

PROSPECTUS



## 12,279,423 Shares of Common Stock

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This prospectus relates to the registration for potential offer and sale from time to time of up to 12,279,423 shares of our common stock, par value \$0.001 per share (the “Shares”), by the selling stockholders identified in the “Selling Stockholders” section of this prospectus. The Shares registered hereunder consist of (i) 8,186,282 outstanding shares held by certain of the selling stockholders and (ii) 4,093,141 shares issuable to certain of the selling stockholders upon exercise of certain outstanding common stock purchase warrants held by such selling stockholders (the “Warrants”). For more information regarding the Shares, see “Selling Stockholders” herein.

The selling stockholders may sell the Shares directly to purchasers or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions. The selling stockholders may sell the Shares at any time at market prices prevailing at the time of sale or at privately negotiated prices. For more information regarding the selling stockholders and the sale of the Shares, see “Selling Stockholders” and “Plan of Distribution” herein.

We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of the Shares by the selling stockholders. This prospectus also relates to the issuance by us of the shares of common stock issuable upon the exercise of Warrants. We will receive proceeds from any exercise of the Warrants for cash. We will pay the expenses incurred in registering the Shares, including legal and accounting fees.

Our common stock is traded on The Nasdaq Capital Market under the symbol “ACHV.” On January 9, 2023 the last reported sales price for our common stock was \$2.80 per share. None of the other securities we may offer are currently traded on any securities exchange.

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**Investing in our securities involves a high degree of risk. Before making any investment in these securities, you should consider carefully the risks and uncertainties in the section entitled “[Risk Factors](#)” beginning on page 5 of this prospectus.**

**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 January 9, 2023

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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 (the “SEC”). Under this registration process, the selling stockholders may, from time to time, sell or otherwise distribute the securities offered by them as described in the section titled “Plan of Distribution” in this prospectus. We will not receive any proceeds from the sale by such selling stockholders of the securities offered by them described in this prospectus. This prospectus also relates to the issuance by us of the shares of common stock issuable upon the exercise of Warrants. We will receive proceeds from any exercise of the Warrants for cash.

Neither we, the selling stockholders, 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, the selling stockholders 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. We urge you to read carefully this prospectus (as supplemented and amended), together with the information incorporated herein by reference as described under the heading “Incorporation of Information by Reference” before deciding whether to invest in any of the shares of common stock being offered.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled “Where You Can Find More Information.”

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, 2021, and our other filings with the SEC listed below under the heading "Incorporation of Information by Reference." This summary may not contain all the information that you should consider before investing in securities. You should read the entire prospectus and the information incorporated by reference in this prospectus carefully, including "Risk Factors" and the financial data and related notes and other information incorporated by reference, before making an investment decision. See "Cautionary Note Regarding Forward-Looking Statements."*

### **Our Company**

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

### **Corporate Information**

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

### **Recent Developments**

In November 2022, we entered into subscription agreements with certain accredited investors, pursuant to which we agreed to sell and issue, in a private placement transaction, 4,093,141 units at a purchase price of \$4.625 per unit, with each unit consisting of two shares of common stock and a common stock purchase warrant to purchase one share of common stock (the "Warrants"). The Warrants are exercisable at a price per share of common stock of \$4.50, subject to adjustment. The Warrants are exercisable beginning on the six month anniversary of the initial closing date of the private placement offering, or May 18, 2023 (the "Initial Exercise Date"), and will expire on the seven year anniversary of the initial closing date of the private placement offering, or November 18, 2029. The Warrants cannot be exercised by a Warrant holder if, after giving effect thereto, such Warrant holder would beneficially own more than 19.99% of our outstanding common stock. Additionally, subject to certain exceptions, if, after the Initial Exercise Date, (i) the volume weighted average price of our common stock for each of 30 consecutive trading days (the "Measurement Period"), which Measurement Period commenced on November 18, 2022, exceeds 300% of the exercise price (subject to adjustments for stock splits, recapitalizations, stock dividends and similar transactions), (ii) the average daily trading volume for such Measurement Period exceeds \$500,000 per trading day and (iii) certain other equity conditions are met, and subject to a beneficial ownership limitation, then we may call for cancellation of all or any portion of the Warrants then outstanding. We received approximately \$17.9 million in net proceeds from the private placement after deducting placement agent expenses and commissions and offering expenses payable by the Company.

In connection with our entry in the subscription agreements, we granted to the participating accredited investors certain registration rights with respect to the shares of common stock issued in the offering and the shares of

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common stock underlying the Warrants pursuant to a registration rights agreement dated November 18, 2022. We are registering the securities offered hereby pursuant to such registration rights.

This prospectus is part of a registration statement that we have filed with the SEC to register 12,279,423 shares of our common stock acquired in the private placements (the "Shares"). The shares of common stock registered hereunder consist of (i) outstanding shares of common stock held by the selling stockholders that were purchased in the private placement and (ii) shares issuable upon exercise of the Warrants issued in the private placements. The Shares are being registered for resale or other disposition by the selling stockholders. We will not receive any proceeds from the sale or other disposition of the Shares registered hereunder, or interests therein. This prospectus also relates to the issuance by us of the shares of common stock issuable upon the exercise of Warrants. We will receive proceeds from any exercise of the Warrants for cash.

**THE OFFERING**

Common stock offered by selling stockholders	12,279,423 shares, which includes (i) 8,186,282 shares of common stock held by the selling stockholders and (ii) 4,093,141 shares of common stock issuable upon the exercise of the Warrants held by the selling stockholders identified in the “Selling Stockholders” section of this prospectus.
Use of proceeds	We will not receive any proceeds from the sale of the shares of common stock covered by this prospectus. This prospectus also relates to the issuance by us of the shares of common stock issuable upon the exercise of Warrants. We will receive proceeds from any exercise of the Warrants for cash.
Risk factors	See “Risk Factors included herein, for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Nasdaq Capital Market Symbol	ACHV.

The selling stockholders named in this prospectus may offer and sell up to an aggregate of 12,279,423 shares of our common stock, which includes (i) 8,186,282 shares of common stock held by the selling stockholders and (ii) 4,093,141 shares of common stock issuable upon the exercise of the Warrants held by the selling stockholders. Throughout this prospectus, when we refer to the shares of our common stock being registered on behalf of the selling stockholders, we are referring to all 12,279,423 shares of common stock, including 4,093,141 shares of common stock that become issuable upon the exercise of the Warrants held by the selling stockholders as of May 18, 2023.

We agreed to file this prospectus pursuant to a registration rights agreement with the selling stockholders, dated November 18, 2022 (the “Registration Rights Agreement”). Additional information with respect to the Registration Rights Agreement is contained in this prospectus under the heading “Selling Stockholders” and in our Current Report on Form 8-K filed with the Securities and Exchange Commission on November 18, 2022.

When we refer to the selling stockholders, we are referring to the selling stockholders identified in the “Selling Stockholders” section of this prospectus and, as applicable, any donees, pledgees, transferees or other successors-in-interest selling shares received after the date of this prospectus from a selling stockholder as a gift, pledge, or other non-sale related transfer that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part.

**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, 2022, 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:

- progress and preliminary and future results of any clinical trials;
- anticipated regulatory filings, requirements and future clinical trials;
- our expectations regarding the impact of the macroeconomic and geopolitical environment, including inflation, pandemics and geopolitical conflict, and their potentially material adverse impact on our business and the execution of our preclinical studies and 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; 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 Part II, Item 1A. “Risk Factors” in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, filed with the SEC on November 14, 2022.

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 (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, 2021, filed with the SEC on March 10, 2022;
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2022, filed with the SEC on [May 12, 2022](#); June 30, 2022, filed with the SEC on [August 11, 2022](#); and September 30, 2022, filed with the SEC on [November 14, 2022](#);
- our Current Reports on Form 8-K filed with the SEC on [March 15, 2022](#), [April 27, 2022](#), [June 1, 2022](#), [November 18, 2022](#) and [November 25, 2022](#) (excluding any information furnished in such report under Item 2.02);
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on September 27, 1995 (paper filing) under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description; and
- filings we make with the SEC pursuant to the Exchange Act after the date of the initial registration statement, of which this prospectus is a part, and prior to the effectiveness of the registration statement.

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

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

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

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

### **USE OF PROCEEDS**

The proceeds from the sale of the Shares offered pursuant to this prospectus are solely for the accounts of the selling stockholders. Accordingly, we will not receive any of the proceeds from the sale of the Shares offered by this prospectus. See “Selling Stockholders” and “Plan of Distribution” below.

This prospectus also relates to the issuance by us of the shares of common stock issuable upon the exercise of Warrants. We will receive proceeds from any exercise of the Warrants for cash.

The selling stockholders will pay any underwriting discounts and commissions and expenses incurred by the selling stockholders for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholders in disposing of the securities. We will bear the costs, fees and expenses incurred in effecting the registration of the securities covered by this prospectus, including all registration and filing fees, Nasdaq listing fees and fees and expenses of our counsel and our independent registered public accounting firm.

## PLAN OF DISTRIBUTION

We are registering the Shares to permit the resale of these Shares by the holders thereof from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the Shares offered hereby. We will bear all fees and expenses incident to our obligation to register these Shares.

The selling stockholders may sell all or a portion of the Shares held by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the Shares are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The Shares may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, pursuant to one or more of the following methods:

- on any national securities exchange or quotation service on which the shares may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales made after the date the Registration Statement is declared effective by the SEC;
- broker-dealers may agree with a selling stockholder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell Shares under Rule 144 promulgated under the Securities Act, if available, rather than under this prospectus. In addition, the selling stockholders may transfer the Shares by other means not described in this prospectus. If the selling stockholders effect such transactions by selling Shares to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the Shares for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the Shares or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the Shares in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and deliver Shares covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge Shares to broker-dealers that in turn may sell such Shares.

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The selling stockholders may pledge or grant a security interest in some or all of the Shares owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the Shares from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the Shares in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

To the extent required by the Securities Act and the rules and regulations thereunder, the selling stockholders and any broker-dealer participating in the distribution of Shares may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the Shares, a prospectus supplement, if required, will be distributed, which will set forth the aggregate amount of Shares being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or re-allowed or paid to broker-dealers.

Under the securities laws of some states, Shares may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states Shares offered hereby may not be sold unless such Shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the Shares registered pursuant to the registration statement of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act (“Regulation M”), which may limit the timing of purchases and sales of any Shares by the selling stockholders and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the Shares to engage in market-making activities with respect to the Shares. All of the foregoing may affect the marketability of the Shares and the ability of any person or entity to engage in market-making activities with respect to the Shares.

Once sold under the registration statement of which this prospectus forms a part, the Shares offered hereby will be freely tradable in the hands of persons other than our affiliates.

## SELLING STOCKHOLDERS

The Shares being offered by the selling stockholders under this prospectus consist of (i) outstanding shares held by certain of the selling stockholders and (ii) shares issuable to certain of the selling stockholders upon exercise of the Warrants. Pursuant to the Registration Rights Agreement, we have agreed to file a registration statement with the SEC covering the resale of shares of our capital stock, and this registration statement has been filed pursuant to the Registration Rights Agreement.

The table below lists the selling stockholders and other information regarding their beneficial ownership (as determined under Section 13(d) of the Exchange Act and the rules and regulations thereunder) of our common stock as of December 15, 2022. Under Section 13(d) of the Exchange Act, beneficial ownership generally includes voting or investment power with respect to securities, including any securities that grant the holder the right to acquire shares of common stock within 60 days of the date of determination. These shares are deemed to be outstanding for the purpose of computing the percentage ownership of the person holding those securities, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. The percentage ownership data is based on 17,897,029 shares of our common stock issued and outstanding as of December 15, 2022 (as reflected in the records of our stock transfer agent). The Warrants cannot be exercised by a Warrant holder if, after giving effect thereto, such Warrant holder would beneficially own more than 19.99% of our outstanding common stock. The table below gives effect to this 19.99% beneficial ownership limitation.

We have prepared the table below based on information furnished to us by or on behalf of the selling stockholders. The second column of the table lists the number of shares of common stock beneficially owned by the selling stockholders as of December 15, 2022. The third column of the table lists the Shares being offered under this prospectus by the selling stockholders or by those persons or entities to whom they transfer, donate, devise, pledge or distribute their Shares or by other successors in interest.

Because, among other things, the exercise of the Warrants is at the option of the holders, the number of shares of common stock that will actually be issued to the selling stockholders pursuant to the Warrants may be more or less than the number of Shares being offered by this prospectus. In addition, the Shares may be sold pursuant to this prospectus or in privately negotiated transactions. See “Plan of Distribution.” Because the selling stockholders may sell all, some or none of their Shares in this offering and because there are currently no agreements, arrangements or undertakings with respect to the sale of any of the Shares, we cannot estimate the number of Shares the selling stockholders will sell under this prospectus. The fourth column of the table assumes the sale of all of the Shares offered by the selling stockholders pursuant to this prospectus.

Except for the ownership of the Shares and Warrants purchased from us in the November 2022 private placement and the entry into the registration right agreement to which this prospectus relates, no selling stockholders have had any material relationship with us within the past three years.

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Unless otherwise indicated in the footnotes below, we believe that the selling stockholders have sole voting and investment power with respect to all shares of our common stock beneficially owned by them. Since the date on which they provided us with the information below, the selling stockholders may have sold, transferred or otherwise disposed of some or all of their shares in transactions exempt from the registration requirements of the Securities Act.

Name of Selling Stockholder	Shares of Common Stock Owned Prior to Offering		Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus	Shares of Common Stock Owned After Offering	
	Number	Percentage (%)		Number	Percentage (%)
Bencich, John <sup>(1)</sup>	47,920	*	33,000	14,920	*
Brio Capital Master Fund Ltd. <sup>(2)</sup>	699,044	3.87	486,510	212,534	1.18
Catalysis Partners, LLC <sup>(3)</sup>	648,648	3.58	648,648	0	*
Entities affiliated with Clearline Capital LP <sup>(4)</sup>	768,742	4.27	648,648	120,094	*
Contrarian Achieve SPV LP <sup>(5)</sup>	1,978,377	10.66	1,978,377	0	*
Dialectic Life Sciences SPV LLC <sup>(6)</sup>	5,241,000	19.99	5,241,000	0	*
Globis Capital Partner, L.P. <sup>(7)</sup>	543,424	3.02	324,324	219,100	1.22
Lyda Hunt—Herbert Trusts—Barbara Ann Hunt <sup>(8)</sup>	324,324	1.80	324,324	0	*
Lyda Hunt—Herbert Trusts—Bruce William Hunt <sup>(9)</sup>	324,324	1.80	324,324	0	*
Lyda Hunt—Herbert Trusts—David Shelton Hunt <sup>(10)</sup>	324,324	1.80	324,324	0	*
Lyda Hunt—Herbert Trusts—Douglas Herbert Hunt <sup>(11)</sup>	162,162	*	162,162	0	*
Kingdom Investments, Limited <sup>(12)</sup>	324,324	1.80	324,324	0	*
MACABA Holdings, LLC <sup>(13)</sup>	162,162	*	162,162	0	*
Redcap Investments, LP <sup>(14)</sup>	324,324	1.80	324,324	0	*
Long Focus Capital Master LTD <sup>(15)</sup>	464,544	2.58	324,324	140,220	*
Walleye Opportunities Master Fund Ltd <sup>(16)</sup>	658,148	3.63	648,648	9,500	*

\* Represents beneficial ownership of less than one percent of the outstanding shares of our common stock.

- (1) The shares of common stock beneficially owned prior to this offering include (i) 36,920 shares of common stock and (ii) 11,000 shares of common stock issuable upon exercise of Warrants held by John Bencich.
- (2) The shares of common stock beneficially owned prior to this offering include (i) 535,938 shares of common stock and (ii) 163,106 shares of common stock issuable upon exercise of Warrants held by Brio Capital Master Fund Ltd.
- (3) The shares of common stock beneficially owned prior to this offering include (i) 432,432 shares of common stock and (ii) 216,216 shares of common stock issuable upon exercise of Warrants held by Catalysis Partners, LLC.
- (4) The shares of common stock beneficially owned prior to this offering include (i) 431,691 shares of common stock held by Clearline Capital Partners LP (“CCP”), (ii) 120,835 shares of common stock held by Clearline Capital Partners Master Fund LP (“CCPMF”), (iii) 168,937 shares of common stock issuable upon exercise of Warrants held by CCP and (iv) 47,279 shares of common stock issuable upon exercise of Warrants held by CCPMF. Marc Majzner is a managing member of Clearline Capital LP and shares voting and dispositive power over the shares held by each of CCP and CCPMF.

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- (5) The shares of common stock beneficially owned prior to this offering include (i) 1,318,918 shares of common stock and (ii) 659,459 shares of common stock issuable upon exercise of Warrants held by Contrarian Achieve SPV LLC.
- (6) The shares of common stock beneficially owned prior to this offering include (i) 3,494,000 shares of common stock and (ii) 1,747,000 shares of common stock issuable upon exercise of Warrants held by Dialectic Life Sciences SPV LLC. The number in the column “Percentage (%)—Shares of Common Stock Owned Prior to the Offering” gives effect to the provision of the Warrants limiting the ability of a Warrant holder to exercise its Warrants if, after giving effect to such exercise, such Warrant holder would beneficially own more than 19.99% of our outstanding common stock.
- (7) The shares of common stock beneficially owned prior to this offering include (i) 435,316 shares of common stock and (ii) 108,108 shares of common stock issuable upon exercise of Warrants held by Globis Capital Partner, L.P.
- (8) The shares of common stock beneficially owned prior to this offering include (i) 216,216 shares of common stock and (ii) 108,108 shares of common stock issuable upon exercise of Warrants held by Lyda Hunt—Herbert Trusts—Barbara Ann Hunt. James M. Mason, in his capacity as Trustee, may be deemed to have investment discretion and voting power over the shares held by Lyda Hunt—Herbert Trusts—Barbara Ann Hunt.
- (9) The shares of common stock beneficially owned prior to this offering include (i) 216,216 shares of common stock and (ii) 108,108 shares of common stock issuable upon exercise of Warrants held by Lyda Hunt—Herbert Trusts—Bruce William Hunt. James M. Mason, in his capacity as Trustee, may be deemed to have investment discretion and voting power over the shares held by Lyda Hunt—Herbert Trusts—Bruce William Hunt.
- (10) The shares of common stock beneficially owned prior to this offering include (i) 216,216 shares of common stock and (ii) 108,108 shares of common stock issuable upon exercise of Warrants held by Lyda Hunt—Herbert Trusts—David Shelton Hunt. James M. Mason, in his capacity as Trustee, may be deemed to have investment discretion and voting power over the shares held by Lyda Hunt—Herbert Trusts—David Shelton Hunt.
- (11) The shares of common stock beneficially owned prior to this offering include (i) 108,108 shares of common stock and (ii) 54,054 shares of common stock issuable upon exercise of Warrants held by Lyda Hunt—Herbert Trusts—Douglas Herbert Hunt. James M. Mason, in his capacity as Trustee, may be deemed to have investment discretion and voting power over the shares held by Lyda Hunt—Herbert Trusts—Douglas Herbert Hunt.
- (12) The shares of common stock beneficially owned prior to this offering include (i) 216,216 shares of common stock and (ii) 108,108 shares of common stock issuable upon exercise of Warrants held by Kingdom Investments, Limited.
- (13) The shares of common stock beneficially owned prior to this offering include (i) 108,108 shares of common stock and (ii) 54,054 shares of common stock issuable upon exercise of Warrants held by MACABA Holdings, LLC.
- (14) The shares of common stock beneficially owned prior to this offering include (i) 216,216 shares of common stock and (ii) 108,108 shares of common stock issuable upon exercise of Warrants held by Redcap Investments, LP.
- (15) The shares of common stock beneficially owned prior to this offering include (i) 356,346 shares of common stock and (ii) 108,108 shares of common stock issuable upon exercise of Warrants held by Long Focus Capital Master LTD.
- (16) The shares of common stock beneficially owned prior to this offering include (i) 432,432 shares of common stock and (ii) 225,716 shares of common stock issuable upon exercise of Warrants held by Walleys Opportunities Master Fund Ltd.

We have entered into the Registration Rights Agreement with the selling stockholders party thereto pursuant to which, among other things, we have provided them with certain registration rights and agreed to pay certain expenses and indemnify them from certain liabilities in connection with this offering. For more information, see our current report on Form 8-K filed with the SEC on November 18, 2022.



**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 Form10-K for the year ended December 31, 2021 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.