opinion of such Person, such covenant or condition has been complied with.

#### **10.6. RULES BY TRUSTEE AND AGENTS.**

The Trustee may make reasonable rules for action by or at meetings of Securityholders. The Registrar and Paying Agent may make reasonable rules for their functions.

#### **10.7. BUSINESS DAYS; LEGAL HOLIDAYS; PLACE OF PAYMENT.**

A “Business Day” is a day that is not a Legal Holiday. A “Legal Holiday” is a Saturday, a Sunday, a federally-recognized holiday or a day on which banking institutions are not authorized or required by law, regulation or executive order to be open in the State of New York.

If a payment date is a Legal Holiday at a Place of Payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period. “Place of Payment” means the place or places where the principal of, and interest and premium, if any, on, the Securities of a Series are payable as specified as contemplated by Section 2.2. If the regular record date is a Legal Holiday, the record date shall not be affected.

#### **10.8. GOVERNING LAW.**

**THIS INDENTURE AND THE SECURITIES SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, AS APPLIED TO CONTRACTS MADE AND PERFORMED WITHIN THE STATE OF NEW YORK WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW.**

#### **10.9. NO ADVERSE INTERPRETATION OF OTHER AGREEMENTS.**

This Indenture may not be used to interpret another indenture, loan, security or debt agreement of the Company or any Subsidiary thereof. No such indenture, loan, security or debt agreement may be used to interpret this Indenture.

#### **10.10. NO RECOURSE AGAINST OTHERS.**

A director, officer, employee, stockholder or incorporator, as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture. Each Securityholder by accepting a Security waives and releases all such liability. Such waiver and release are part of the consideration for the issuance of the Securities.

#### **10.11. SUCCESSORS.**

All covenants and agreements of the Company in this Indenture and the Securities shall bind the Company’s successors and assigns, whether so expressed or not. All agreements of the Trustee, any additional trustee and any Paying Agents in this Indenture shall bind their respective successors and assigns.

#### **10.12. MULTIPLE COUNTERPARTS.**

The parties may sign multiple counterparts of this Indenture. Each signed counterpart shall be deemed an original, but all of them together represent one and the same agreement.

#### **10.13. TABLE OF CONTENTS, HEADINGS, ETC.**

The table of contents, cross-reference sheet and headings of the Articles and Sections of this Indenture have been inserted for convenience of reference only, are not to be considered a part hereof, and shall in no way modify or restrict any of the terms or provisions hereof.

#### **10.14. SEVERABILITY.**

Each provision of this Indenture shall be considered separable, and if for any reason any provision which is not essential to the effectuation of the basic purpose of this Indenture or the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby, and a Holder shall have no claim therefor against any party hereto.

#### **10.15. SECURITIES IN A FOREIGN CURRENCY OR IN EUROS.**

Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate delivered pursuant to Section 2.2 with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in a coin or currency other than Dollars (including Euros), then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be that amount of Dollars that could be obtained for such amount at the Market Exchange Rate at such time. For purposes of this Section 10.15, "Market Exchange Rate" shall mean the noon Dollar buying rate in New York City for cable transfers of that currency as published by the Federal Reserve Bank of New York; PROVIDED, HOWEVER, in the case of Euros, Market Exchange Rate shall mean the rate of exchange determined by the Commission of the European Union (or any successor thereto) as published in the Official Journal of the European Union (such publication or any successor publication, the "Journal"). If such Market Exchange Rate is not available for any reason with respect to such currency, the Trustee shall use, in its sole discretion and without liability on its part, such quotation of the Federal Reserve Bank of New York or, in the case of Euros, the rate of exchange as published in the Journal, as of the most recent available date, or quotations or, in the case of Euros, rates of exchange from one or more major banks in New York City or in the country of issue of the currency in question or, in the case of Euros, in Luxembourg or such other quotations or, in the case of Euros, rates of exchange as the Trustee, upon consultation with the Company, shall deem appropriate. The provisions of this paragraph shall apply in determining the equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture.

All decisions and determinations of the Trustee regarding the Market Exchange Rate or any alternative determination provided for in the preceding paragraph shall be in the Trustee's sole discretion, and shall, in the absence of manifest error, be conclusive to the extent permitted by law for all purposes and irrevocably binding upon the Company and all Holders.

#### **10.16. JUDGMENT CURRENCY.**

The Company agrees, to the fullest extent that it may effectively do so under applicable law, that (a) if for the purpose of obtaining judgment in any court it is necessary to convert the sum due in respect of the principal of, or interest or premium, if any, or other amount on, the Securities of any Series (the "Required Currency") into a currency in which a judgment will be rendered (the "Judgment Currency"), the rate of exchange used shall be the rate at which, in accordance with normal banking procedures, the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the day on which final unappealable judgment is entered, unless such day is not a Business Day, in which instance, the rate of exchange used shall be the rate at which, in accordance with normal banking procedures, the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the Business Day preceding the day on which final unappealable judgment is entered and (b) its obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender or any recovery pursuant to any judgment (whether or not entered in accordance with subsection (a)) in any currency other than the Required Currency, except to the extent that such tender or recovery shall result in the actual receipt, by the payee, of the full amount of the Required Currency expressed to be payable in respect of such payments, (ii) shall be enforceable as an alternative or additional cause of action for the purpose of recovering in the Required Currency the amount, if any, by which such actual receipt shall fall short of the full amount of the Required Currency so expressed to be payable and (iii) shall not be affected by judgment being obtained for any other sum due under this Indenture.

**[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]**

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed, and their respective corporate seals to be hereunto affixed and attested, all as of the day and year first above written.

**ACHIEVE LIFE SCIENCES, INC.**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**[Name of Trustee]**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

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1191 Second Avenue  
10th Floor  
Seattle, WA 98101

206.389.4510  
Fenwick.com

December 21, 2021

Achieve Life Sciences, Inc.  
1040 West Georgia Street, Suite 1030  
Vancouver, BC V6E 4H1

Ladies and Gentlemen:

At your request, we have examined the Registration Statement on Form S-3 filed by Achieve Life Sciences, Inc., a Delaware corporation (the “**Company**”) with the Securities and Exchange Commission (the “**Commission**”) on or about December 21, 2021 (the “**Registration Statement**”) in connection with the registration under the Securities Act of 1933, as amended (the “**Securities Act**”), of the offering and sale from time to time of (i) shares of the Company’s common stock, \$0.001 par value per share (the “**Common Stock**”), (ii) shares of the Company’s preferred stock, \$0.001 par value per share (the “**Preferred Stock**”), (iii) one or more series of debt securities (the “**Debt Securities**”) issuable pursuant to an indenture (the “**Indenture**”) by and between the Company and a financial institution to be identified therein as trustee (the “**Trustee**”), (iv) warrants to purchase Common Stock, Preferred Stock and/or Debt Securities (the “**Warrants**”), (v) subscription rights to purchase Common Stock, Preferred Stock and/or Debt Securities (the “**Subscription Rights**”), and/or (vi) units consisting of any combination of such foregoing securities described in clauses (i) through (v) above (the “**Units**”) having an aggregate public offering price of up to \$100,000,000. The Common Stock, the Preferred Stock, the Debt Securities, the Warrants, the Subscription Rights and the Units are collectively referred to herein as the “**Securities**.” The Securities may be sold from time to time by the Company as set forth in the Registration Statement, the prospectus contained within the Registration Statement (the “**Prospectus**”) and supplements to the Prospectus.

We advise you that we have also examined (i) the sales agreement prospectus filed, together with the Registration Statement and Prospectus, with the Commission on December 21, 2021 (the “**Sales Agreement Prospectus**”) relating to the sale by the Company through Virtu Americas LLC, as the sales agent (the “**Sales Agent**”), from time to time of shares of Common Stock (the “**Placement Shares**”) having an aggregate maximum offering price of up to \$25,000,000 pursuant to the Registration Statement and the Sales Agreement Prospectus for the sale of the Placement Shares included in the Registration Statement, and (ii) that certain Sales Agreement, dated as of December 21, 2021, by and between the Company and the Sales Agent (the “**Sales Agreement**”).

In connection with our opinion expressed below we have examined originals or copies of the Company’s Second Amended and Restated Certificate of Incorporation, as amended (the “**Restated Certificate**”) and Sixth Amended and Restated Bylaws, as amended (the “**Bylaws**”) and, together with the Restated Certificate, as each may be amended, modified or restated, the “**Charter Documents**”), certain corporate proceedings of the Company’s board of directors (the “**Board**”) and stockholders relating to the Registration Statement, the Company’s Restated Certificate and Bylaws, and such other agreements, documents, certificates and statements of the Company, its transfer agent and public or government officials, as we have deemed advisable, and have examined such questions of law as we have considered necessary. We have assumed, and express no opinion as to, the genuineness of all signatures on

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documents submitted to us, the authenticity and completeness of all documents submitted to us as originals, the conformity to originals and completeness of all documents submitted to us as copies, the legal capacity of all persons or entities (except for the Company) executing the same, the absence of any undisclosed termination, modification, waiver or amendment to any document reviewed by us, the absence of any other extrinsic agreements or documents that might change or affect the interpretation or terms of documents we have reviewed, and the due authorization, execution and delivery of all such documents where due authorization, execution and delivery are prerequisites to the effectiveness thereof. In giving our opinion, we have also relied upon a good standing certificate regarding the Company issued by the Delaware Secretary of State dated December 21, 2021 and a management certificate addressed to us and dated of even date herewith executed by the Company containing certain factual representations (the “**Management Certificate**”).

We also have assumed that any certificates or instruments representing the Securities, including the Placement Shares, will be, when issued, properly signed by authorized officers of the Company, and, in the case of Debt Securities, properly authenticated in accordance with the terms of the Indenture and delivered to the intended recipients with the intent that the Company be bound thereby. Furthermore, with respect to the Company’s uncertificated capital stock, we assume that issued Common Stock, including any Placement Shares, will not be reissued by the Company in uncertificated form until any previously issued stock certificate representing such issued Common Stock has been surrendered to the Company in accordance with Section 158 of the Delaware General Corporation Law, and that the Company will properly register the transfer of the Common Stock to the purchasers of such Common Stock on the Company’s record of uncertificated securities. We also have assumed that the Indenture at the time of execution, authentication, issuance and delivery of the Debt Securities will be a valid and legally binding obligation of the Trustee.

As to matters of fact relevant to this opinion, we have relied solely upon our examination of the documents referred to above and the Management Certificate and have assumed the current accuracy and completeness of the information obtained from the documents referred to above and the representations and warranties made by representatives of the Company to us, including but not limited to those set forth in the Management Certificate. We have made no independent investigation or other attempt to verify the accuracy of any of such information or to determine the existence or non-existence of any other factual matters.

We are admitted to practice law in the State of Washington and we render this opinion only with respect to, and express no opinion herein concerning the application or effect of the laws of any jurisdiction other than (i) the existing laws of the State of Washington, (ii) the Delaware General Corporation Law, and (iii) solely with respect to whether or not the Debt Securities are the valid and binding obligations of the Company, the existing laws of the state of New York (clauses (i) through (iii) collectively, the “**Applicable Laws**”). To the extent that any Warrant Agreement, Subscription Rights Agreement or Unit Agreement (each as defined below) is governed by the laws of any jurisdiction other than the State of Washington, our opinion expressed below assumes that Internal Washington Law (as defined below) will exclusively apply to and govern such Warrant Agreement, Subscription Rights Agreement or Unit Agreement, without regard to any interpretation or construction that might be indicated by the laws stated as governing any such Warrant Agreement, Subscription Rights Agreement or Unit Agreement. As used herein “**Internal Washington Law**” means the internal laws of the State of Washington applicable to a contract made by Washington residents in the State of Washington that selects Washington law as the governing law of such contract, without regard to any laws or equitable principles regarding choice of law, conflict of laws or public policies that might make any other law(s) applicable. Without limitation, we express no opinion with respect to the federal laws of the United States of America or the securities or “blue sky” laws of any state or any local or regional laws.

In connection with our opinions expressed below, we have assumed that, (i) at or prior to the time of the delivery of any of the Securities, including the Placement Shares, there will not have occurred any change in the law or the facts affecting the validity of the Securities, (ii) if any Debt Securities are issued, such Debt Securities will only be issued pursuant to the Indenture in the form filed with the Registration Statement as an exhibit and that there will not have occurred any change in law affecting the enforceability of the Debt Securities or the Indenture, (iii) all applicable covenants binding on or applicable to the Company restricting the issuance of Debt Securities will have been validly waived, (iv) the Registration Statement and any amendments (including any necessary post-effective amendments) will have been declared effective under the Securities Act, (v) at the time of the offer, issuance and sale of any Securities, including the Placement Shares, no stop order suspending the Registration Statement's effectiveness will have been issued and remain in effect, (vi) no future amendments will be made to the Charter Documents that would be in conflict with or inconsistent with the Company's right and ability to issue the Securities, including without limitation the Placement Shares, (vii) at the time of each offer, issuance and sale of any Securities, including without limitation the Placement Shares, the Company will have a sufficient number of authorized and unissued and unreserved shares of the applicable class or series of its capital stock included in (or purchasable upon exercise or conversion of) the Securities, including without limitation the Placement Shares, so issued and sold (after taking into account all other outstanding securities of the Company which may require the Company to issue shares of such applicable class or series) to be able to issue all such shares, and (viii) all purchasers of Securities, including without limitation the purchasers of the Placement Shares, will timely pay in full to the Company all amounts they have agreed to pay to purchase such Securities, including the Placement Shares, as approved by the Board or a duly authorized committee thereof, and that the purchase price of any Securities, including the Placement Shares, that are shares of capital stock will not be less than the par value thereof. We also have assumed that the terms of any Debt Securities to be established subsequent to the date hereof, the issuance and delivery of Securities, including the Placement Shares, subsequent to the date hereof and the compliance by the Company with the terms of such Securities, including the Placement Shares, will not violate any applicable law (including, without limitation, any law relating to usury or similar laws) or result in a violation of any provision of any of the Charter Documents or of any instrument or agreement then binding upon the Company or any restriction imposed by any court or governmental body having jurisdiction over the Company.

This opinion is qualified by, and is subject to, and we render no opinion with respect to, the following limitations and exceptions to the enforceability of the Debt Securities:

- (1) The effect of the laws of bankruptcy, insolvency, reorganization, arrangement, moratorium, fraudulent conveyance, assignment for the benefit of creditors, and other similar laws now or hereinafter in effect relating to or affecting the rights and remedies of creditors, including the effect of statutory or other laws regarding fraudulent transfers or preferential transfers.
- (2) The effect of general principles of equity and similar principles, including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing, public policy and unconscionability, and the possible unavailability of specific performance, injunctive relief, or other equitable remedies, regardless of whether considered in a proceeding in equity or at law.
- (3) The effect of laws relating to usury or permissible rates of interest for loans, forbearances or the use of money.

We express no opinion regarding the effectiveness of any waiver or stay, extension or of unknown future rights. Further, we express no opinion regarding the effect of provisions relating to indemnification, exculpation or contribution to the extent such provisions may be held unenforceable as contrary to federal or state securities laws or public policy.

The Company has informed us that the Company intends to issue the Securities, including without limitation the Placement Shares, from time to time on a delayed or continuous basis. This opinion is limited to the Applicable Laws, including the rules and regulations thereunder, as in effect on the date hereof. We are basing this opinion on our understanding that, prior to issuing any Securities, excluding the Placement Shares, in connection with the Registration Statement, the Company will advise us in writing of the terms thereof and other information material thereto, will afford us an opportunity to review the operative documents pursuant to which such Securities are to be issued (including the Registration Statement, the Prospectus and the applicable supplement to the Prospectus, as then in effect) and will file such supplement or amendment to this opinion (if any) as we may reasonably consider necessary or appropriate with respect to such Securities. However, we undertake no responsibility to monitor the Company's future compliance with applicable laws, rules or regulations of the Commission or other governmental body. In particular, except with respect to the Placement Shares, we assume that the Company will obtain the requisite approval of the Board and the requisite approval of its stockholders, if required by the laws of the State of Delaware and the Charter Documents, or if necessary because the Company does not have a sufficient number of authorized but unissued and unreserved shares of its capital stock at the time of issuance to comply with any Securities. Except with respect to the Placement Shares, we also assume the Company will timely file any and all supplements to the Registration Statement and Prospectus as are necessary to comply with applicable laws in effect from time to time and duly amend its Restated Certificate to increase the authorized number of shares of its capital stock as necessary if the number of such shares to be sold pursuant to the Registration Statement would cause the Company to issue more such shares than it has authorized and unissued and unreserved.

With respect to our opinion expressed in paragraph (7) below, we have assumed that, upon the issuance of any of the Placement Shares, the total number of shares of Common Stock issued and outstanding and reserved for future issuance will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its Certificate of Incorporation, as then in effect.

Based upon the foregoing, we are of the following opinion:

1. With respect to the shares of Common Stock registered pursuant to the Registration Statement (other than the Placement Shares), when (i) the issuance of and the terms of the offering of such shares of Common Stock and related matters have been duly authorized by all required corporate action of the Board or a duly authorized committee thereof, and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws and (ii) if required, certificates representing the shares of Common Stock have been duly executed, countersigned, registered and delivered either (a) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Common Stock, upon payment of the consideration therefor (in an amount not less than the par value of the Common Stock) provided for therein and approved by the Board or a duly authorized committee thereof, or (b) upon conversion or exercise of any other security of the Company, in accordance with the terms of such security or the instrument governing such security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (in an amount not less than the par value per share of the Common Stock), then such shares of Common Stock will be validly issued, fully paid and nonassessable.

2. With respect to any particular series of shares of Preferred Stock registered pursuant to the Registration Statement, when (i) the issuance and terms of such shares of Preferred Stock, the terms of the offering thereof and related matters, including the adoption of a certificate of designation relating to such



Preferred Stock conforming to the Company's Restated Certificate and Bylaws and the Delaware General Corporation Law (a "*Certificate*") and the filing of such Certificate with the Secretary of State of the State of Delaware (or the filing of an amendment to the Company's Certificate of Incorporation to similar effect), have been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws and (ii) if required, certificates representing the shares of Preferred Stock have been duly executed, countersigned, registered and delivered either (a) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Preferred Stock, upon payment of the consideration therefor (in an amount not less than the par value per share of such Preferred Stock) provided for therein and approved by the Board or (b) upon conversion or exercise of any other security of the Company, in accordance with the terms of such security or the instrument governing such security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (in an amount not less than the par value per share of the Preferred Stock), then such shares of Preferred Stock will be validly issued, fully paid and nonassessable.

3. With respect to any Debt Securities registered pursuant to the Registration Statement, when (i) the issuance of such Debt Securities has been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws, (ii) an Indenture relating to such Debt Securities in the form filed with the Registration Statement as an exhibit has been duly authorized and validly executed and delivered by each of the Company (by duly authorized officers of the Company) and the Trustee, (iii) the form and terms of the Debt Securities have been duly established in accordance with the Indenture pursuant to resolutions duly adopted by the Board and as set forth in an officer's certificate or supplemental indenture duly authorized by the Board in accordance with the Charter Documents and Applicable Laws and duly executed by an authorized officer of the Company, and (iv) instruments representing such Debt Securities have been duly executed and authenticated in accordance with the terms of the Indenture and any supplement thereto, and issued, sold and delivered in the manner and for the consideration approved by the Board and stated in the Registration Statement, the Prospectus and any prospectus supplement relating thereto (as amended as of the date of such issuance, sale and delivery), any applicable definitive purchase, underwriting or similar agreement and upon the exercise of Warrants to purchase Debt Securities, upon payment of the consideration therefor provided for therein, then the Debt Securities will be validly issued and will constitute valid and binding obligations of the Company.

4. With respect to any Warrants registered pursuant to the Registration Statement, when (i) the issuance and terms of such Warrants, the terms, execution and delivery of the warrant agreement relating to the Warrants ("*Warrant Agreement*"), the terms of the offering thereof and related matters have been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws, (ii) the Warrant Agreement has been duly authorized and validly executed and delivered by the Company by duly authorized officers of the Company, and (iii) such Warrants have been duly executed, issued and delivered by the Company by duly authorized officers of the Company in accordance with the provisions of the applicable Warrant Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board, upon payment of the consideration therefor provided for therein and approved by the Board, such Warrants will constitute valid and binding obligations of the Company.

5. With respect to any Subscription Rights registered pursuant to the Registration Statement, when (i) the issuance and terms of such Subscription Rights, the terms, execution and delivery of the subscription rights agreement relating to the Subscription Rights ("*Subscription Rights Agreement*"), the terms of the offering thereof and related matters have been duly authorized by all required corporate action of the Board and, if required, the stockholders of the Company in accordance with the Charter Documents and Applicable Laws, (ii) the Subscription Rights Agreement has been duly authorized and validly executed and delivered, and (iii) such Subscription Rights have been duly executed, issued and

delivered by the Company by duly authorized officers of the Company in accordance with the provisions of the applicable Subscription Rights Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board, upon payment of the consideration therefor provided for therein and approved by the Board, such Subscription Rights will constitute valid and binding obligations of the Company.

6. With respect to any Units registered pursuant to the Registration Statement, when (i) the conditions outlined in the immediately preceding paragraphs (1) through (5) that apply to the Securities that make up such Units are all met, (ii) the issuance and terms of such Units, the terms, execution and delivery of the unit purchase agreement relating to such Units ("**Unit Agreement**"), the terms of the offering thereof and related matters have been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company, (iii) the Unit Agreement has been duly authorized and validly executed and delivered by the Company by duly authorized officers of the Company, and (iv) such Units have been duly executed, issued and delivered by the Company by duly authorized officers of the Company in accordance with the provisions of the applicable Unit Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board, upon payment of the consideration therefor provided for therein and approved by the Board, such Units will constitute valid and binding obligations of the Company.

7. The Placement Shares, to be issued and sold by the Company, have been duly authorized for issuance and, when issued, sold and delivered in the manner of and for consideration (of not less than par value per share of the Common Stock) in the manner contemplated by the Sales Agreement and the Sales Agreement Prospectus and in accordance with the resolutions duly adopted and to be duly adopted by the Board and to be duly adopted by the Placement Committee of the Board with respect to the offer, sale and issuance of the Placement Shares, will be validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement and further consent to all references to us, if any, in the Registration Statement, the Prospectus and Sales Agreement Prospectus constituting parts thereof and any amendments thereto. In giving this consent we do not thereby admit that we come within the category of persons whose consent is required by the Securities Act or by the rules and regulations promulgated thereunder.

*[Concluding Paragraph Follows on Next Page]*

This opinion is intended solely for use in connection with the issuance and sale of the Securities subject to the Registration Statement and is not to be relied upon for any other purpose. In providing this letter, we are opining only as to the specific legal issues expressly set forth above, and no opinion shall be inferred as to any other matter or matters. This opinion is rendered on, and speaks only as of, the date of this letter first written above, is based solely on our understanding of facts in existence as of such date after the aforementioned examination and does not address any potential changes in facts, circumstance or law that may occur after the date of this opinion letter. We assume no obligation to advise you of any fact, circumstance, event or change in the law or the facts that may hereafter be brought to our attention whether or not such occurrence would affect or modify any of the opinions expressed herein.

Very truly yours,

/s/ Fenwick & West LLP

FENWICK & WEST LLP

*Consent of Independent Registered Public Accounting Firm*

We hereby consent to the incorporation by reference in this registration statement on Form S-3 of Achieve Life Sciences, Inc. of our report dated March 11, 2021 relating to the financial statements of Achieve Life Sciences, Inc., which appears in Achieve Life Sciences, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2020. We also consent to the reference to us under the heading "Experts" in such registration statement.

**Chartered Professional Accountants**

Vancouver, Canada

December 21, 2021