

PROSPECTUS SUPPLEMENT
(to Prospectus dated January 5, 2022)



13,086,151 Shares of Common Stock

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering 13,086,151 shares of our common stock at a public offering price of \$4.585 per share.

In a concurrent private placement, we are also selling to the purchasers of shares of our common stock in this offering warrants to purchase up to 13,086,151 shares of our common stock with an exercise price of \$4.906 per share (provided, however, that the purchasers may elect to exercise the warrants for pre-funded warrants in lieu of shares of common stock at an exercise price per pre-funded warrant of \$4.906, minus \$0.001), referred to herein as the private placement warrants. The private placement warrants and the shares of our common stock (or pre-funded warrants) issuable upon exercise of the private placement warrants are not being registered under the Securities Act of 1933, as amended (the "Securities Act"), are not being offered pursuant to this prospectus supplement and the accompanying prospectus, and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder.

In addition, certain of our officers and directors are participating in this offering and will purchase an aggregate of 20,000 shares of common stock and private placement warrants to purchase 20,000 shares of common stock (or if they so elect, pre-funded warrants in lieu of shares of common stock) on the same terms as the other investors. See "Plan of Distribution" herein for more information regarding these arrangements.

Our common stock is listed on The Nasdaq Capital Market under the symbol "ACHV." On February 28, 2024, the last reported sale price of our common stock was \$4.46 per share.

We are a "smaller reporting company" as defined under Rule 405 of the Securities Act of 1933, as amended, and as such, we have elected to comply with certain reduced public company reporting requirements.

INVESTING IN OUR SECURITIES INVOLVES SIGNIFICANT RISKS. YOU SHOULD REVIEW CAREFULLY THE "RISK FACTORS" BEGINNING ON PAGE S-7 OF THIS PROSPECTUS SUPPLEMENT AND PAGE 4 OF THE ACCOMPANYING PROSPECTUS, AS WELL AS THE RISK FACTORS DESCRIBED UNDER THE SECTION ENTITLED "RISK FACTORS" CONTAINED IN OUR QUARTERLY REPORT ON FORM 10-Q FOR THE QUARTER ENDED SEPTEMBER 30, 2023, BEFORE INVESTING IN OUR SECURITIES.

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

	Per Share	Total
Public offering price	\$4.585	\$60,000,002
Placement agent fees(1)	\$0.252	\$3,297,710
Proceeds to us, before expenses	\$4.333	\$56,702,292

(1) We have also agreed to reimburse the placement agents for certain expenses. See “Plan of Distribution.”

Delivery of the shares of common stock offered hereby will be made through the book-entry facilities of The Depository Trust Company on or about March 4, 2024, subject to customary closing conditions.

Lake Street

Jones

The date of this prospectus supplement is February 28, 2024

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Prospectus

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part, including the documents incorporated herein by reference, is the prospectus supplement, which describes the specific terms of this offering. The second part, including the documents incorporated therein by reference, is the accompanying prospectus, which provides more general information. Generally, when we refer to “this prospectus,” we are referring to both parts of this document combined. We urge you to carefully read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus, before buying any of the securities being offered under this prospectus supplement. This prospectus supplement may add, update or change information contained in the accompanying prospectus. If the information varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this 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 the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

Neither we nor the placement agents have authorized anyone to provide you with any information or to make any representation, other than those contained or incorporated by reference in this prospectus supplement and the accompanying prospectus, or in any free writing prospectus prepared by us or on our behalf or to which we have referred you. Neither we nor the placement agents take any responsibility for, and provide no assurance as to the reliability of, any other information that others may give you. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus 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.

We are offering to sell, and seeking offers to buy, our securities only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the securities in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the securities and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Market data and industry statistics used throughout this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus are based on independent industry publications, reports by market research firms and other published independent sources. Although we believe these sources are credible, we have not independently verified the data or information obtained from these sources. Accordingly, investors should not place undue reliance on this information. By including such market data and information, we do not undertake a duty to update or provide that data in the future.

When used in this prospectus supplement and the accompanying prospectus, the terms “Company,” “Achieve,” “we,” “our” and “us” refer to Achieve Life Sciences, Inc., a Delaware corporation, and its subsidiaries, unless otherwise specified or unless the context requires otherwise.

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement, the accompanying prospectus or any related free writing prospectus are the property of their respective owners.

PROSPECTUS SUPPLEMENT SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus supplement or the accompanying prospectus, or incorporated in this prospectus supplement or the accompanying prospectus by reference. This summary does not contain all of the information you should consider before buying securities in this offering. You should carefully read this entire prospectus supplement and the accompanying prospectus, including each of the documents incorporated herein or therein by reference, before making an investment decision. Unless the context otherwise requires, the terms “Achieve,” “the Company,” “we,” “us” and “our” in this prospectus supplement and accompanying prospectus refer to Achieve Life Sciences, Inc., and its subsidiaries.

Overview

We are a late-stage pharmaceutical company committed to the global development and commercialization of cytisinicline for smoking cessation and nicotine dependence. With more than one billion tobacco smokers globally and over 28 million smokers in the United States alone, smoking remains the leading cause of preventable disease and death, responsible for more than eight million deaths annually worldwide. Our primary focus is to address this global epidemic.

We also plan to continue expanding our focus to address other methods of nicotine addiction such as e-cigarettes/vaping. The use of e-cigarettes continues to be widespread, with most recent reports from the Centers for Disease Control and Prevention indicating nearly 11 million adult users in the United States alone in 2019. While e-cigarettes have been historically viewed as less harmful than combustible cigarettes, their long-term safety remains controversial. In a study we conducted, surveying approximately 500 users of nicotine vaping devices or e-cigarettes, approximately 73% of participants responded that they intend to quit vaping within the next three to 12 months. Of those who intended to quit even sooner, within the next three months, more than half stated they would be extremely likely to try a new prescription product to help them do so. We believe that cytisinicline, if approved for e-cigarette cessation use, could be the first prescription drug indicated for vape and e-cigarette users who are ready to quit their nicotine addiction.

Recent Developments

Clinical Update

We have reached agreement with the U.S. Food and Drug Administration (“FDA”) on long-term cytisinicline exposure requirements and timing of safety exposure data submission.

During pre-New Drug Application (“NDA”) discussions held in the fourth quarter of 2023, the FDA expressed support for an NDA submission based on adequate data to assess for efficacy from the two completed randomized and controlled Phase 3 trials. In addition, the FDA advised that long-term exposure data to assess for safety beyond 12 weeks would be needed to adequately assess safety risks given that the FDA views smoking cessation drugs as products for chronic, intermittent use as patients may relapse and require subsequent courses of treatment over a lifetime. We have reached agreement with the FDA that a single, open-label study evaluating the long-term safety effects of cytisinicline will be sufficient to complete the requirement and enable an NDA submission anticipated in the first half of 2025.

We plan to initiate the “ORCA-OL” open label exposure trial in the second quarter of 2024 and expect to enroll subjects who previously received cytisinicline as part of the ORCA-program studies. Participants, whether they were previously using nicotine through smoking or vaping, will be encouraged to enroll in the study if they are currently using either, or both, forms of nicotine. Subjects will receive cytisinicline treatment and be monitored for safety events for up to one year. Based on agreement with FDA to follow ICH E1 guidance, the NDA submission will include data from a minimum of 300 subjects who have received cumulative cytisinicline treatment for six months, and prior to potential approval, we will provide the FDA with data from at least 100 subjects treated with cytisinicline for a cumulative duration of one year.

Financial Update

While we have not finalized our financial statements for the year ended December 31, 2023, based on our current estimates we had approximately \$15.6 million in cash, cash equivalents and restricted cash as of December 31, 2023. The estimated cash, cash equivalents and restricted cash information included in this prospectus supplement is preliminary and is subject to change. The preliminary financial data included in this prospectus supplement has been prepared by, and is the responsibility of, our management. PricewaterhouseCoopers LLP has not audited, reviewed, compiled or applied agreed-upon procedures with respect to the preliminary financial information. Accordingly, PricewaterhouseCoopers LLP does not express an opinion or any other form of assurance with respect thereto. The PricewaterhouseCoopers LLP report incorporated by reference into this document relates to our previously issued financial statements. It does not extend to the preliminary financial information and should not be read to do so.

On May 14, 2015, we entered into a Share Purchase Agreement with Sopharma AD to acquire 75% of the outstanding shares of Extab Corporation for \$2.0 million in cash and \$2.0 million in a deferred payment, contingent on regulatory approval of cytosine by the FDA or the European Medicines Agency. From an accounting perspective, we have assessed the likelihood of meeting the contingent event as unlikely and will assess this contingent event quarterly as we proceed with the development of cytosinicline and pursue regulatory approval.

On February 26, 2024, we entered into a non-binding term sheet (the “Term Sheet”) for an extension of the maturity date for the term loans outstanding pursuant to our contingent convertible debt agreement (“Debt Agreement”) with Silicon Valley Bank (“SVB”) and SVB Innovation Credit Fund VIII, L.P. (together with SVB, the “Lenders”). There is no guarantee that we will be able to enter into a definitive agreement with the Lenders on the terms provided in the Term Sheet or any at all. See “Risk Factors—We are restricted in our corporate activities by our existing debt facility.”

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 2722 29th Drive SE, Suite 100, Bothell, WA 98021 and 1040 West Georgia Street, Suite 1030, Vancouver, B.C. V6E 4H1, and our telephone number is (604) 210-2217.

THE OFFERING

Securities Offered by Us	13,086,151 shares of common stock.
Common Stock to be Outstanding After This Offering	34,251,911 shares.
Use of Proceeds	<p>We estimate that the net proceeds to us from this offering will be approximately \$56.2 million, after deducting the placement agent fees and estimated offering expenses payable by us. If all of the private placement warrants offered by us in the concurrent private placement transaction are exercised in full, we would receive an additional \$64.2 million in gross proceeds. We intend to use the net proceeds from the sale of the securities to fund clinical development of cytisinicline through NDA submission, expected in the first half of 2025, including the ORCA-OL clinical trial, to fund other cytisinicline related research and clinical development activities and for working capital and general corporate purposes. Assuming all of the private placement warrants are exercised, we expect that the net proceeds from this offering and the concurrent private placement transaction will be sufficient to fund the development of cytisinicline into 2026 and through potential FDA approval. 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” and “Private Placement Transaction.”</p>
Insider Participation	<p>Certain of our officers and directors are participating in this offering and will purchase an aggregate of 20,000 shares of common stock and private placement warrants to purchase 20,000 shares of common stock (or if they so elect, pre-funded warrants in lieu of shares of common stock) on the same terms as the other investors. See “Plan of Distribution” below more information regarding these arrangements.</p>
Risk Factors	<p>Investing in our securities involves significant risks. You should read the “Risk Factors” section beginning on page S-7 of this prospectus supplement and in the documents incorporated by reference in this prospectus supplement and accompanying prospectus, including the risk factors described under the section entitled “Risk Factors” contained in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2023, for a discussion of factors to consider before deciding to purchase shares of our common stock.</p>
Nasdaq Capital Market Symbol	“ACHV”
Private Placement Transaction	<p>In a concurrent private placement transaction (the “private placement transaction”), we are also selling to the purchasers warrants to purchase up to 13,086,151 shares of our common stock (or, if the purchaser elects, pre-funded warrants) (the “private placement warrants”).</p> <p>The private placement warrants have an exercise price of \$4.906 per share (or, if the purchaser elects to exercise for a pre-funded warrant, an exercise price of \$4.906, minus \$0.001, the exercise price of each pre-funded warrant). Each private placement warrant will be exercisable immediately upon issuance and will expire on or prior to the earlier of (x) three and one-half years after the date of issuance, and (y) 30 days following the Company’s public disclosure of the</p>

acceptance of an NDA for cytisinicline by the FDA in a Day 74 Letter or equivalent correspondence.

The private placement warrants and the shares of our common stock (or pre-funded warrants) issuable upon the exercise of the private placement warrants are not being registered under the Securities Act, are not being offered pursuant to this prospectus supplement and the accompanying prospectus and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder. Accordingly, purchasers may only sell shares of common stock (or pre-funded warrants) issued upon exercise of the private placement warrants pursuant to an effective registration statement under the Securities Act covering the resale of those shares (or pre-funded warrants), an exemption under Rule 144 under the Securities Act or another applicable exemption under the Securities Act.

The number of shares of common stock to be outstanding after this offering in the table above is based on 21,165,760 shares of common stock outstanding as of September 30, 2023, and excludes:

- 1,461,982 shares of common stock issuable upon the exercise of options outstanding as of September 30, 2023 with a weighted average exercise price of \$12.15 per share;
- 466,500 shares of common stock issuable upon the exercise of options granted after September 30, 2023, with a weighted average exercise price of \$4.55 per share;
- 507,875 shares of common stock subject to restricted stock units outstanding as of September 30, 2023;
- 721,000 shares of common stock subject to restricted stock units granted after September 30, 2023;
- 4,977,386 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2023, with a weighted average exercise price of \$5.84 per share;
- 142,857 shares of common stock issuable upon the exercise of pre-funded warrants outstanding as of September 30, 2023, with an exercise price of \$0.001 per share;
- 200,723 shares of common stock reserved for future issuance under our equity incentive plans as of September 30, 2023;
- 1,058,288 additional shares of common stock reserved for future issuance under our equity incentive plans after September 30, 2023; and
- up to 13,086,151 shares of our common stock issuable upon the exercise of the private placement warrants to be issued in the private placement transaction, at an exercise price of \$4.906 per share.

RISK FACTORS

An investment in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed below, the risk factors beginning on page 3 of the accompanying prospectus, as well as the risk factors discussed under the section entitled "Risk Factors" contained in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2023 as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended (the "Exchange Act") each of which is incorporated by reference in this prospectus supplement and accompanying prospectus in their entirety, together with all of the other information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference herein and therein, and any related free writing prospectus. 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. The occurrence of any of these known or unknown risks might cause you to lose all or part of your investment in the offered securities.

Risks Related to this Offering and the Concurrent Private Placement

Management will have broad discretion as to the use of proceeds from this offering and we may use the net proceeds in ways with which you may disagree.

We intend to use the net proceeds from the sale of the securities to fund clinical development of cytisinicline through NDA submission, expected in the first half of 2025, including the ORCA-OL clinical trial, to fund other cytisinicline related research and clinical development activities and for working capital and general corporate purposes. Assuming all of the private placement warrants are exercised, we expect that the net proceeds from this offering and the concurrent private placement transaction will be sufficient to fund the development of cytisinicline into 2026 and through potential FDA approval. 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. Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. Accordingly, you will be relying on the judgment of our management on the use of net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our product candidates and cause the price of our common stock to decline.

You will experience immediate dilution as a result of this offering and may experience additional dilution in the future.

If you purchase common stock in this offering, you will incur immediate dilution of \$2.895 per share, representing the difference between the public offering price of \$4.585 per share and our pro forma net tangible book value per share as of September 30, 2023 after giving effect to this offering. Furthermore, you will experience additional dilution if the private placement warrants are exercised for shares of common stock. For additional information, see "Dilution" below. To the extent outstanding stock options or pre-funded warrants are exercised or restricted stock units are settled, 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.

The private placement warrants purchased in the concurrent private placement transaction may not have any value and we will not receive any additional proceeds if the private placement warrants are not exercised.

The private placement warrants being offered in the concurrent private placement transaction will be exercisable until the earlier of (x) three and one-half years after the date of issuance, and (y) 30 days following the Company's public disclosure of the acceptance of an NDA for cytisinicline by the FDA in a Day 74 Letter or equivalent correspondence, at an exercise price of \$4.906 per share. If all of the private placement warrants offered by us in the concurrent private placement transaction are exercised in full, we would receive an additional \$64.2

million in gross proceeds. In the event that the price of a share of our common stock does not exceed the exercise price of the private placement warrants during the period when the private placement warrants are exercisable, the private placement warrants may not have any value and may never be exercised. If the private placement warrants expire unexercised, we will not receive any additional proceeds from the private placement warrants, which may result in delay or suspension of the development of cytisinicline, the need for additional financings, which may be dilutive, and could otherwise adversely affect our business.

The private placement warrants purchased in the concurrent private placement transaction do not entitle the holder to any rights as common stockholders until the holder exercises the private placement warrant for shares of our common stock.

Until you acquire shares of our common stock upon exercise of your private placement warrants purchased in the private placement transaction, such private placement warrants will not provide you any rights as a common stockholder, except as set forth in the private placement warrants. Upon exercise of your private placement warrants purchased in the private placement transaction for shares of common stock (as opposed to pre-funded warrants), you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs on or after the exercise date.

There is no public market for the private placement warrants in the private placement transaction.

There is no established public trading market for the private placement warrants being offered in the private placement transaction, and we do not expect a market to develop. In addition, we do not intend to apply for listing the private placement warrants on any national securities exchange or other trading market. Without an active market, the liquidity of the private placement warrants will be limited.

Significant holders or beneficial holders of our common stock may not be permitted to exercise private placement warrants that they hold.

A holder of a private placement warrant will not be entitled to exercise any portion of any private placement warrant for shares of common stock, which, upon giving effect to such exercise, would cause (i) the aggregate number of shares of our common stock beneficially owned by the holder (together with its affiliates) to exceed 4.99% (or, at the election of the holder, 9.99% or 19.99%) of the number of shares of our common stock outstanding immediately after giving effect to the exercise, or (ii) the combined voting power of our securities beneficially owned by the holder (together with its affiliates) to exceed 4.99% (or, at the election of the holder, 9.99% or 19.99%) of the combined voting power of all of our securities then outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the private placement warrants, as applicable, unless such percentage is increased upon at least 61 days' prior notice, but not in excess of 19.99%. As a result, holders may not be able to exercise their private placement warrants for shares of our common stock at a time when it would be financially beneficial for them to do so. In such circumstance a holder could seek to sell their private placement warrants to realize value, but may be unable to do so in the absence of an established trading market for the private placement warrants. In addition, if a holder is unable to exercise their private placement warrants for shares of our common stock, we will not receive any additional proceeds from those private placement warrants.

Risks Related to the Development of Our Product Candidate Cytisinicline

We plan to submit an NDA to the FDA for approval of cytisinicline as an aid in treating nicotine dependence for smoking cessation, based largely on data from our recently completed Phase 3 ORCA-2 and ORCA-3 clinical trials and planned ORCA-OL trial; however, there can be no assurance that the data from our clinical trials will ultimately support an NDA filing or that the FDA will grant marketing approval of cytisinicline without additional clinical or nonclinical studies, or at all.

Drug product candidates must demonstrate substantial evidence of effectiveness, as well as safety, to be approved in the United States. The FDA has interpreted that statutory standard as generally requiring at least two adequate and well-controlled clinical trials, each convincing on its own, to establish effectiveness. Under certain circumstances the FDA will determine that data from one adequate and well-controlled clinical trial together with

confirmatory evidence obtained prior to or after such clinical trial are sufficient to constitute substantial evidence of effectiveness.

Cytisinicline is a naturally occurring, plant-based alkaloid. Cytisinicline is structurally similar to nicotine and has a well-defined, dual-acting mechanism of action that is both agonistic and antagonistic. It is believed to aid in smoking cessation and the treatment of nicotine addiction by interacting with nicotine receptors in the brain, reducing the severity of nicotine withdrawal symptoms through agonistic effects on nicotine receptors and reducing the reward and satisfaction associated with nicotine through antagonistic properties. Cytisinicline has been studied in two company-sponsored randomized, multicenter, double-blind, placebo controlled Phase 3 clinical studies that randomized 1,602 adult smokers in 37 study sites across the United States. In April 2022 and May 2023, we announced positive topline results for the ORCA-2 and ORCA-3 Phase 3 studies, respectively.

In late October 2023, we conducted a pre-NDA meeting with the FDA. The FDA advised that long-term exposure data beyond 12 weeks would be needed to adequately assess safety risks given that the FDA views smoking cessation drugs as products for chronic, repeat, or intermittent use as patients may relapse and require subsequent courses of treatment over a lifetime. We have reached agreement with the FDA that a single, open-label study evaluating the long-term safety of cytisinicline will be sufficient to complete the requirement and enable an NDA submission anticipated in the first half of 2025. However, regardless of these discussions and the results of the ORCA-OL open label study, the FDA may determine that:

- the existing data, and the data from the new open label study, ORCA-OL, are not sufficiently robust or convincing and may require additional clinical and/or nonclinical studies prior to approval of cytisinicline for smoking cessation and nicotine dependence;
- the population studied in the clinical program may not be sufficiently broad or representative to assure safety in the full population for which we seek approval;
- the product candidate's risk-benefit ratios for the proposed indication is not acceptable;
- the data collected from clinical trials of our product candidate may not be sufficient to their satisfaction to support the submission of an application for marketing authorization; and
- third-parties' manufacturing processes or facilities with which we contract for clinical and commercial supplies do not meet the standards for approval.

Failure to obtain regulatory approval to market any of our product candidates would significantly harm our business, results of operations, and prospects.

Clinical trials, including the planned ORCA-OL trial, are costly, time consuming and inherently risky, and we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities. Results of earlier clinical trials of cytisinicline are not necessarily predictive of future results, and any advances of cytisinicline into clinical trials may not have favorable results or receive regulatory approval.

Clinical development is expensive, time consuming and involves significant risk. We cannot guarantee that any clinical trial, including the planned ORCA-OL trial, will be conducted as planned or completed on schedule, if at all. Events that may prevent successful or timely completion of the planned ORCA-OL trial, but are not limited to:

- delays in recruiting qualified subjects who previously participated in the ORCA-program studies;
- subjects terminating enrollment in the ORCA-OL trial;
- failure by clinical sites, CROs or other third parties to adhere to clinical trial requirements;
- failure by clinical sites, CROs or other third parties to perform in accordance with the good clinical practices requirements of the FDA or applicable foreign regulatory guidelines;
- disruptions to our supply chain for the cytisinicline required for the ORCA-OL trial;

- the occurrence of previously unknown or unobserved adverse events or tolerability issues associated with our product candidate, including those significant enough to stop the trial or for the FDA or other regulatory agencies to put the ORCA-OL trial on hold;
- the cost of the ORCA-OL trial;
- negative or inconclusive results from the ORCA-OL trial, which may result in us deciding, or regulators requiring us, to conduct further additional clinical trials or abandon development programs in ongoing or other planned indications for cytisinicline;
- discovery of impurities in our cytisinicline drug product, such as nitrosamines, above the regulators' prescribed thresholds; and
- delays in the manufacture or packaging of sufficient quantities of cytisinicline for use the ORCA-OL trial.

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

Further, even if the ORCA-OL trial is completed as planned, we cannot be certain that its long-term safety results will be consistent with the results of the earlier clinical trials of cytisinicline or support an NDA filing. Positive results in non-clinical testing and past clinical trials with respect to the adequate safety and efficacy of cytisinicline do not ensure that results from subsequent clinical trials will also be positive or adequate, and we cannot be sure that the results of subsequent clinical trials will replicate the results of prior clinical trials and non-clinical testing. Any such failure may cause us to abandon cytisinicline, which would negatively affect our ability to conduct our business and generate any product revenues, result in a loss of company value and failure to meet the exercise milestone in the warrants offered hereby and otherwise negatively affect our business.

We are restricted in our corporate activities by our existing debt facility.

We have entered into the Debt Agreement pursuant to which the Lenders provided term loans having an aggregate original principal amount of \$16.6 million ("Convertible Term Loan"). The Convertible Term Loan matures on December 22, 2024; provided that (a) in the event we fail to receive written notice ("Filing Communication"), that the FDA has accepted for filing our NDA with respect to cytisinicline for a smoking cessation indication on or prior to July 31, 2024, the maturity date shall be August 1, 2024 or (b) in the event we receive a Filing Communication with respect to cytisinicline for a smoking cessation indication on or prior to August 14, 2024, but where such Filing Communication specifies any material deficiencies or material filing review issues with respect to such NDA, the maturity date shall be August 15, 2024; provided, further, that in the event we have submitted the NDA on or prior to June 30, 2024, the dates listed in (a) and (b) above shall be extended by one calendar month.

The Debt Agreement contains customary affirmative and restrictive covenants, including covenants regarding the incurrence of additional indebtedness or liens, investments, transactions with affiliates, delivery of financial statements, payment of taxes, maintenance of insurance, dispositions of property, mergers or acquisitions, among other customary covenants. Our obligations under the Debt Agreement are secured by substantially all of our assets, other than intellectual property. In light of our recent discussions with the FDA and our current plans for the submission of an NDA for cytisinicline, if we are unable to secure a waiver or renegotiate the terms of the Debt Agreement, we expect that the Convertible Term Loan will mature on August 1, 2024. We and the Lenders have entered into the non-binding Term Sheet for an extension of the maturity date for the Convertible Term Loan, but there is no guarantee that we will be able to enter into a definitive agreement with the Lenders on these terms or any at all. If our indebtedness is accelerated, we may not be able to repay our debt or borrow sufficient funds to refinance it. Even if we were able to obtain new financing, it may not be on commercially reasonable terms or on

terms that are acceptable to us. If our debt is in default for any reason, or we are required to repay our debt on an accelerated basis, our business, financial condition, results of operations and cash flows could be materially and adversely affected.

Our existing and any future indebtedness may limit our cash flow available to invest in the ongoing needs of our business.

Our outstanding debt combined with our other financial obligations and contractual commitments could have significant adverse consequences, including:

- requiring us to dedicate cash flow from operations or cash on hand to the payment of interest on, and principal of, our debt, which will reduce the amounts available to fund working capital, capital expenditures, product development efforts and other general corporate purposes;
- increasing our vulnerability to adverse changes in general economic, industry and market conditions;
- subjecting us to restrictive covenants that may reduce our ability to take certain corporate actions or obtain further debt or equity financing;
- limiting our flexibility in planning for, or reacting to, changes in our business and our industry; and
- placing us at a competitive disadvantage compared to our competitors that have less debt or better debt servicing options.

We intend to satisfy our current and future debt service obligations with our existing cash and funds from external sources. Nonetheless, we may not have sufficient funds or may be unable to arrange for additional financing to pay the amounts due under our existing or any future debt facility. Funds from external sources may not be available on acceptable terms, if at all.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus 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 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 raise additional capital as needed to fund our planned development and commercialization efforts and repay our existing debt;
- progress and preliminary and future results of any clinical trials;
- anticipated regulatory filings and FDA responses, recommendations, requirements or additional future clinical trials;
- the performance of, and our ability to obtain sufficient supply of cytisinicline in a timely manner from, third-party suppliers and manufacturers;
- 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
- market acceptance of our products and the estimated potential size of these markets; and
- our expectations regarding the impact of the macroeconomic and geopolitical environment, including inflation, rising interest rates, increased volatility in the debt and equity markets, actual or perceived instability in the global banking system, global health crises and pandemics and geopolitical conflict, and their potentially material adverse impact on our business and the execution of our preclinical studies and clinical trials.

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 for the quarter ended September 30, 2023, filed with the Securities and Exchange Commission on November 9, 2023 and other documents we have filed with the Securities and Exchange Commission 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.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of common stock in this offering will be approximately \$56.2 million, after deducting the placement agent fees and estimated offering expenses payable by us. We will not receive any proceeds from the sale of the private placement warrants in the concurrent private placement transaction unless and until they are exercised. If all of the private placement warrants offered by us in private placement transaction are exercised in full, we would receive an additional \$64.2 million in gross proceeds. We intend to use the net proceeds from the sale of the common stock to fund clinical development of cytisinicline through NDA submission, expected in the first half of 2025, including the ORCA-OL clinical trial, to fund other cytisinicline related research and clinical development activities and for working capital and general corporate purposes. Assuming all of the private placement warrants are exercised, we expect that the net proceeds from such exercises, in addition to the net proceeds from this offering, will be sufficient to fund the development of cytisinicline into 2026 and through potential FDA approval. 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. Our management will have significant discretion and flexibility in applying the net proceeds from the sale of these securities. See “Risk Factors—Risks Related to this Offering—Management will have broad discretion as to the use of proceeds from this offering and we may use the net proceeds in ways with which you may disagree.”

DILUTION

Our net tangible book value as of September 30, 2023 was approximately \$1.8 million, or approximately \$0.083 per share of common stock based on 21,165,760 shares outstanding. Net tangible book value per share is determined by dividing our net tangible book value, which consists of tangible assets less total liabilities, by the number of shares of common stock outstanding on that date.

After giving effect to the sale and issuance of 13,086,151 shares of common stock in this offering at an offering price of \$4.585 per share, and after deducting placement agent fees and estimated expenses, we would have had a net tangible book value as of September 30, 2023 of approximately \$57.9 million, or \$1.690 per share of common stock. This represents an immediate increase in the net tangible book value of \$1.607 per share to our existing stockholders and an immediate dilution in net tangible book value of \$2.895 per share to the investors in this offering. The following table illustrates this per share dilution:

Public offering price per share of common stock	\$4.585
Net tangible book value per share as of September 30, 2023	\$0.083
Increase in net tangible book value per share attributable to investors purchasing our common stock in this offering	\$1.607
As adjusted net tangible book value per share after giving effect to the offering	\$1.690
Dilution in net tangible book value per share to new investors	\$2.895

The foregoing table is based on 21,165,760 shares of common stock outstanding as of September 30, 2023, and excludes:

- 1,461,982 shares of common stock issuable upon the exercise of options outstanding as of September 30, 2023 with a weighted average exercise price of \$12.15 per share;
- 466,500 shares of common stock issuable upon the exercise of options granted after September 30, 2023, with a weighted average exercise price of \$4.55 per share;
- 507,875 shares of common stock subject to restricted stock units outstanding as of September 30, 2023;
- 721,000 shares of common stock subject to restricted stock units granted after September 30, 2023;
- 4,977,386 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2023, with a weighted average exercise price of \$5.84 per share;
- 142,857 shares of common stock issuable upon the exercise of pre-funded warrants outstanding as of September 30, 2023, with an exercise price of \$0.001 per share;
- 200,723 shares of common stock reserved for future issuance under our equity incentive plans as of September 30, 2023;
- 1,058,288 additional shares of common stock reserved for future issuance under our equity incentive plans after September 30, 2023; and
- up to 13,086,151 shares of our common stock issuable upon the exercise of the private placement warrants to be issued in the private placement transaction, at an exercise price of \$4.906 per share.

DESCRIPTION OF THE SECURITIES WE ARE OFFERING

We are offering 13,086,151 shares of our common stock in this offering.

Common Stock

The material terms and provisions of our common stock are described under the caption “Description of Capital Stock” starting on page 9 of the accompanying prospectus.

Outstanding Warrants and Pre-Funded Warrants

Prior to this offering, as of September 30, 2023, we had outstanding warrants to purchase 4,977,386 shares of common stock at a weighted average exercise price of \$5.84 per share with expiration dates from October 2023 to November 2029. As of September 30, 2023, we also had outstanding pre-funded warrants to purchase 142,857 shares of common stock at an exercise price of \$0.001 per share, which do not expire.

Certain Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval. We may issue these additional shares for a variety of corporate purposes, including future public or private offerings to raise additional capital or to facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved preferred stock may enable our board of directors to issue shares of preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, if we issue additional preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that holders of common stock will receive dividend payments or payments upon liquidation.

Anti-Takeover Provisions

Anti-Takeover Effects of Provisions of Our Charter Documents

Our certificate of incorporation and bylaws include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our company, including the following:

- only the chairman of the board, the chief executive officer, the president or a majority of our board of directors may call special meetings of stockholders, and the business transacted at special meetings of stockholders is limited to the business stated in the notice of such meetings;
- advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders, including certain requirements regarding the form and content of a stockholder’s notice;
- our board of directors may designate the terms of and issue new series of preferred stock;
- unless otherwise required by our bylaws, our certificate of incorporation or by law, our board of directors may amend our bylaws without stockholder approval; and
- only our board of directors may fill vacancies on our board of directors.

Anti-Takeover Effects of Provisions of Delaware Law

We are subject to the provisions of Section 203 of the Delaware General Corporation Law (“Section 203”). Under Section 203, we would generally be prohibited from engaging in any business combination with any

interested stockholder for a period of three years following the time that this stockholder became an interested stockholder unless:

- prior to this time, our board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding shares owned by persons who are directors and also officers, and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to such time, the business combination is approved by our board of directors and authorized at a special or annual stockholders meeting, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Under Section 203, a “business combination” includes:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder, subject to limited exceptions;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by such entity or person.

PRIVATE PLACEMENT TRANSACTION

In a concurrent private placement transaction, we are selling to purchasers of our common stock in this offering warrants to purchase up to 13,086,151 shares of our common stock (or, if the purchaser elects, pre-funded warrants).

The private placement warrants and the shares of our common stock (or pre-funded warrants) issuable upon the exercise of the private placement warrants are not being registered under the Securities Act, are not being offered pursuant to this prospectus supplement and the accompanying prospectus and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder. Accordingly, purchasers may only sell shares of common stock (or pre-funded warrants) issued upon exercise of the private placement warrants pursuant to an effective registration statement under the Securities Act covering the resale of those shares, an exemption under Rule 144 under the Securities Act or another applicable exemption under the Securities Act.

The private placement warrants have an exercise price of \$4.906 per share (or, if the purchaser elects to exercise for a pre-funded warrant, an exercise price of \$4.906, minus \$0.001, the exercise price of each pre-funded warrant). Each private placement warrant will be exercisable immediately upon issuance and will expire on or prior to the earlier of (x) three and one-half years after the date of issuance, and (y) 30 days following the Company's public disclosure of the acceptance of an NDA for cytisinicline by the FDA in a Day 74 Letter or equivalent correspondence. Assuming all of the private placement warrants are exercised, we expect that the net proceeds from the private placement transaction, in addition to the net proceeds from this offering, will be sufficient to fund the development of cytisinicline into 2026 and through potential FDA approval.

Subject to limited exceptions, a holder of private placement warrants will not have the right to exercise any portion of its private placement warrants for common stock if the holder (together with such holder's affiliates, and any persons acting as a group together with such holder or any of such holder's affiliates) would beneficially own a number of shares of common stock in excess of 4.99% (or, at the election of the purchaser prior to issuance, 9.99% or 19.99%) of the shares of our common stock then outstanding after giving effect to such exercise.

The exercise price and the number of shares (or pre-funded warrants) issuable upon exercise of the private placement warrants is subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, stock combinations, reclassifications, reorganizations or similar events affecting our common stock. The private placement warrant holders must pay the exercise price in cash upon exercise of the private placement warrants, unless such private placement warrant holders are utilizing the cashless exercise provision of the private placement warrants.

In addition, in the event we consummate a "fundamental transaction," as described in the private placement warrants and generally including a merger or consolidation with or into another person or other reorganization event in which our common shares are converted or exchanged for securities, cash or other property and we are not the surviving entity and in which our stockholders immediately prior to the merger or consolidation do not own, directly or indirectly, at least 50% of the voting power of the surviving entity immediately after such merger or consolidation (excluding any merger effected solely to change the company's name), or we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the private placement warrants will be entitled to receive upon exercise of such private placement warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised their private placement warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the private placement warrants. Additionally, as more fully described in the private placement warrants, in the event of certain fundamental transactions, the holders of the private placement warrants will be entitled to receive consideration in an amount equal to the Black Scholes value of the private placement warrants on the date of consummation of such transaction.

Upon the holder's exercise of a private placement warrant for shares of common stock, we will issue the shares of common stock issuable upon exercise of the private placement warrant within two trading days following our receipt of a notice of exercise, provided that payment of the exercise price has been made (unless exercised via

the “cashless” exercise provision). Upon the holder’s exercise of the private placement warrant for pre-funded warrants, we will cause the warrant agent to issue the pre-funded warrants issuable upon exercise of the private placement warrant by the date that is the latest of five business days following our receipt of a notice of exercise, (ii) five business days after delivery of the exercise price of the warrants (less the \$0.001 exercise price per pre-funded warrant) and (iii) the standard settlement period on our primary trading market. Prior to the exercise of any private placement warrants to purchase common stock, holders of the private placement warrants will not have any of the rights of holders of the common stock purchasable upon exercise, including the right to vote, except as set forth therein.

Pursuant to the purchase agreement with the purchasers of the private placement warrants, we have agreed to file a registration statement as soon as practicable, but in any event by the earlier of (x) two trading days of the filing of our definitive proxy statement for our 2024 Annual Meeting of Stockholders and (y) 60 days after the date of the purchase agreement (the “Registration Statement”), registering for resale the shares issuable upon exercise of the private placement warrants (or pre-funded warrants) (the “Registrable Securities”). We are obligated to use reasonable best efforts to cause such Registration Statement to become effective within 30 days following the initial filing date, and to maintain the Registration Statement’s effectiveness until the earlier of the date that (i) the Registrable Securities have been sold or (ii) the Registrable Securities may be sold without any restrictions pursuant to Rule 144 promulgated under the Securities Act.

We do not intend to apply for listing of the private placement warrants on any securities exchange or other trading system.

PLAN OF DISTRIBUTION

Lake Street Capital Markets, LLC (“Lake Street”) and JonesTrading Institutional Services LLC (“JonesTrading”) have agreed to act as the joint placement agents in connection with this offering, subject to the terms and conditions of the placement agency agreement dated February 28, 2024. We refer to Lake Street and JonesTrading as the placement agents. The placement agents are not purchasing or selling any of the securities offered by this prospectus supplement, nor are they required to arrange the purchase or sale of any specific number or dollar amount of securities, but have agreed to use their reasonable best efforts to arrange for the sale of all of the securities offered hereby. We entered into a securities purchase agreement, dated February 28, 2024, directly with the investors in connection with this offering, and we will only sell to the investors who have entered into the securities purchase agreement with us.

In addition, certain of our officers and directors are participating in this offering and will purchase an aggregate of 20,000 shares of common stock and private placement warrants to purchase 20,000 shares of common stock on the same terms as the other investors. Pursuant to the placement agency agreement, our officers and directors have agreed to enter into lock-up agreements for a period of 90 days following the closing of the offering, subject to customary exceptions.

In addition, the purchase agreement with the purchasers of securities in this offering and the concurrent private placement prohibits us, subject to certain exemptions, from the date of the purchase agreement until 90 days after the closing of this offering and the concurrent private placement, from (a) issuing, entering into any agreement to issue or announcing the issuance or proposed issuance of any of our common stock or securities convertible into or exercisable or exchangeable for our common stock or (b) filing any registration statement or amendment or supplement with respect thereto, other than the Registration Statement.

We expect to deliver the securities being offered pursuant to this prospectus supplement on or about March 4, 2024, subject to customary closing conditions.

Determination of Offering Price

The offering price of the securities we are offering was negotiated between us and the investors in the offering based on the trading price of our common stock prior to the offering, among other things.

Indemnification

We have agreed to indemnify the placement agents against specified liabilities, including liabilities under the Securities Act, and to contribute to payments the placement agents may be required to make in respect thereof.

Placement Agent Fees, Commissions and Expenses

We have agreed to pay the placement agents a placement agent fee equal to 5.5% of the initial gross proceeds of this offering and a placement agent fee equal to 1.0% of any additional gross proceeds, up to an aggregate amount of \$500,000, received by us through the exercise of the private placement warrants issued in the offering. The following table shows the per share and total cash placement agent’s fees we will pay to the placement agents in connection with the sale of the securities offered pursuant to this prospectus supplement and the accompanying prospectus.

	Per Share	Total
Public offering price	\$4.585	\$60,000,002
Placement agent fees(1)	\$0.252	\$3,297,710
Proceeds to us, before expenses	\$4.333	\$56,702,292

(1) We have also agreed to reimburse the placement agents for certain expenses, as further described below.

In addition, we have agreed to reimburse the placement agents for all travel and other out-of-pocket expenses, including the reasonable fees, costs and disbursements of its legal counsel, in an amount not to exceed an aggregate of \$100,000.

We estimate that the total expenses of the offering payable by us, excluding the placement agent's fees and the reimbursement noted above, will be approximately \$0.5 million.

Regulation M

The placement agents may be deemed to be underwriters within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by the placement agents and any profit realized on the resale of the securities sold by it while acting as principals might be deemed to be underwriting discounts or commissions under the Securities Act. As underwriters, the placement agents would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of securities by the placement agents acting as principals. Under these rules and regulations, the placement agents:

- may not engage in any stabilization activity in connection with our securities; and
- may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

Electronic Distribution

This prospectus supplement and the accompanying prospectus may be made available in electronic format on websites or through other online services maintained by the placement agent or by an affiliate. Other than this prospectus supplement and the accompanying prospectus, the information on the placement agent's website and any information contained in any other website maintained by the placement agent is not part of this prospectus supplement and the accompanying prospectus or the registration statement of which this prospectus supplement and the accompanying prospectus form a part, has not been approved and/or endorsed by us or the placement agent, and should not be relied upon by investors.

Other

The foregoing does not purport to be a complete statement of the terms and conditions of the placement agency agreement and the form of securities purchase agreement. A copy of the form of securities purchase agreement with the purchasers will be included as an exhibit to our Current Report on Form 8-K to be filed with the SEC and incorporated by reference into the registration statement of which this prospectus supplement and the accompanying prospectus form a part. See "Incorporation of Certain Documents by Reference" and "Where You Can Find More Information."

No action has been or will be taken in any jurisdiction (except in the United States) that would permit a public offering of the securities offered by this prospectus supplement and accompanying prospectus, or the possession, circulation or distribution of this prospectus supplement and accompanying prospectus or any other material relating to us or the securities offered hereby in any jurisdiction where action for that purpose is required. Accordingly, the securities offered hereby may not be offered or sold, directly or indirectly, and neither of this prospectus supplement and accompanying prospectus nor any other offering material or advertisements in connection with the securities offered hereby may be distributed or published, in or from any country or jurisdiction except in compliance with any applicable rules and regulations of any such country or jurisdiction. The placement agents may arrange to sell securities offered by this prospectus supplement and accompanying prospectus in certain jurisdictions outside the United States, either directly or through affiliates, where they are permitted to do so.

Certain Relationships

The placement agents and their affiliates may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us in the ordinary course of their business, for which they may receive customary fees and commissions. In addition, from time to time, the placement agents and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future. However, except as disclosed in this prospectus supplement, we have no present arrangements with the placement agents for any further services.

Below is a description of certain recent investment banking and financial advisory services that Lake Street has provided to us in the ordinary course of business, for which Lake Street received customary fees, commissions and other compensation.

On May 25, 2023, Lake Street served as the exclusive placement agent for us in connection with a private placement offering of 3,000,000 shares of common stock, at an offering price of \$5.50 per share of common stock, for aggregate gross proceeds of approximately \$15.5 million. Pursuant to the engagement agreement, Lake Street received a cash commission equal to 6% of the gross proceeds from the sale of the shares of common stock.

On November 15, 2022, Lake Street served as the exclusive placement agent for us in connection with a private placement offering of 4,093,141 units (the “Units”), each consisting of (i) two shares of common stock, par value \$0.001 per share, and (ii) a warrant to purchase one share of common stock, at an offering price of \$4.625 per Unit, for aggregate gross proceeds of approximately \$18.9 million. Pursuant to the engagement agreement, Lake Street received a cash commission equal to 5% of the gross proceeds from the sale of the Units.

LEGAL MATTERS

The validity of the securities offered by this prospectus supplement and accompanying prospectus will be passed upon by Fenwick & West LLP, Seattle, Washington. Certain legal matters in connection with this offering will be passed upon for the placement agents by Sullivan & Worcester 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, 2022 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 have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities covered by this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus, which are part of the registration statement, do not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information with respect to us and the securities covered by this prospectus supplement and the accompanying prospectus, please see the registration statement and the exhibits filed with the registration statement. Whenever we make reference in this prospectus to any of our contracts, agreements or other documents, the references are not necessarily complete and you should refer to the exhibits filed as part of the registration statement for copies of the actual contract, agreement or other document.

We file annual, quarterly and other periodic reports, proxy statements and other information with the Securities and Exchange Commission. You can read our Securities and Exchange Commission filings, including this registration statement, over the Internet at the Securities and Exchange Commission's website at www.sec.gov.

Our Internet address is 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.

INFORMATION INCORPORATED BY REFERENCE

The SEC and applicable law permits us to “incorporate by reference” into this prospectus supplement and the accompanying prospectus information that we have or may in the future file with or furnish to the SEC. This means that we can disclose important information by referring you to those documents. You should read carefully the information incorporated herein by reference because it is an important part of this prospectus supplement and the accompanying prospectus. We hereby incorporate by reference the following documents into this prospectus supplement and the accompanying prospectus:

- our [Annual Report on Form 10-K](#) for the fiscal year ended December 31, 2022, filed with the SEC on March 16, 2023, as amended by [Form 10-K/A](#) on May 16, 2023;
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2023, filed with the SEC on [May 9, 2023](#); June 30, 2023, filed with the SEC on [August 14, 2023](#); and September 30, 2023, filed with the SEC on [November 9, 2023](#);
- our Current Reports on Form 8-K filed with the SEC on [March 6, 2023](#), [March 23, 2023](#), [March 30, 2023](#) (excluding any information furnished in such report under Item 7.01), [May 17, 2023](#), [May 23, 2023](#) (excluding any information furnished in such report under Item 7.01), [May 25, 2023](#) (excluding any information furnished in such report under Item 7.01); [June 9, 2023](#) and [December 11, 2023](#); 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, including Exhibit 4.2 to our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 16, 2023.

Additionally, all documents filed by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement until the termination or completion of this offering shall be deemed to be incorporated by reference into this prospectus supplement and the accompanying prospectus (other than current reports or portions thereof furnished under Item 2.02 or 7.01 of Form 8-K, unless such current reports or portions thereof specifically reference their contents as being filed) from the respective dates of the filing of such documents. Any information that we subsequently file with the SEC that is incorporated by reference as described above will automatically update and supersede any previous information that is part of this prospectus supplement and the accompanying prospectus.

Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for all purposes to the extent that a statement contained in this prospectus or in any other subsequently filed document which is also incorporated or deemed to be incorporated by reference, modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. 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.
22722 29th Drive, SE
Suite 100
Seattle, Washington 98021
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. For other ways to obtain a copy of these filings, please refer to “Where You Can Find More Information.”

PROSPECTUS

\$100,000,000



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

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.

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 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 cytisine 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 cytisine 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. 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, depositories, 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.



13,086,151 Shares of Common Stock

PROSPECTUS SUPPLEMENT

Lake Street

Jones

February 28, 2024
