

PROSPECTUS SUPPLEMENT
(To Prospectus Dated October 29, 2025)



1,150,000 Shares of Common Stock

Pre-Funded Warrants to Purchase 50,000 Shares of Common Stock

We are offering 1,150,000 shares of our common stock, par value \$0.0001 per share, or in lieu of common stock to certain investors that so choose, pre-funded warrants to purchase shares of our common stock. The purchase price of each pre-funded warrant equals the price per share at which shares of our common stock are being sold to the public in this offering, minus \$0.01, and the exercise price of each pre-funded warrant is \$0.01 per share. We are also offering shares of our common stock that are issuable from time to time upon the exercise of the pre-funded warrants.

There is no established public trading market for the pre-funded warrants, and we do not expect a market to develop. We do not intend to apply for listing of the pre-funded warrants on the Nasdaq Capital Market or other securities exchange or nationally recognized trading system. Without an active trading market, the liquidity of the pre-funded warrants will be limited.

Our common stock is listed on the Nasdaq Capital Market under the symbol "SPRB." The last reported sale price of our common stock on the Nasdaq Capital Market on April 20, 2026 was \$69.89 per share.

Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page S-7 of this prospectus supplement, page 6 of the accompanying prospectus and under similar headings in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus.

We are a "smaller reporting company" under applicable Securities and Exchange Commission rules and as such, have elected to comply with reduced public company reporting requirements. See "Prospectus Supplement Summary — Implications of Being a Smaller Reporting Company."

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

	Per Share	Per Pre-Funded Warrant	Total
Public Offering Price	\$ 50.00	\$ 49.99	\$ 59,999,500
Underwriting Discounts and Commissions ⁽¹⁾	\$ 3.00	\$ 3.00	\$ 3,600,000
Proceeds to Spruce Biosciences, Inc. before expenses	\$ 47.00	\$ 46.99	\$ 56,399,500

(1) We have agreed to reimburse the underwriters for certain expenses. See "Underwriting" beginning on page S-21 of this prospectus supplement for additional information regarding underwriter compensation.

Delivery of shares of common stock and pre-funded warrants is expected to be made on or about April 22, 2026.

We have granted the underwriters an option for a period of 30 days to purchase up to an additional 180,000 shares of our common stock at the public offering price, less the underwriting discounts and commissions. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$4,140,000, and the total proceeds to us, before expenses, will be \$64,859,500.

Joint Bookrunning Managers

Leerink Partners

Guggenheim Securities

Oppenheimer & Co.

Co-Managers

Jones

Craig-Hallum

Prospectus Supplement dated April 20, 2026

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is part of a “shelf” registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”) and is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering of our common stock and pre-funded warrants and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference herein and therein. The second part, the accompanying prospectus, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement and the information contained in the accompanying prospectus or any document incorporated by reference into this prospectus supplement or the accompanying prospectus filed prior to the date of this prospectus supplement, you should rely on the information 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 into this prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

We have not, and the underwriters have not, authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take, and the underwriters take, no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus supplement and the accompanying prospectus do not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus supplement and the accompanying prospectus in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation of an offer in such jurisdiction. The information contained in this prospectus supplement or the accompanying prospectus, or incorporated by reference herein or therein is accurate only as of the respective dates thereof, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or of any sale of our securities. It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you in the sections entitled “Where You Can Find More Information” and “Incorporation of Certain Information by Reference” in this prospectus supplement and in the accompanying prospectus.

We are offering to sell, and seeking offers to buy, shares of our common stock and pre-funded warrants only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of shares of our common stock and pre-funded warrants in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of shares of our common stock and pre-funded warrants and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do 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 and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless otherwise stated, all references in this prospectus supplement and the accompanying prospectus to “we,” “us,” “our,” “Spruce,” “Company” and similar designations refer, collectively, to Spruce Biosciences, Inc., a Delaware corporation, and where specified, our subsidiaries.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein contain forward-looking statements. These are based on our management's current beliefs, expectations and assumptions about future events, conditions and results and on information currently available to us. Discussion containing these forward-looking statements may be found, among other places, in the sections titled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in the documents incorporated herein and therein.

Any statements in this prospectus supplement, the accompanying prospectus or incorporated herein or therein about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These forward-looking statements include statements regarding:

- the anticipated timing, costs, and conduct of our product candidates' development activities and ongoing and planned clinical trials, and plans and expectations for future operations and anticipated product development efforts;
- our need for additional funding and related risks for our business, product development programs and future commercialization activities;
- the timing and success of clinical trials we conduct;
- the ability to obtain and maintain regulatory approval of our product candidates;
- the estimated size of the addressable patient population for our product candidates;
- the ability to commercialize our product candidates, if approved;
- our ability to compete in the marketplace;
- our ability to obtain and maintain intellectual property protection for our product candidates;
- our ability to manage our growth;
- our anticipated use of our existing resources;
- our intended use of net proceeds from this offering; and
- other risks and uncertainties, including those listed under the caption "Risk Factors" in our most recent Annual Report on Form 10-K and other subsequent filings we make with the SEC, including our Quarterly Reports on Form 10-Q.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein.

In some cases, you can identify forward-looking statements by the words "may," "might," "can," "will," "to be," "could," "would," "should," "expect," "intend," "plan," "objective," "anticipate," "believe," "estimate," "predict," "project," "potential," "likely," "continue" and "ongoing," or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. In addition, this prospectus supplement and the documents incorporated by reference herein also refer to estimates and other statistical data made by independent parties and by us relating to potential market size related to our product candidates. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates.

We have included important factors in the cautionary statements included in this prospectus supplement, particularly in the “Risk Factors” section, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties.

You should read this prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein completely and with the understanding that our actual future results may be materially different from what we expect. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus supplement, even if new information becomes available in the future.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based on information available to us as of the date of this prospectus supplement, and while we believe such information provides a reasonable basis for these statements, such information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain, and you are cautioned not to unduly rely on these statements.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere in this prospectus supplement and the accompanying prospectus and in the documents we incorporate by reference. This summary does not contain all of the information you should consider before investing in our securities. You should read this entire prospectus supplement and the accompanying prospectus carefully, especially the risks of investing in our securities discussed under “Risk Factors” beginning on page S-7 of this prospectus supplement and under a similar heading in our most recent Annual Report on Form 10-K, which is incorporated by reference into this prospectus supplement, along with our consolidated financial statements and notes to those consolidated financial statements and the other information incorporated by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision. Please also read carefully the section titled “Special Note Regarding Forward-Looking Statements.”

Company Overview

We are a biopharmaceutical company focused on developing and commercializing novel therapies for neurological disorders with significant unmet medical need. We have a diverse portfolio of product candidates aimed at addressing diseases with high unmet medical need and clear biology for treatment, for which there are either no approved therapies treating the underlying disease or suboptimal treatment options. We were founded in April 2016 and are led by a management team experienced in the development and commercialization of groundbreaking therapeutics.

Tralesinidase alfa enzyme replacement therapy (“TA-ERT”) is our product candidate for the treatment of Sanfilippo Syndrome Type B, or Mucopolysaccharidosis Type IIIB (“MPS IIIB”), an ultra-rare, serious, and fatal genetic disease characterized by deficiency in N-Acetyl-Alpha-Glycosaminidase, an enzyme required for the degradation of heparan sulfate in lysosomes, for which there are currently no therapies approved by the U.S. Food and Drug Administration. Based on the range of epidemiological estimates and published literature, we estimate there are approximately between 400 individuals and 3,000 individuals currently living with MPS IIIB in the United States, with approximately between 20 and 150 incidence cases annually in the United States, representing what we believe to be a significant market opportunity.

Corporate Information

We were incorporated in Delaware in April 2016. Our principal executive offices are located at 611 Gateway Boulevard, Suite 740, South San Francisco, CA 94080, and our telephone number is (415) 343-5986. Our common stock is listed on the Nasdaq Capital Market under the symbol “SPRB.”

Our internet website address is www.sprucebiosciences.com. The information contained on our website is not incorporated by reference into this prospectus supplement, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus supplement or in deciding whether to purchase our securities.

“Spruce”, the Spruce logo and our other trademarks or service marks appearing in this prospectus supplement or incorporated herein by reference are our property. This prospectus supplement and the information incorporated herein by reference may contain additional trade names, trademarks and service marks of others, which are the property of their respective owners.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements and reduced disclosure obligations regarding executive compensation. We will remain a smaller reporting company until the last day of any fiscal year for so long as either (1) the market value of our shares of common stock held by non-affiliates does not equal or exceed \$250.0 million as of June 30th of such fiscal year, or (2) our annual revenues did not equal or exceed \$100.0 million during the most recently completed fiscal year for which audited financial statements are available and the market value of our shares of common stock held by non-affiliates did not equal or exceed \$700.0 million as of June 30th of such fiscal year. To the extent we take advantage of any reduced disclosure obligations, it may make the comparison of our financial statements with other public companies difficult or impossible.

THE OFFERING

Common stock offered by Spruce	1,150,000 shares
Pre-funded warrants offered by Spruce	We are also offering, in lieu of common stock to certain investors that so choose, pre-funded warrants to purchase 50,000 shares of our common stock. The purchase price of each pre-funded warrant equals the price per share at which the shares of our common stock are being sold to the public in this offering, minus \$0.01, which is the exercise price of each pre-funded warrant per share. The pre-funded warrants do not expire and each pre-funded warrant will be exercisable at any time after the date of issuance of such pre-funded warrant, subject to an ownership limitation. See “Description of Securities We Are Offering—Pre-Funded Warrants” on page S-14 of this prospectus supplement. This prospectus supplement also relates to the offering of the shares of our common stock issuable upon exercise of the pre-funded warrants.
Common stock to be outstanding after this offering	2,522,043 shares of common stock (or 2,702,043 shares of common stock if the underwriters exercise in full their option to purchase additional shares) in each case assuming no exercise of any pre-funded warrants issued in this offering.
Option to purchase additional shares	We have granted the underwriters an option to purchase up to an additional 180,000 shares of our common stock from us. The underwriters can exercise this option, in whole or in part, at any time within 30 days from the date of this prospectus supplement.
Use of proceeds	We estimate that the net proceeds to us from this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately \$55.9 million, or approximately \$64.4 million if the underwriters exercise their option to purchase additional shares from us in full. We will receive only nominal additional proceeds from any exercise of pre-funded warrants. We intend to use the net proceeds from this offering to advance the Company’s pre-commercial and launch activities, for planned clinical trials, and for working capital, capital expenditures and other general corporate purposes. See “Use of Proceeds” on page S-10 of this prospectus supplement.
Risk factors	Investing in our securities involves a high degree of risk. You should read the “Risk Factors” section of this prospectus supplement beginning on page S-7, page 6 of the accompanying prospectus, and in the documents incorporated by reference herein or therein, for a discussion of factors to consider carefully before deciding to invest in our securities.
Nasdaq Capital Market symbol	“SPRB”

The number of shares of our common stock to be outstanding after this offering is based on 1,372,043 shares of common stock outstanding as of December 31, 2025 and excludes:

- 42,421 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2025, at a weighted-average exercise price of \$244.86 per share;
- 47,200 shares of common stock issuable upon the vesting or other settlement of restricted stock units outstanding as of December 31, 2025;
- 62,350 shares of common stock issuable upon the vesting or other settlement of restricted stock units that we granted after December 31, 2025 and through the date of this prospectus supplement;
- 169,147 shares of common stock issuable upon the exercise of common warrants outstanding as of December 31, 2025 at an exercise price of \$297.02 per share;
- 58,608 shares of common stock issuable upon the exercise of common stock warrants that we issued after December 31, 2025 and through the date of this prospectus supplement at an exercise price of \$50.00 per share;
- 19,715 shares of common stock reserved for future issuance under our 2020 Equity Incentive Plan as of December 31, 2025, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
- 12,531 shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan as of December 31, 2025, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

In addition, as of the date of this prospectus supplement, under our “at the market offering” program (“ATM Program”) with Jefferies LLC, pursuant to an Open Market Sale AgreementSM dated March 9, 2026, we may issue and sell shares of common stock having an aggregate offering price of up to \$75.0 million from time to time, in such amounts as we may determine, subject to certain limitations contained therein and under applicable securities laws.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise or settlement, as applicable, of the outstanding options, restricted stock units and warrants described above, no exercise by the underwriters of their option to purchase additional shares of our common stock and no exercise of pre-funded warrants offered and sold in this offering.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before you decide to invest in our securities, you should carefully consider the risks and uncertainties described below together with all other information contained in this prospectus supplement, the accompanying prospectus and in our filings with the SEC that we have incorporated by reference in this prospectus supplement and the accompanying prospectus. The risk factors included in this prospectus supplement update the corresponding risk factors incorporated by reference in this prospectus supplement from our most recent Annual Report on Form 10-K. If any of the following risks or any of the risks incorporated herein by reference actually occur, our business, financial condition, results of operations and prospects could suffer materially. In such event, the trading price of our common stock could decline and you might lose all or part of your investment.

Risks Related to This Offering

Even with net proceeds from this offering, we will need substantial additional financing to fund our operations and develop our product candidates, and we may not be able to obtain such financing on acceptable terms, or at all, which could force us to delay, reduce or eliminate our product development programs or commercialization efforts.

Our operations have consumed substantial amounts of cash since our inception, and we expect to continue to generate operating losses and have significant cash outflows from operating activities for at least the next few years. Until we can generate sufficient revenue, if ever, to fund our operations, we will need to finance our future cash needs through public or private equity offerings, license agreements, debt financings or restructurings, collaborations, strategic alliances and marketing or distribution arrangements, and there can be no assurance that such arrangements will be available to us on a timely basis, or, if available, will be available on terms acceptable to us.

We expect to continue to spend substantial amounts to continue the clinical development of, and seek regulatory approval for TA-ERT and our other current and future product candidates. Changing circumstances may cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. Even with net proceeds from this offering, we will require additional capital for the further development and commercialization of TA-ERT and our other current and future product candidates and may need to raise additional funds sooner if we choose to expand more rapidly than we presently anticipate. Additional funding may not be available on acceptable terms, or at all.

Our management might apply the net proceeds from this offering in ways with which you do not agree and in ways that may impair the value of your investment.

We currently intend to use the net proceeds from this offering to advance the Company's pre-commercial and launch activities, for planned clinical trials, and for working capital, capital expenditures and other general corporate purposes. We may also use a portion of the net proceeds to invest in or acquire additional businesses or technologies that we believe are complementary to our own, although we have no current plans, commitments or agreements with respect to any future acquisitions as of the date of this prospectus supplement. Pending these uses, we expect to invest the net proceeds in short-term, interest-bearing obligations, certificates of deposit or direct or guaranteed obligations of the United States or foreign government agencies. Our management has broad discretion as to the use of these proceeds and you will be relying on the judgment of our management regarding the application of these proceeds. We might apply these net proceeds in ways with which you do not agree, or in ways that do not yield a favorable return. If our management applies these net proceeds in a manner that does not yield a significant return, if any, on our investment of these net proceeds, it could compromise our ability to pursue our growth strategy and adversely affect the market price of our common stock.

The pre-funded warrants are not listed on any exchange, and we do not intend to list the pre-funded warrants on any exchange. There is no public market for the pre-funded warrants being offered in this offering.

There is no established public trading market for the pre-funded warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list these pre-funded warrants on any securities exchange or nationally recognized trading system, including the Nasdaq Capital Market. Without an active market, the liquidity of these pre-funded warrants will be limited. See "Description of Securities We Are Offering—Pre-Funded Warrants."

We will not receive any meaningful amount of additional funds upon the exercise of the pre-funded warrants.

Each pre-funded warrant has an exercise price of \$0.01 per share. Each pre-funded warrant will be exercisable until it is fully exercised by means of payment of this nominal purchase price. Accordingly, we will not receive any meaningful additional funds upon the exercise of the pre-funded warrants.

Holders of pre-funded warrants purchased in this offering will not have the same rights as common stockholders until such holders exercise their pre-funded warrants and acquire our common stock.

Until holders of the pre-funded warrants acquire shares of our common stock upon exercise of such pre-funded warrants, the holders will have no rights with respect to the shares of our common stock underlying such pre-funded warrants, such as voting rights. Upon exercise of the pre-funded warrants, the holders will be entitled to acquire shares of common stock and exercise the same rights as a common stockholder on matters for which the record date occurs on or after the holder thereof has acquired the shares of common stock.

Significant holders or beneficial owners of our common stock may not be permitted to exercise pre-funded warrants that they hold.

Holders of the pre-funded warrants will not be entitled to exercise any portion of any pre-funded warrant which, upon giving effect to such exercise, would cause the aggregate number of shares of our common stock beneficially owned by the holder (together with its affiliates) to exceed a specified percentage of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. See “Description of Securities We Are Offering—Pre-Funded Warrants.” As a result, you may not be able to exercise your pre-funded warrants for shares of our common stock at a time when it would be financially beneficial for you to do so. In such circumstance you could seek to sell your pre-funded warrants to realize value, but you may be unable to do so in the absence of an established trading market for the pre-funded warrants.

If you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution in the book value of your shares.

The offering price per share of our common stock and per pre-funded warrant in this offering each exceeds the net tangible book value per share of our common stock outstanding prior to this offering. As a result, if you purchase shares of our common stock or pre-funded warrants in this offering, you will experience immediate dilution of \$10.96 per share, based on the public offering price of \$50.00 per share of common stock and \$49.99 per pre-funded warrant, and our net tangible book value per share as of December 31, 2025. The exercise or vesting and settlement, as applicable, of outstanding stock options, restricted stock units or warrants may result in further dilution of your investment. See the section titled “Dilution” below for a more detailed illustration of the dilution you may incur if you participate in this offering.

You may experience future dilution as a result of future equity offerings or the issuance of equity as consideration for complementary businesses or assets we may acquire, and the perception that any such offerings or issuances could occur may depress our share price and our ability to raise funds in any new offering.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock. We cannot assure you that we will be able to sell shares of our common stock or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares of our common stock or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering. We also may issue additional shares of our common stock or other securities convertible into or exchangeable for our common stock as consideration for acquisitions of businesses or products, strategic alliances or joint ventures with third parties that we believe will complement or augment our existing business, which may result in significant dilution to our stockholders, including the investors in this offering.

We do not currently intend to pay dividends on our common stock, and any return to investors is expected to come, if at all, only from potential increases in the price of our common stock.

We have never declared or paid any cash dividends on our common stock, and you should not rely on an investment in our common stock to provide dividend income. In addition, pursuant to the Loan and Security Agreement with Avenue Capital Management II, L.P., as administrative agent and collateral agent and Avenue Venture Opportunities Fund II, L.P., as lender (collectively, “Avenue Capital”), we are prohibited from paying cash dividends without the prior written consent of Avenue Capital, and future debt instruments may materially restrict our ability to pay dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

An active trading market for our common stock may not be sustained following this offering.

Although our common stock is listed on the Nasdaq Capital Market, an active trading market for our common stock may not be sustained. If an active market for our common stock does not continue, it may be difficult for you to sell your shares, including shares you may purchase in this offering, without depressing the market price for the shares or to sell your shares at all. Any inactive trading market for our common stock may also impair our ability to raise capital to continue to fund our operations by selling common stock and may impair our ability to acquire other companies or technologies by using our common stock as consideration.

USE OF PROCEEDS

We estimate that the net proceeds to us from our issuance and sale of our securities in this offering will be approximately \$55.9 million, or approximately \$64.4 million if the underwriters exercise in full their option to purchase up to 180,000 additional shares of common stock, based on the public offering price of \$50.00 per share and \$49.99 per pre-funded warrant, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We will receive only nominal additional proceeds from any exercise of pre-funded warrants.

We intend to use the net proceeds from this offering to advance the Company's pre-commercial and launch activities, for planned clinical trials, and for working capital, capital expenditures and other general corporate purposes. We may also use a portion of the net proceeds to invest in or acquire additional businesses or technologies that we believe are complementary to our own, although we have no current plans, commitments or agreements with respect to any future acquisitions as of the date of this prospectus supplement.

Our expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including uncertainties inherent in the clinical development process, and any unforeseen cash needs.

As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of the net proceeds from this offering. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. Pending these uses, we expect to invest the net proceeds in short-term, interest-bearing obligations, certificates of deposit or direct or guaranteed obligations of the United States or foreign government agencies. The goal with respect to the investment of these net proceeds is capital preservation and liquidity so that such funds are readily available to fund our operations.

Based on the planned use of proceeds described above, we believe that the net proceeds from this offering and our current cash and cash equivalents will be sufficient to enable us to fund our operating expenses and capital expenditure requirements through the second half of 2027. We have based this estimate on assumptions that may prove to be incorrect, and we could use our available capital resources sooner than we currently expect.

DIVIDEND POLICY

We have never declared or paid any dividends on our common stock. We anticipate that we will retain all of our future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying cash dividends in the foreseeable future. In addition, pursuant to the Loan and Security Agreement with Avenue Capital, we are prohibited from paying cash dividends without the prior written consent of Avenue Capital, and future debt instruments may materially restrict our ability to pay dividends on our common stock. Any future determination to declare or pay dividends will be at the discretion of our board of directors, subject to applicable laws, and will depend on our financial condition, results of our operations, capital requirements, general business conditions and other factors that our board of directors considers relevant.

DILUTION

If you invest in our common stock or pre-funded warrants in this offering, your interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock or pre-funded warrant that you will pay in this offering and the as adjusted net tangible book value per share of our common stock after this offering. Our historical net tangible book value as of December 31, 2025 was \$42.5 million, or \$30.99 per share of common stock. Historical net tangible book value per share represents the amount of our total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding on December 31, 2025.

After giving effect to our issuance and sale of 1,150,000 shares of common stock and pre-funded warrants to purchase 50,000 shares of common stock in this offering at a public offering price of \$50.00 per share or \$49.99 per pre-funded warrant, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us (but not giving effect to the exercise of any pre-funded warrants), our as adjusted net tangible book value as of December 31, 2025 would have been \$98.5 million, or \$39.04 per share. This represents an immediate increase in as adjusted net tangible book value per share of \$8.05 to existing stockholders and immediate dilution of \$10.96 in as adjusted net tangible book value per share to new investors purchasing common stock and pre-funded warrants in this offering. Dilution per share to new investors is determined by subtracting as adjusted net tangible book value per share after this offering from the public offering price per share paid by new investors. The following table illustrates this per share dilution to the new investors purchasing shares of common stock and pre-funded warrants in this offering without giving effect to the option to purchase additional shares granted to the underwriters:

Public offering price per share		\$ 50.00
Net tangible book value per share as of December 31, 2025	\$ 30.99	
Increase in net tangible book value per share attributable to investors purchasing our common stock and pre-funded warrants in this offering	8.05	
As adjusted net tangible book value per share after this offering		39.04
Dilution per share to new investors		\$ 10.96

If the underwriters exercise their option to purchase 180,000 additional shares in full at the public offering price of \$50.00 per share, the as adjusted net tangible book value will increase to \$39.57 per share, representing an immediate increase to existing stockholders of \$8.58 per share and an immediate dilution of \$10.43 per share to new investors.

The number of shares of our common stock to be outstanding after this offering is based on 1,372,043 shares of common stock outstanding as of December 31, 2025 and excludes:

- 42,421 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2025, at a weighted-average exercise price of \$244.86 per share;
- 47,200 shares of common stock issuable upon the vesting or other settlement of restricted stock units outstanding as of December 31, 2025;
- 62,350 shares of common stock issuable upon the vesting or other settlement of restricted stock units that we granted after December 31, 2025 and through the date of this prospectus supplement;
- 169,147 shares of common stock issuable upon the exercise of common warrants outstanding as of December 31, 2025 at an exercise price of \$297.02 per share;
- 58,608 shares of common stock issuable upon the exercise of common stock warrants that we issued after December 31, 2025 and through the date of this prospectus supplement at an exercise price of \$50.00 per share;
- 19,715 shares of common stock reserved for future issuance under our 2020 Equity Incentive Plan as of December 31, 2025, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan; and
- 12,531 shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan as of December 31, 2025, as well as any automatic increases in the number of shares of common stock reserved for future issuance under this plan.

New investors will experience further dilution if any of our outstanding options, restricted stock units or warrants are exercised or vest and settle, as applicable, or new options or restricted stock units are issued and exercised or vest and settle, as applicable, under our equity incentive plans. In addition, we may choose to raise additional capital, including through our ATM Program, due to market conditions or strategic considerations even if we believe that we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders. We also may issue additional shares of common stock or other securities convertible into or exchangeable for our common stock as consideration for acquisitions of businesses or products, strategic alliances or joint ventures with third parties that we believe will complement or augment our existing business, which may result in significant dilution to our stockholders, including the investors in this offering.

DESCRIPTION OF SECURITIES WE ARE OFFERING

Common Stock

We are offering shares of our common stock in this offering. See “Description of Capital Stock” in the accompanying prospectus for more information regarding our shares of common stock. Our common stock is listed on the Nasdaq Capital Market under the symbol “SPRB.”

Pre-Funded Warrants

We are offering pre-funded warrants to purchase up to 50,000 shares of common stock. This summary is subject to, and qualified in its entirety by, the provisions of the form of pre-funded warrant, which will be filed with the SEC as an exhibit to a Current Report on Form 8-K in connection with this offering and incorporated by reference into the registration statement of which this prospectus supplement and the accompanying prospectus form a part. You should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of such warrants. See the section titled “Where You Can Find More Information” in this prospectus supplement.

Form

The pre-funded warrants will be issued as individual warrant agreements to each individual purchaser of a pre-funded warrant. The pre-funded warrants will be issued in certificated form only.

Term

The pre-funded warrants do not expire.

Exercisability

The pre-funded warrants are exercisable at any time after their original issuance. The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice and by payment in full of the exercise price in immediately available funds for the number of shares of our common stock purchased upon such exercise. As an alternative to payment of the exercise price in immediately available funds, the holder may elect to exercise the pre-funded warrant through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of our common stock determined according to the formula set forth in the pre-funded warrant. No fractional shares of our common stock will be issued in connection with the exercise of a pre-funded warrant. In lieu of fractional shares, we will, at our election, either pay the holder an amount in cash equal to such fraction multiplied by the exercise price or round up to the next whole share.

Exercise Limitations

Under the pre-funded warrants, we may not effect the exercise of any pre-funded warrant, and a holder (together with its affiliates) will not be entitled to exercise any portion of any pre-funded warrant, which, upon giving effect to such exercise, would cause the aggregate number of shares of our common stock beneficially owned by the holder (together with its affiliates) to exceed 4.99% (or, upon election of the holder, 9.99%) of the number of shares of our common stock outstanding immediately prior to or after giving effect to the exercise, subject to such holder’s rights under the pre-funded warrant to increase or decrease such percentage to another percentage not in excess of 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants upon at least 61 days’ prior notice from such holder to us.

Exercise Price

The exercise price per whole share of our common stock issuable upon the exercise of the pre-funded warrants is \$0.01 per share of our common stock. The exercise price of the pre-funded warrants and the number of shares of our common stock issuable upon exercise of the pre-funded warrants are subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Transferability

Subject to applicable laws, the pre-funded warrants may be sold, transferred or assigned without our consent. The pre-funded warrants will be held in definitive form by the purchasers. The ownership of the pre-funded warrants and any transfers of the pre-funded warrants will be registered in a warrant register maintained by us or our transfer agent.

Exchange Listing

We do not plan on applying to list the pre-funded warrants on The Nasdaq Capital Market, any other national securities exchange or any other nationally recognized trading system.

Subsequent Rights Offerings

If at any time we grant, issue or sell any specified common stock equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of common stock (the “Purchase Rights”), then the holder of a pre-funded warrant will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the holder could have acquired if the holder had held the number of shares of common stock acquirable upon complete exercise of the holder’s pre-funded warrant, without regard to any limitations on exercise, including without limitation, such holder’s beneficial ownership limitation, immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of common stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the holder’s right to participate in any such Purchase Right would result in the holder exceeding the holder’s beneficial ownership limitation, then the holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of common stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the holder until such time, if ever, as its right thereto would not result in the holder exceeding the holder’s beneficial ownership limitation).

Pro Rata Distributions

During such time as a holder’s pre-funded warrant is outstanding, if we declare or make any dividend or other distribution of our assets (or rights to acquire its assets) to holders of shares of our common stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction), or a Distribution, at any time after the issuance of the pre-funded warrants, then, in each such case, the holder of a pre-funded warrant shall be entitled to participate in such Distribution to the same extent that the holder would have participated therein if the holder had held the number of shares of common stock acquirable upon complete exercise of the pre-funded warrant (without regard to any limitations on exercise, including without limitation, the holder’s beneficial ownership limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of common stock are to be determined for the participation in such Distribution (provided, however, that, to the extent that the holder’s right to participate in any such Distribution would result in the holder exceeding the holder’s beneficial ownership limitation, then the holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of common stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the holder until such time, if ever, as its right thereto would not result in such holder exceeding its beneficial ownership limitation).

Fundamental Transactions

In the event of a fundamental transaction, as described in the pre-funded warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of greater than 50% of the voting power of our capital stock or any person or group becoming the beneficial owner of greater than 50% of the voting power of our capital stock, upon consummation of such a fundamental transaction, the holders of the pre-funded warrants will be entitled to receive upon exercise of the pre-funded warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the pre-funded warrants immediately prior to such fundamental transaction without regard to any limitations on exercise contained in the pre-funded warrants, and any additional consideration receivable as a result of such fundamental transaction.

No Rights as a Stockholder

Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of shares of our common stock, the holder of a pre-funded warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the pre-funded warrant.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS OF OUR COMMON STOCK AND PRE-FUNDED WARRANTS

The following summary describes the material U.S. federal income tax consequences of the acquisition, ownership, and disposition of our common stock and pre-funded warrants acquired in this offering by Non-U.S. Holders (as defined below). This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating thereto, does not deal with non-U.S., state, and local consequences that may be relevant to Non-U.S. Holders in light of their particular circumstances, and does not address U.S. federal tax consequences (such as gift and estate taxes) other than income taxes. Special rules different from those described below may apply to certain Non-U.S. Holders that are subject to special treatment under the Internal Revenue Code of 1986, as amended (the Code), such as financial institutions, insurance companies, tax-exempt organizations, tax-qualified retirement plans, governmental organizations, broker-dealers and traders in securities, U.S. expatriates, “controlled foreign corporations,” “passive foreign investment companies,” corporations that accumulate earnings to avoid U.S. federal income tax, corporations organized outside of the United States, any state thereof, or the District of Columbia that are nonetheless treated as U.S. taxpayers for U.S. federal income tax purposes, persons that hold our common stock or pre-funded warrants as part of a “straddle,” “hedge,” “conversion transaction,” “synthetic security,” or integrated investment or other risk reduction strategy, persons who acquire our common stock or pre-funded warrants through the exercise of an option or otherwise as compensation, persons subject to the alternative minimum tax or federal Medicare contribution tax on net investment income, persons subject to special tax accounting rules under Section 451(b) of the Code, “qualified foreign pension funds” as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds, partnerships and other pass-through entities or arrangements and investors in such pass-through entities or arrangements, persons deemed to sell our common stock or pre-funded warrants under the constructive sale provisions of the Code, and persons that own, or are deemed to own, our common stock or pre-funded warrants. Such Non-U.S. Holders are urged to consult their own tax advisors to determine the U.S. federal, state, local, and other tax consequences that may be relevant to them. Furthermore, the discussion below is based upon the provisions of the Code and Treasury Regulations, rulings, and judicial decisions thereunder, each as of the date hereof, and such authorities may be repealed, revoked, or modified, perhaps retroactively, so as to result in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the U.S. Internal Revenue Service (the IRS) with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions. This discussion assumes that the Non-U.S. Holder holds our common stock as a “capital asset” within the meaning of Section 1221 of the Code (generally, property held for investment).

This discussion is for informational purposes only and is not tax advice. Persons considering the purchase of our common stock or pre-funded warrants pursuant to this offering should consult their own tax advisors concerning the U.S. federal income, gift, estate, and other tax consequences of acquiring, owning, and disposing of our common stock or pre-funded warrants, as applicable in light of their particular situations as well as any consequences arising under the laws of any other taxing jurisdiction, including any state, local, or foreign tax consequences, or under any applicable income tax treaty.

For the purposes of this discussion, a “Non-U.S. Holder” is a beneficial owner of common stock or pre-funded warrants that is neither a U.S. Holder nor a partnership (or other entity treated as a partnership for U.S. federal income tax purposes regardless of its place of organization or formation). A “U.S. Holder” means a beneficial owner of our common stock or pre-funded warrants that is for U.S. federal income tax purposes any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation or other entity treated as a corporation for U.S. federal income tax purposes created or organized in or under the laws of the United States, any state thereof, or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if it (1) is subject to the primary supervision of a court within the United States and one or more United States persons (within the meaning of Section 7701(a)(30) of the Code) have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a United States person.

Treatment of Pre-Funded Warrants

Although it is not entirely free from doubt, because the exercise price of the pre-funded warrants is a nominal amount, we believe a pre-funded warrant should be treated as a share of our common stock for U.S. federal income tax purposes and a holder of pre-funded warrants should generally be taxed in the same manner as a holder of such shares, as described below. Accordingly, no gain or loss should be recognized upon the exercise of a pre-funded warrant and, upon exercise, the holding period of a pre-funded warrant should carry over to the share received. Similarly, the tax basis of the pre-funded warrant should carry over to the share received upon exercise, increased by the exercise price of \$0.01 per share.

Our characterization is not binding on the IRS, and the IRS may treat our pre-funded warrants as warrants to acquire our common stock. In that case, the amount and character of your gain with respect to an investment in our pre-funded warrants could be materially different than the discussion set forth below. Accordingly, each holder should consult his, her or its own tax advisor regarding the risks associated with the acquisition of pre-funded warrants pursuant to this offering (including potential alternative characterizations). The balance of this discussion generally assumes that a pre-funded warrant is treated as a share of our common stock for U.S. federal income tax purposes, and references to common stock include pre-funded warrants.

Distributions and Constructive Distributions

As described in the section titled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock (or pre-funded warrants) in the foreseeable future. However, if we do make distributions of cash or property on our common stock (or pre-funded warrants) to a Non-U.S. Holder, such distributions, to the extent made out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles), generally will constitute dividends for U.S. tax purposes and will be subject to withholding tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty, subject to the discussions below regarding effectively connected income, backup withholding, and foreign accounts. To obtain a reduced rate of withholding under a treaty, a Non-U.S. Holder generally will be required to provide us with a properly executed IRS Form W-8BEN (in the case of individuals) or IRS Form W-8BEN-E (in the case of entities), or other appropriate form, certifying the Non-U.S. Holder’s entitlement to benefits under that treaty. We do not intend to adjust our withholding unless such certificates are provided to us or our paying agent before the payment of dividends and are updated as may be required by the IRS. In the case of a Non-U.S. Holder that is an entity, Treasury Regulations and the relevant tax treaty provide rules to determine whether, for purposes of determining the applicability of a tax treaty, dividends will be treated as paid to the entity or to those holding an interest in that entity. If a Non-U.S. Holder holds stock through a financial institution or other agent acting on the holder’s behalf, the holder will be required to provide appropriate documentation to such agent. The holder’s agent will then be required to provide certification to us or our paying agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty and you do not timely file the required certification, you may be able to obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

We generally are not required to withhold tax on dividends paid (or constructive dividends deemed paid, as described below) to a Non-U.S. Holder that are effectively connected with the Non-U.S. Holder’s conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment or fixed base that such holder maintains in the United States) if a properly executed IRS Form W-8ECI, stating that the dividends are so connected, is furnished to us (or, if stock is held through a financial institution or other agent, to such agent). In general, such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular rates applicable to U.S. residents. A corporate Non-U.S. Holder receiving effectively connected dividends may also be subject to an additional “branch profits tax,” which is imposed, under certain circumstances, at a rate of 30% (or such lower rate as may be specified by an applicable treaty) on the corporate Non-U.S. Holder’s effectively connected earnings and profits, subject to certain adjustments. Non-U.S. Holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

To the extent distributions on our common stock, if any, exceed our current and accumulated earnings and profits, they will first reduce the Non-U.S. Holder’s adjusted basis in our common stock, but not below zero, and then will be treated as gain to the extent of any excess amount distributed, and taxed in the same manner as gain realized from a sale or other disposition of common stock as described in the next section.

The terms of pre-funded warrants provide for an adjustment to the exercise price or number of shares of our common stock for which the warrants may be exercised under certain circumstances. If such adjustment has the effect of merely preventing dilution, such adjustment may not be a taxable event. However, a holder of pre-funded warrants may be treated as receiving a constructive distribution from us if the adjustment increases the holder's proportionate interest in our assets or earnings and profits (e.g., through an increase in the number of shares of our common stock that would be obtained upon exercise), including as a result of a distribution of cash or other property, such as other securities, to the holders of our common stock, or as a result of the issuance of a stock dividend to holders of our common stock, in each case that is taxable to such holders as a distribution. In addition, the failure to provide for an adjustment (or to adequately adjust) to prevent dilution may also result in a constructive distribution. Any constructive distribution received by a holder would be subject to tax in the same manner as if such holder received a cash distribution (as described above) from us equal to the fair market value of such increased proportionate interest. In the case of any constructive dividend, it is possible that this tax would be withheld from any amount payable or distributable to a non-U.S. holder by the applicable withholding agent, including cash distributions on other property or sale proceeds from warrants or other property subsequently paid or credited to such holder. For certain informational reporting purposes, we are required to determine the date and amount of any such constructive distributions and publicly report such information or report such information to the IRS and holders of our pre-funded warrants not exempt from information reporting. Proposed Treasury regulations, on which we may rely prior to the issuance of final regulations, specify how the date and amount of constructive distributions, and withholding obligations with respect thereto, are determined.

Gain on Disposition of Our Common Stock or Pre-Funded Warrants

Subject to the discussions below regarding backup withholding and foreign accounts, a Non-U.S. Holder generally will not be subject to U.S. federal income tax with respect to gain realized on a sale or other disposition of our common stock or pre-funded warrants unless (a) the gain is effectively connected with a trade or business of such holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base that such holder maintains in the United States), (b) the Non-U.S. Holder is a nonresident alien individual and is present in the United States for a period or periods aggregating 183 or more days in the taxable year of the disposition and certain other conditions are met, or (c) we are or have been a "United States real property holding corporation" within the meaning of Code Section 897(c)(2) at any time within the shorter of the five-year period preceding such disposition or such holder's holding period in our common stock or pre-funded warrants. In general, we would be a United States real property holding corporation if the fair market value of our U.S. real property interests equals or exceeds 50% of the sum of the fair market value of our worldwide real property interests plus our other assets used or held for use in a trade or business. We believe that we have not been and we are not, and do not anticipate becoming, a United States real property holding corporation. Even if we are treated as a United States real property holding corporation, gain realized by a Non-U.S. Holder on a disposition of our common stock or pre-funded warrants will not be subject to U.S. federal income tax so long as (1) the Non-U.S. Holder owned, directly, indirectly, and constructively, no more than 5% of our common stock and/or pre-funded warrants at all times within the shorter of (i) the five-year period preceding the disposition or (ii) the holder's holding period in our common stock or pre-funded warrants and (2) our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market. There can be no assurance that our common stock will continue to qualify as regularly traded on an established securities market. If any gain on your disposition is taxable because we are a United States real property holding corporation and your ownership of our common stock exceeds 5%, you will be taxed on such disposition generally in the manner as gain that is effectively connected with the conduct of a U.S. trade or business (subject to the provisions under an applicable income tax treaty), except that the branch profits tax generally will not apply.

If you are a Non-U.S. Holder described in (a) above, you will be required to pay tax on a net income basis at the U.S. regular federal income tax rates applicable to U.S. Holders, and corporate Non-U.S. Holders described in (a) above may be subject to the additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. If you are a Non-U.S. Holder described in (b) above, you will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate as may be specified by an applicable income tax treaty) on the net gain derived from the disposition, which gain may be offset by certain U.S.-source capital losses (even though you are not considered a resident of the United States), provided that the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses. Non-U.S. Holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules. Special rules may apply to non-U.S. holders of pre-funded warrants, who should consult their tax advisors.

Information Reporting Requirements and Backup Withholding

Information returns are required to be filed with the IRS in connection with payments of dividends on our common stock or pre-funded warrants. Unless you comply with certification procedures to establish that you are not a U.S. person, information returns may also be filed with the IRS in connection with the proceeds from a sale or other disposition of our common stock or pre-funded warrants. You may be subject to backup withholding on payments on our common stock or on the proceeds from a sale or other disposition of our common stock or pre-funded warrants unless you comply with certification procedures to establish that you are not a U.S. person or otherwise establish an exemption. Your provision of a properly executed applicable IRS Form W-8 certifying your non-U.S. status will permit you to avoid backup withholding. Amounts withheld under the backup withholding rules are not additional taxes and may be refunded or credited against your U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Foreign Accounts

Sections 1471 through 1474 of the Code (commonly referred to as FATCA) impose a U.S. federal withholding tax of 30% on certain payments, including dividends paid on, and the gross proceeds of a disposition of, our common stock or pre-funded warrants paid to a foreign financial institution (as specifically defined by applicable rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity holders of such institution, as well as certain account holders that are foreign entities with U.S. owners). FATCA also generally imposes a federal withholding tax of 30% on certain payments, including dividends paid on, and the gross proceeds of a disposition of, our common stock or pre-funded warrants to a non-financial foreign entity unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding substantial direct and indirect U.S. owners of the entity. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. The withholding tax described above will not apply if the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from the rules.

The U.S. Treasury Department has released proposed regulations which, if finalized in their present form, would eliminate the federal withholding tax of 30% applicable to the gross proceeds of a disposition of our common stock or pre-funded warrants. In its preamble to such proposed regulations, the U.S. Treasury Department stated that taxpayers may generally rely on the proposed regulations until final regulations are issued. Non-U.S. Holders are encouraged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in our common stock or pre-funded warrants.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING, AND DISPOSING OF OUR COMMON STOCK OR PRE-FUNDED WARRANTS, INCLUDING THE CONSEQUENCES OF ANY RECENT OR PROPOSED CHANGE IN APPLICABLE LAW.

UNDERWRITING

Leerink Partners LLC, Guggenheim Securities, LLC and Oppenheimer & Co. Inc. are acting as representatives of each of the underwriters named below and as joint bookrunning managers for this offering. Subject to the terms and conditions set forth in the underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock and pre-funded warrants set forth opposite its name below.

Underwriter	Number of Shares	Number of Pre-Funded Warrants
Leerink Partners LLC	575,000	25,000
Guggenheim Securities, LLC	345,000	15,000
Oppenheimer & Co. Inc.	143,750	6,250
JonesTrading Institutional Services LLC	43,125	1,875
Craig-Hallum Capital Group LLC	43,125	1,875
Total	1,150,000	50,000

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares of common stock and pre-funded warrants sold under the underwriting agreement if any of the shares and pre-funded warrants are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares of common stock and pre-funded warrants, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares and pre-funded warrants, and subject to other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officers' certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Discounts and Commissions

The representatives have advised us that the underwriters propose initially to offer the shares of common stock and pre-funded warrants to the public at the initial public offering price set forth on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of \$1.80 per share of common stock or \$1.80 per pre-funded warrant. After the initial offering, the public offering price, concession or any other term of this offering may be changed by the representatives.

The following table shows the initial public offering price per share of common stock and pre-funded warrant, underwriting discounts and commissions and proceeds, before expenses, to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares of our common stock.

	Per Share	Per Pre-Funded Warrant	Total	
			Without Option	With Option
Public offering price	\$ 50.00	\$ 49.99	\$ 59,999,500	\$ 68,999,500
Underwriting discounts and commissions	\$ 3.00	\$ 3.00	\$ 3,600,000	\$ 4,140,000
Proceeds, before expenses, to us	\$ 47.00	\$ 46.99	\$ 56,399,500	\$ 64,859,500

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately \$450,000. We also have agreed to reimburse the underwriters for up to \$20,000 for their FINRA counsel fee. In accordance with FINRA Rule 5110, this reimbursed fee is deemed underwriting compensation for this offering.

Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus supplement, to purchase up to 180,000 additional shares of common stock at the initial public offering price, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to the conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We have agreed that, during the period commencing on and including the date of this prospectus supplement and continuing through and including the 90th day following the date of this prospectus supplement, we will not, directly or indirectly, without the prior written consent of Leerink Partners LLC, (i) directly or indirectly, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock or file any registration statement under the Securities Act with respect to any of the foregoing, (ii) enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of the shares of common stock, whether any such swap or transaction described in clause (i) or (ii) above is to be settled by delivery of shares of common stock or such other securities, in cash or otherwise, or (iii) publicly announce an intention to effect any such swap, agreement or other transaction described in clauses (i) and (ii). The foregoing sentence shall not apply to (A) the securities offered by this prospectus supplement; (B) any shares of common stock issuable upon conversion of securities or the exchange and/or exercise (including by any net exercise or exercise by delivery of already owned shares of common stock) of warrants, options or other rights or the conversion of a convertible security, or upon vesting and settlement of restricted share units, in effect or outstanding on the date of this prospectus supplement and referred to in this prospectus supplement, the accompanying prospectus or the documents incorporated herein or therein; (C) any shares of common stock issued or options to purchase shares of common stock or other securities under the Company's equity incentive plans, or shares of common stock issuable upon the exercise of options or vesting of restricted share units or other securities, pursuant to any employee or director share option or benefits plan, share ownership plan or dividend reinvestment plan of the Company whether now in effect or hereafter implemented; (D) any shares of common stock or securities convertible into or exchangeable for shares of common stock as consideration for mergers, acquisitions, joint ventures, collaborations, licensing agreements, commercial relationships, debt financing transactions, other business combinations or strategic alliances occurring after the date of this prospectus supplement which are not issued for capital raising purposes; (E) warrants issued upon the surrender and cancellation of outstanding shares of common stock; (F) modification of any outstanding options, warrants of any rights to purchase or acquire shares of common stock; or (G) the filing by the Company of any registration statement on Form S-8 or a successor form thereto.

Our executive officers and directors (the "lock-up signatories") have agreed not to sell or transfer any shares or securities convertible into or exchangeable or exercisable for shares, for 90 days after the date of this prospectus supplement (the "Lock-Up Period") without first obtaining the written consent of Leerink Partners LLC on behalf of the underwriters. Specifically, the lock-up signatories have agreed, with certain limited exceptions, not to directly or indirectly:

- i. offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant for the sale of, or otherwise dispose of or transfer any shares of common stock or any securities convertible into or exchangeable or exercisable for shares of common stock, whether now owned or hereafter acquired by the lock-up signatory or with respect to which the lock-up signatory has or hereafter acquires the power of disposition (collectively, the "Lock-Up Securities"), or exercise any right with respect to the registration of any of the Lock-Up Securities, or file or cause to be filed any registration statement in connection therewith, under the Securities Act; or
- ii. enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of the Lock-Up Securities, whether any such swap or transaction is to be settled by delivery of Shares or other securities, in cash or otherwise.

Notwithstanding the foregoing, and subject to the conditions below, the lock-up signatories may transfer Lock-Up Securities without the prior written consent of Leerink Partners LLC, provided, in each case, that (1) in the cases of clauses (a)-(e) below, Leerink Partners LLC receives a signed lock-up agreement for the balance of the Lock-Up Period from each donee, trustee, distributee, or transferee, as the case may be, (2) any such transfer shall not involve a disposition for value, (3) such transfers are not required to be reported with the SEC on Form 4 in accordance with Section 16 of the Exchange Act (other than, in the case of a transfer or other disposition pursuant to clauses (a), (b), (d), (f) and (g) below, any Form 4 or Form 5 required to be filed under the Exchange Act if the lock-up signatory is subject to Section 16 reporting with respect to the Company under the Exchange Act and indicating by footnote disclosure or otherwise the nature of the transfer or disposition), and (4) the lock-up signatory does not otherwise voluntarily effect any public filing or report regarding such transfers (other than a filing on a Form 5 made after the expiration of the Lock-Up Period):

- a) as a bona fide gift or gifts or charitable contribution(s) (including to one or more charitable trusts);
- b) for estate planning purposes or to any trust for the direct or indirect benefit of the lock-up signatory or the immediate family of the lock-up signatory (for purposes of the lock-up agreement, “immediate family” shall mean any relationship by blood, marriage, domestic partnership or adoption, not more remote than first cousin);
- c) as a distribution or other transfer by a partnership to its partners or former partners or by a limited liability company to its members or retired members or by a corporation to its stockholders or former stockholders or to any wholly-owned subsidiary of such corporation;
- d) to the lock-up signatory’s affiliates, the immediate family of the lock-up signatory or to any corporation, limited liability company, partnership, investment fund or other entity controlled or managed by the lock-up signatory and/or an immediate family member of the lock-up signatory;
- e) pursuant to a qualified domestic relations order or in connection with a divorce settlement, divorce decree, separation agreement or other order of a court or regulatory agency;
- f) by will, other testamentary document or intestate succession upon the death of the lock-up signatory; or
- g) to the Company in satisfaction of any tax withholding obligation.

Provided further, that, the restrictions shall not apply to (1) the transfer of the lock-up signatory’s Lock-Up Securities to the Company in connection with the termination of the lock-up signatory’s services to the Company or the lock-up signatory’s failure to meet any vesting conditions set out upon issuance of such securities, provided that any filing under Section 16 of the Exchange Act made in connection with such transfer shall clearly indicate in the footnotes thereto that the filing relates to the circumstances described in this clause (1); (2) the exercise, settlement or exchange by the lock-up signatory of any option or warrant to acquire any shares of common stock or options to purchase shares of common stock, or the settlement of restricted stock units or other equity awards, in each case for cash or on a “cashless” or “net exercise” basis, pursuant to any stock option, stock bonus or other stock plan or arrangement; provided, however, that the underlying shares of common stock shall continue to be subject to these restrictions on transfer and that any filing under Section 16 of the Exchange Act made in connection with such exercise or exchange shall clearly indicate in the footnotes thereto that (a) the filing relates to the circumstances described in this clause (2) and (b) no shares were sold by the reporting person; (3) the transfer of Lock-Up Securities upon the completion of a bona fide third-party tender offer, merger, consolidation or other similar transaction made to all holders of the Company’s securities involving a change of control of the Company; provided, however, that in the event that such tender offer, merger, consolidation or other such transaction is not completed, such securities held by the lock-up signatory shall remain subject to the restrictions on transfer set forth in the lock-up agreement; (4) the conversion of outstanding preferred stock of the Company into shares of common stock, provided that any such shares received upon such conversion shall be subject to these restrictions on transfer; and (5) the transfer of the lock-up signatory’s Lock-Up Securities to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under clauses (a) through (g) above.

Notwithstanding anything to the contrary of the above restrictions, nothing shall prevent the lock-up signatory from establishing a 10b5-1 trading plan that complies with Rule 10b5-1 under the Exchange Act (“10b5-1 Trading Plan”) or from amending an existing 10b5-1 Trading Plan so long as there are no sales of Lock-Up Securities under any such 10b5-1 Trading Plan during the Lock-Up Period; provided, however, that any public announcement or filing under the Exchange Act regarding the establishment or amendment of such 10b5-1 Trading Plan shall clearly disclose that no shares of common stock shall be disposed by such plan during the duration of the Lock-Up Period.

Nasdaq Capital Market Listing

Our shares of common stock are listed on the Nasdaq Capital Market under the symbol “SPRB.” We do not intend to list the pre-funded warrants on the Nasdaq Capital Market or any other national securities exchange or nationally recognized trading system.

Price Stabilization, Short Positions and Penalty Bids

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representatives may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix or maintain that price.

In connection with this offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in this offering. “Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares granted to them under the underwriting agreement described above. “Naked” short sales are sales in excess of such option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the closing of this offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Capital Market, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Distribution

In connection with this offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Some of the underwriters and certain of their affiliates may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us and our affiliates, for which they may in the future receive customary fees, commissions and expenses.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area (each, a “Relevant State”), no securities have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the securities which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that securities may be offered to the public in that Relevant State at any time:

- A. to any legal entity which is a qualified investor as defined under Article 2 of the Prospectus Regulation;
- B. to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or
- C. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of securities shall require us or any of the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to any securities in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any securities to be offered so as to enable an investor to decide to purchase or subscribe for any securities, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129, as amended.

Notice to Prospective Investors in the United Kingdom

No securities have been offered or will be offered pursuant to the offering to the public in the United Kingdom prior to the publication of a prospectus in relation to the Securities which has been approved by the Financial Conduct Authority, except that the securities may be offered to the public in the United Kingdom at any time:

- A. to any legal entity which is a qualified investor as defined under Article 2 of the UK Prospectus Regulation;
- B. to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or
- C. in any other circumstances falling within Section 86 of the Financial Services and Markets Act 2000 (the “FSMA”),

provided that no such offer of the securities shall require us or any representative to publish a prospectus pursuant to Section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation. For the purposes of this provision, the expression an “offer to the public” in relation to the securities in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any securities to be offered so as to enable an investor to decide to purchase or subscribe for any securities and the expression “UK Prospectus Regulation” means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018.

Notice to Prospective Investors in Canada

The securities may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

Cooley LLP, San Francisco, California will pass upon the validity of the issuance of the securities offered in this prospectus supplement. Goodwin Procter LLP, Redwood City, California is acting as counsel for the underwriters in connection with this offering.

EXPERTS

The financial statements of Spruce Biosciences, Inc. as of December 31, 2025 and 2024 and for the years then ended incorporated by reference in this prospectus supplement and in the registration statement have been so incorporated in reliance on the report of BDO USA, P.C., an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting. The report on the financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement is part of a registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth or incorporated by reference in the registration statement. Whenever a reference is made in this prospectus supplement to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement for a copy of such contract, agreement or other document.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including Spruce. The address of the SEC website is www.sec.gov.

We maintain a website at www.sprucebiosciences.com. Information contained in or accessible through our website does not constitute a part of this prospectus supplement.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information into this prospectus supplement and the accompanying prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for the documents incorporated by reference in this prospectus supplement and accompanying prospectus is 001-39594. The documents incorporated by reference into this prospectus supplement and the accompanying prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2025, filed with the SEC on March 9, 2026;
- our Current Reports on Form 8-K filed with the SEC on [January 8, 2026](#), [March 9, 2026](#) and [March 20, 2026](#), to the extent the information in such reports is filed and not furnished;
- our Definitive Proxy Statement on [Schedule 14A](#), filed with the SEC on April 9, 2026 (other than the portions thereof that are furnished and not filed); and
- the description of our common stock which is contained in [Exhibit 4.3](#) to our Annual Report on Form 10-K for the year ended December 31, 2025, filed with the SEC on March 9, 2026, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference into this prospectus supplement all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

You may obtain any of the documents incorporated by reference in this prospectus supplement from the SEC through the SEC’s website at the address provided above. You also may request a copy of any document incorporated by reference in this prospectus supplement (excluding any exhibits to those documents, unless the exhibit is specifically incorporated by reference in this document), at no cost, by writing or telephoning us at the following address and phone number:

Spruce Biosciences, Inc.
611 Gateway Boulevard, Suite 740
South San Francisco, California 94080
(415) 343-5986

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this prospectus supplement will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus supplement modifies or supersedes the statement.



\$300,000,000

Common Stock
Preferred Stock
Debt Securities
Warrants

From time to time, we may offer and sell up to an aggregate amount of \$300,000,000 of any combination of the securities described in this prospectus in one or more offerings. We may also offer securities as may be issuable upon conversion, redemption, repurchase, exchange or exercise of any securities registered hereunder, including any applicable antidilution provisions.

This prospectus provides a general description of the securities we may offer. Each time we offer securities for sale pursuant to this prospectus, we will provide the specific terms of these offerings and the securities offered in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as the documents incorporated by reference, before you invest in any of the securities being offered.

This prospectus may not be used to consummate a sale of any securities unless accompanied by a prospectus supplement.

Our common stock is traded on the Nasdaq Capital Market under the symbol "SPRB." On October 28, 2025, the last reported sales price of our common stock was \$124.51 per share. The applicable prospectus supplement will contain information, where applicable, as to any other listing on the Nasdaq Capital Market or any securities market or other exchange of the securities, if any, covered by the applicable prospectus supplement.

We will sell these securities directly to investors, through agents designated from time to time or to or through underwriters or dealers, or through a combination of these methods, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any agents, underwriters or dealers are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents, underwriters or dealers and any applicable fees, commissions, discounts or options to purchase additional securities 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.

We are an "emerging growth company" as defined by the Jumpstart Our Business Startups Act of 2012, and as such, have elected to comply with reduced public company reporting requirements for this prospectus and the documents incorporated by reference herein and may elect to comply with reduced public company reporting requirements in future filings.

Investing in our securities involves a high degree of risk. Before making an investment decision, you should review carefully the risks and uncertainties described under the heading "Risk Factors" on page 6 of this prospectus as well as those contained in the applicable prospectus supplement and in any free writing prospectuses we may authorize for use in connection with a specific offering, and under similar headings in the other documents that are incorporated by reference into 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 date of this prospectus is October 29, 2025.

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ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer and sell any combination of the securities described in this prospectus in one or more offerings up to a total aggregate offering price of \$300,000,000. This prospectus provides you with a general description of the securities we may offer.

Each time we sell securities under this prospectus, we will provide a prospectus supplement that will contain specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in any documents that we have incorporated by reference into this prospectus. You should read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the heading “Incorporation of Certain Information by Reference,” before investing in any of the securities offered.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

Neither we, nor any agent, underwriter or dealer has authorized any person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus, any applicable prospectus supplement or any related free writing prospectus prepared by or on behalf of us or to which we have referred you. This prospectus, any applicable supplement to this prospectus or any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus, any applicable supplement to this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should not assume that the information contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus, any applicable prospectus supplement or any related free writing prospectus is delivered, or securities are sold, on a later date.

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 heading “Where You Can Find More Information.”

PROSPECTUS SUMMARY

This summary highlights selected information from this prospectus and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Unless the context requires otherwise, references in this prospectus to “Spruce,” “the company,” “we,” “us,” “our” or similar terms refer to Spruce Biosciences, Inc.

Company Overview

We are a biopharmaceutical company focused on developing and commercializing novel therapies for neurological disorders with significant unmet medical need. We have a diverse portfolio of product candidates aimed at addressing diseases with high unmet medical need and clear biology for treatment, for which there are either no approved therapies treating the underlying disease or suboptimal treatment options. We were founded in April 2016 and are led by a management team experienced in the development and commercialization of groundbreaking therapeutics.

Implications of Being an Emerging Growth Company and Smaller Reporting Company

We are an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. We may take advantage of certain exemptions from various public company reporting requirements, including not being required to have our internal control over financial reporting audited by our independent registered public accounting firm under Section 404 of the Sarbanes-Oxley Act of 2002 reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments. We may take advantage of these exemptions until December 31, 2025 or until we are no longer an “emerging growth company,” whichever is earlier. We will cease to be an emerging growth company prior to the end of such period if certain earlier events occur, including if we become a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, or Exchange Act, our annual gross revenues exceed \$1.235 billion or we issue more than \$1.0 billion of non-convertible debt in any three-year period.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use this extended transition period under the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act.

We are also a “smaller reporting company” as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company, which would allow us to take advantage of many of the same exemptions available to emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation. We will be able to take advantage of these scaled disclosures for so long as our voting and non-voting common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter.

Corporate Information

We were incorporated in Delaware in April 2016. Our principal executive offices are located 611 Gateway Boulevard, Suite 740 South San Francisco, California 94080, and our telephone number is (415) 655-4168. Our

corporate website address is www.sprucebio.com. Our website and the information contained on, or that can be accessed through, our website will not be deemed to be incorporated by reference in, and are not considered part of, this prospectus.

The Securities We May Offer

We may offer shares of our common stock, shares of our preferred stock, various series of debt securities and warrants to purchase any of such securities, up to a total aggregate offering price of \$300,000,000 from time to time in one or more offerings under this prospectus, together with any applicable prospectus supplement and any related free writing prospectus, at prices and on terms to be determined by market conditions at the time of the relevant offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate principal amount or aggregate offering price;
- maturity, if applicable;
- original issue discount, if any;
- rates and times of payment of interest or dividends, if any;
- redemption, conversion, exchange or sinking fund terms, if any;
- conversion or exchange prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange;
- ranking, if applicable;
- restrictive covenants, if any;
- voting or other rights, if any; and
- important U.S. federal income tax considerations.

The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

We may sell the securities directly to investors or through underwriters, dealers or agents. We, and our underwriters or agents, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities through underwriters or agents, we will include in the applicable prospectus supplement:

- the names of those underwriters or agents;
- applicable fees, discounts and commissions to be paid to them;

- details regarding options to purchase additional securities, if any; and
- the estimated net proceeds to us.

Common Stock. We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote per share for the election of directors and on all other matters that require stockholder approval. Subject to any preferential rights of any then outstanding preferred stock, in the event of our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in the assets remaining after payment of liabilities and the liquidation preferences of any then outstanding preferred stock. Our common stock does not carry any preemptive rights enabling a holder to subscribe for, or receive shares of, our common stock or any other securities convertible into shares of common stock, or any redemption rights.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Under our amended and restated certificate of incorporation, our board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

If we sell any series of preferred stock under this prospectus, we will fix the designations, voting powers, preferences and rights of such series of preferred stock, as well as the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock that we are offering before the issuance of the related series of preferred stock. We urge you to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Debt Securities. We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The senior debt securities will rank equally with any other unsecured and unsubordinated debt. The subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner described in the instrument governing the debt, to all of our senior indebtedness. Convertible debt securities will be convertible into our common stock or preferred stock. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

The debt securities will be issued under one or more documents called indentures, which are contracts between us and a national banking association or other eligible party, as trustee. In this prospectus, we have summarized certain general features of the debt securities. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of debt securities being offered, as well as the complete indentures that contain the terms of the debt securities. A form of indenture has been filed as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from these securities. In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the particular series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants. Forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered have been filed as exhibits to the registration statement of which this prospectus is a part, and

supplemental warrant agreements and forms of warrant certificates will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

We will evidence each series of warrants by warrant certificates that we will issue. Warrants may be issued under an applicable warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if applicable, in the prospectus supplement relating to the particular series of warrants being offered.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties described under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, as updated by our quarterly and other reports and documents that are incorporated by reference into this prospectus, before deciding whether to purchase any of the securities being registered pursuant to the registration statement of which this prospectus is a part. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities, and the occurrence of any of these risks might cause you to lose all or part of your investment. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations. Please also read carefully the section below titled “Special Note Regarding Forward-Looking Statements.”

SELECTED FINANCIAL DATA REFLECTING REVERSE STOCK SPLIT

Reverse Stock Split

On July 23, 2025, we completed a one-for-seventy-five (1:75) reverse stock split of our outstanding common stock, effective as of August 4, 2025, or the Reverse Stock Split. Based on such Reverse Stock Split, the total number of outstanding shares of common stock was adjusted from 42,231,285 to approximately 563,042. The par value per share of the common stock remained unchanged at \$0.0001. Our audited consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2024, and the unaudited condensed consolidated financial statements included in our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2025, which are incorporated by reference into this prospectus, are presented without giving effect to the reverse stock split. Except where the context otherwise requires, share numbers in this prospectus supplement reflect the one-for-seventy-five reverse stock split of our common stock.

The following selected financial data has been derived from our audited consolidated financial statements included in our Annual Report on Form 10-K filed with the SEC on April 15, 2025, and our unaudited condensed consolidated financial statements included in our Quarterly Report on Form 10-Q filed with the SEC on May 6, 2025, as adjusted to reflect the reverse stock split for all periods presented. Our historical results are not indicative of the results that may be expected in the future and results of interim periods are not indicative of the results for the entire year.

AS REPORTED

(in thousands, except share and per share amounts)

	Year Ended December 31,	
	2024	2023
Net loss	\$ (53,036)	\$ (47,919)
Net loss per share, basic and diluted	\$ (1.29)	\$ (1.24)
Weighted-average shares of common stock outstanding, basic and diluted	41,264,948	38,510,220
Shares of common stock outstanding at year end	42,231,285	41,029,832

	Three Months Ended March 31,	
	2025	2024
Net loss	\$ (14,041)	\$ (11,625)
Net loss per share, basic and diluted	\$ (0.32)	\$ (0.28)
Weighted-average shares of common stock outstanding, basic and diluted	43,944,946	41,096,231
Shares of common stock outstanding at period end	42,231,285	41,154,799

AS ADJUSTED FOR 1-FOR-75 REVERSE STOCK SPLIT (unaudited)
(in thousands, except share and per share amounts)

	Year Ended December 31,	
	2024	2023
Net loss	\$ (53,036)	\$ (47,919)
Net loss per share, basic and diluted	\$ (96.40)	\$ (93.33)
Weighted-average shares of common stock outstanding, basic and diluted	550,146	513,427
Shares of common stock outstanding at year end	563,042	547,019

	Three Months Ended March 31,	
	2025	2024
Net loss	\$ (14,041)	\$ (11,625)
Net loss per share, basic and diluted	\$ (23.95)	\$ (21.22)
Weighted-average shares of common stock outstanding, basic and diluted	586,142	547,899
Shares of common stock outstanding at period end	563,042	548,677

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act, and the Private Securities Litigation Reform Act of 1995, as amended, that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus and each prospectus supplement or incorporated by reference in this prospectus and each prospectus supplement, including statements regarding our future results of operations and financial position, business strategy, research and development costs; the anticipated timing, costs and conduct of our clinical trials for our product candidates; the timing and likelihood of regulatory filings and approvals for our product candidates; our ability to commercialize our product candidates, if approved; the pricing and reimbursement of our product candidates, if approved; the potential benefits of strategic collaborations and our ability to enter into strategic arrangements; the timing and likelihood of success, plans and objectives of management for future operations; future results of anticipated product development efforts; and our expected future financing needs, are forward-looking statement. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believes,” “contemplates,” “continue,” “could,” “estimates,” “expect,” “intend,” “may,” “plan,” “potential,” “predicts,” “project,” “should,” “target,” or “will,” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus or the documents incorporated by reference in this prospectus, as applicable, and are subject to a number of risks, uncertainties and assumptions described under the sections in this prospectus and the documents incorporated by reference herein entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this prospectus and the documents incorporated by reference herein. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Accordingly, we qualify all of the forward-looking statements in the foregoing documents by these cautionary statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we undertake no obligation to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. You should, however, read this prospectus, the applicable prospectus supplement, together with the documents we have filed with the SEC that are incorporated by reference herein and therein, and any free writing prospectus we have authorized for use in connection with a specific offering completely and with the understanding that our actual future results may be materially different from what we expect.. See the section titled “Where You Can Find More Information.”

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based on information available to us as of the date of this prospectus, and while we believe such information provides a reasonable basis for these statements, such information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain, and you are cautioned not to unduly rely on these statements.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities offered by us hereby. Except as described in any prospectus supplement or any related free writing prospectus that we may authorize to be provided to you, we currently intend to use the net proceeds from the sale of the securities offered by us hereby for general corporate purposes, including working capital, operating expenses and capital expenditures. We may also use a portion of the net proceeds to acquire or invest in businesses and products that are complementary to our own, although we have no current plans, commitments or agreements with respect to any acquisitions as of the date of this prospectus. We will set forth in the applicable prospectus supplement or any free writing prospectus we may authorize for use in connection with a specific offering our intended use for the net proceeds received from the sale of any securities sold pursuant to the prospectus supplement or free writing prospectus. We intend to invest the net proceeds to us from the sale of securities offered hereby that are not used as described above in a variety of capital preservation investments, including short-term, investment-grade, and interest-bearing instruments.

DESCRIPTION OF CAPITAL STOCK

General

The following description summarizes the terms of our capital stock. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this “Description of Capital Stock,” you should refer to our amended and restated certificate of incorporation and amended and restated bylaws, which are included as exhibits to the registration statement of which this prospectus forms a part, and to the applicable provisions of the Delaware General Corporation Law.

Our amended and restated certificate of incorporation authorizes us to issue 200,000,000 shares of common stock, par value \$0.0001 per share, and 10,000,000 shares of preferred stock, par value \$0.0001 per share. Our board of directors is authorized, without stockholder approval except as required by the listing standards of The Nasdaq Stock Market LLC, to issue additional shares of our capital stock.

Common Stock

Voting Rights

Our common stock is entitled to one vote per share on any matter that is submitted to a vote of our stockholders. Our amended and restated certificate of incorporation does not provide for cumulative voting for the election of directors. Our amended and restated certificate of incorporation establishes a classified board of directors that is divided into three classes with staggered three-year terms. Only the directors in one class will be subject to election by a plurality of the votes cast at each annual meeting of our stockholders, with the directors in the other classes continuing for the remainder of their respective three-year terms.

Economic Rights

Except as otherwise expressly provided in our amended and restated certificate of incorporation or required by applicable law, all shares of common stock have the same rights and privileges and rank equally, share ratably and be identical in all respects for all matters, including those described below.

Dividends. Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and then only at the times and in the amounts that our board of directors may determine.

Liquidation Rights. On our liquidation, dissolution or winding-up, the holders of our common stock will be entitled to share equally, identically and ratably in all assets remaining after the payment of any liabilities, liquidation preferences and accrued or declared but unpaid dividends, if any, with respect to any outstanding preferred stock, unless a different treatment is approved by the affirmative vote of the holders of a majority of the outstanding shares of such affected class, voting separately as a class.

No Preemptive or Similar Rights

The holders of shares of our common stock are not entitled to preemptive rights and are not subject to conversion, redemption or sinking fund provisions.

Preferred Stock

Undesignated Preferred Stock

Under our amended and restated certificate of incorporation, our board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges

of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control that may otherwise benefit holders of our common stock and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. We have no current plans to issue any shares of preferred stock.

Additional Series of Preferred Stock

We will fix the designations, voting powers, preferences and rights of the preferred stock of each series we issue under this prospectus, as well as the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus forms a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that contains the terms of the series of preferred stock we are offering. This description and the applicable prospectus supplement will include:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date, and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provision for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;

- a discussion of any material 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 if we liquidate, dissolve or wind up our affairs;
- any limitations on the issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

When we issue shares of preferred stock under this prospectus, the shares will fully be paid and nonassessable and will not have, or be subject to, any preemptive or similar rights.

Anti-Takeover Provisions

The provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws, which are summarized below, may have the effect of delaying, deferring or discouraging another person from acquiring control of our company. They are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

Certificate of Incorporation and Bylaws

Because our stockholders do not have cumulative voting rights, stockholders holding a majority of the voting power of our shares of common stock are able to elect all of our directors. Our amended and restated certificate of incorporation and our amended and restated bylaws provide that stockholders may only take action at a duly called meeting of stockholders. A special meeting of stockholders may be called by a majority of our board of directors, the chair of our board of directors or our chief executive officer. Our amended and restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors. In accordance with our amended and restated certificate of incorporation, our board of directors is divided into three classes with staggered three-year terms. The affirmative vote of holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of capital stock, voting as a single class, is required to amend certain provisions of our amended and restated certificate of incorporation, including provisions relating to amending our amended and restated bylaws, the classified structure of our board of directors, the size of our board of directors, removal of directors, director liability, vacancies on our board of directors, special meetings, stockholder notices, actions by written consent and exclusive jurisdiction.

The foregoing provisions will make it more difficult for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, subject to certain exceptions. In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Choice of Forum

Our amended and restated certificate of incorporation and amended and restated bylaws provide that the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom shall be the sole and exclusive forum for the following claims or causes of action under the Delaware statutory or common law: (i) any derivative claim or cause of action brought on our behalf; (ii) any claim or cause of action for breach of a fiduciary duty owed by any of our current or former directors, officers or other employees to us or our stockholders; (iii) any claim or cause of action against us or any of our current or former directors, officers or other employees, arising out of or pursuant to any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws; (iv) any claim or cause of action seeking to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws (as each may be amended from time to time, including any right, obligation, or remedy thereunder); (v) any claim or cause of action as to which the Delaware General Corporation Law confers jurisdiction on the Court of Chancery of the State of Delaware; and (vi) any claim or cause of action against us or any of our current or former directors, officers or other employees governed by the internal affairs doctrine, in all cases to the fullest extent permitted by law and subject to the court having personal jurisdiction over the indispensable parties named as defendants; provided these provisions of our amended and restated certificate of incorporation and our amended and restated bylaws will not apply to claims or causes of action brought to enforce a duty or liability created by the Securities Act of 1933, Securities Exchange Act of 1934, as amended, or any other claim for which the federal courts have exclusive jurisdiction. Our amended and restated certificate of incorporation and amended and restated bylaws further provide that, to the fullest extent permitted by law, the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act of 1933, as amended, unless we consent in writing to the selection of an alternative forum. Additionally, our amended and restated certificate of incorporation provides that any person or entity holding, owning or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to these provisions.

Exchange Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol “SPRB.”

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent’s address is 150 Royall Street, Canton, Massachusetts 02021.

DESCRIPTION OF DEBT SECURITIES

We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below.

We will issue the debt securities under either the senior indenture or the subordinated indenture that we will enter into with trustee named in the applicable indenture. If we offer senior debt securities, we will issue them under the senior indenture. If we issue subordinated debt securities, we will issue them under the subordinated indenture. We have filed the forms of indentures as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC. The indentures will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. Unless the context requires otherwise, whenever we refer to the indenture, we are referring to the senior indenture or the subordinated indenture, as applicable, and we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

The following summary of material provisions of the debt securities and the indentures is subject to, and qualified in its entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements and any related free writing prospectuses related to the debt securities that we may offer under this prospectus, as well as the complete indenture that contains the terms of the debt securities.

General

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities up to the principal amount that we may authorize and may be in any currency or currency unit that we may designate. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture 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.

We may issue the debt securities issued under the indenture as “discount securities,” which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may be issued with “original issue discount,” or OID, for U.S. federal income tax purposes because of interest payment and other characteristics or terms of the debt securities. Material U.S. federal income tax considerations applicable to debt securities issued with OID will be described in more detail in any applicable prospectus supplement.

We will describe in the applicable prospectus supplement the terms of the series of debt securities being offered, including:

- the title of the series of debt securities;
- any limit upon the aggregate principal amount that may be issued;
- the maturity date or dates;
- the form of the debt securities of the series;
- the applicability of any guarantees;
- whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

- whether the debt securities rank as senior debt, senior subordinated debt, subordinated debt or any combination thereof, and the terms of any subordination;
- if the price (expressed as a percentage of the aggregate principal amount thereof) at which such debt securities will be issued is a price other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof, or if applicable, the portion of the principal amount of such debt securities that is convertible into another security or the method by which any such portion shall be determined;
- the interest rate or rates, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- if applicable, the date or dates after which, or the period or periods during which, and the price or prices at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;
- the date or dates, if any, on which, and the price or prices at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;
- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;
- any and all terms, if applicable, relating to any auction or remarketing of the debt securities of that series and any security for our obligations with respect to such debt securities and any other terms which may be advisable in connection with the marketing of debt securities of that series;
- whether the debt securities of the series shall be issued in whole or in part in the form of a global security or securities; the terms and conditions, if any, upon which such global security or securities may be exchanged in whole or in part for other individual securities; and the depository for such global security or securities;
- if applicable, the provisions relating to conversion or exchange of any debt securities of the series and the terms and conditions upon which such debt securities will be so convertible or exchangeable, including the conversion or exchange price, as applicable, or how it will be calculated and may be adjusted, any mandatory or optional (at our option or the holders' option) conversion or exchange features, the applicable conversion or exchange period and the manner of settlement for any conversion or exchange;
- if other than the full principal amount thereof, the portion of the principal amount of debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;
- additions to or changes in the covenants applicable to the particular debt securities being issued, including, among others, the consolidation, merger or sale covenant;
- additions to or changes in the events of default with respect to the securities and any change in the right of the trustee or the holders to declare the principal, premium, if any, and interest, if any, with respect to such securities to be due and payable;

- additions to or changes in or deletions of the provisions relating to covenant defeasance and legal defeasance;
- additions to or changes in the provisions relating to satisfaction and discharge of the indenture;
- additions to or changes in the provisions relating to the modification of the indenture both with and without the consent of holders of debt securities issued under the indenture;
- the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars;
- whether interest will be payable in cash or additional debt securities at our or the holders' option and the terms and conditions upon which the election may be made;
- the terms and conditions, if any, upon which we will pay amounts in addition to the stated interest, premium, if any and principal amounts of the debt securities of the series to any holder that is not a "United States person" for federal tax purposes;
- any restrictions on transfer, sale or assignment of the debt securities of the series; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, any other additions or changes in the provisions of the indenture, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to settlement upon conversion or exchange and whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indenture will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of our assets as an entirety or substantially as an entirety. However, any successor to or acquirer of such assets (other than a subsidiary of ours) must assume all of our obligations under the indenture or the debt securities, as appropriate.

Events of Default under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

- if we fail to pay any installment of interest on any series of debt securities, as and when the same shall become due and payable, and such default continues for a period of 90 days; provided, however, that a valid extension of an interest payment period by us in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of interest for this purpose;
- if we fail to pay the principal of, or premium, if any, on any series of debt securities as and when the same shall become due and payable whether at maturity, upon redemption, by declaration or otherwise, or in any payment required by any sinking or analogous fund established with respect to such series; provided, however, that a valid extension of the maturity of such debt securities in accordance with the

terms of any indenture supplemental thereto shall not constitute a default in the payment of principal or premium, if any;

- if we fail to observe or perform any other covenant or agreement contained in the debt securities or the indenture, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive written notice of such failure, requiring the same to be remedied and stating that such is a notice of default thereunder, from the trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and
- if specified events of bankruptcy, insolvency or reorganization occur.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indenture, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies only if:

- the holder has given written notice to the trustee of a continuing event of default with respect to that series;
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request,
- such holders have offered to the trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred by the trustee in compliance with the request; and
- the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indenture.

Modification of Indenture; Waiver

We and the trustee may change an indenture without the consent of any holders with respect to specific matters:

- to cure any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;
- to comply with the provisions described above under “Description of Debt Securities—Consolidation, Merger or Sale;”
- to provide for uncertificated debt securities in addition to or in place of certificated debt securities;
- to add to our covenants, restrictions, conditions or provisions such new covenants, restrictions, conditions or provisions for the benefit of the holders of all or any series of debt securities, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred upon us in the indenture;
- to add to, delete from or revise the conditions, limitations, and restrictions on the authorized amount, terms, or purposes of issue, authentication and delivery of debt securities, as set forth in the indenture;
- to make any change that does not adversely affect the interests of any holder of debt securities of any series in any material respect;
- to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series as provided above under “Description of Debt Securities—General” to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;
- to evidence and provide for the acceptance of appointment under any indenture by a successor trustee; or
- to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

- extending the fixed maturity of any debt securities of any series;
- reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any series of any debt securities; or
- reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including obligations to:

- provide for payment;
- register the transfer or exchange of debt securities of the series;
- replace stolen, lost or mutilated debt securities of the series;
- pay principal of and premium and interest on any debt securities of the series;
- maintain paying agencies;
- hold monies for payment in trust;
- recover excess money held by the trustee;
- compensate and indemnify the trustee; and
- appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we provide otherwise in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, or DTC, or another depository named by us and identified in the applicable prospectus supplement with respect to that series. To the extent the debt securities of a series are issued in global form and as book-entry, a description of terms relating to any book-entry securities will be set forth in the applicable prospectus supplement.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will impose no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in the applicable prospectus supplement, we will designate the corporate trust office of the trustee as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indenture and the debt securities will be governed by and construed in accordance with the internal laws of the State of New York, except to the extent that the Trust Indenture Act of 1939 is applicable.

Provisions Relating only to the Subordinated Debt Securities

The subordinated debt securities will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The indentures in the forms initially filed as exhibits to the registration statement of which this prospectus is a part do not limit the amount of indebtedness which we may incur, including senior indebtedness or subordinated indebtedness, and do not limit us from issuing any other debt, including secured debt or unsecured debt.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements and free writing prospectuses, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may consist of warrants to purchase common stock, preferred stock or debt securities and may be issued in one or more series. Warrants may be issued independently or together with common stock, preferred stock or debt securities offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants that we may offer in more detail in the applicable prospectus supplement and any applicable free writing prospectus. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness.

We have filed forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, if any, including a form of warrant certificate, that describes the terms of the particular series of warrants we are offering. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplement the terms relating to a series of warrants being offered, including:

- the title of such securities;
- the offering price or prices and aggregate number of warrants offered;
- the currency or currencies for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- if applicable, the minimum or maximum amount of such warrants which may be exercised at any one time;
- in the case of warrants to purchase common stock, the number of shares of common stock purchasable upon the exercise of one warrant and the price at which, and the currency in which, these shares may be purchased upon such exercise;
- in the case of warrants to purchase preferred stock, the number of shares of preferred stock purchasable upon the exercise of one warrant and the price at which, and the currency in which, these shares may be purchased upon such exercise;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at which, and currency in which, this principal amount of debt securities may be purchased upon such exercise;

- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
- the terms of any rights to redeem or call the warrants;
- the terms of any rights to force exercise of the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;
- a discussion of any material or special U.S. federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

- in the case of warrants to purchase common stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any;
- in the case of warrants to purchase preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any; or
- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent in connection with the exercise of the warrant.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants.

If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements, and any claim, controversy or dispute arising under or related to the warrants or warrant agreements, will be governed by and construed in accordance with the laws of the State of New York.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee, depositary or warrant agent maintain for this purpose as the “holders” of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as “indirect holders” of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depositary on behalf of other financial institutions that participate in the depositary’s book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Securities issued in global form will be registered in the name of the depositary or its participants. Consequently, for securities issued in global form, we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a book-entry security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary’s book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not legal holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities in non-global form. In these cases, investors may choose to hold their securities in their own names or in “street name.” Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we or any applicable trustee or depositary will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we or any such trustee or depositary will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee or third party employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the legal holder, we have no further responsibility for the payment or notice even if that legal holder is required, under agreements with its participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the

holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of an indenture, or for other purposes. In such an event, we would seek approval only from the legal holders, and not the indirect holders, of the securities. Whether and how the legal holders contact the indirect holders is up to the legal holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form because the securities are represented by one or more global securities or in street name, you should check with your own institution to find out:

- the performance of third-party service providers;
- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders' consent, if ever required;
- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;
- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
- if the securities are in book-entry form, how the depositary's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depositary. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we issue to, deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depositary. Unless we specify otherwise in the applicable prospectus supplement, DTC will be the depositary for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depositary, its nominee or a successor depositary, unless special termination situations arise. We describe those situations below under the section titled “-Special Situations When a Global Security Will Be Terminated.” As a result of these arrangements, the depositary, or its nominee, will be the sole registered owner and legal holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depositary or with another institution that does. Thus, an investor whose security is represented by a global security will not be a legal holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued as a global security, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depositary, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depositary that holds the global security.

If securities are issued only in the form of a global security, an investor should be aware of the following:

- an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;
- an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;
- an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- an investor may not be able to pledge his or her interest in the global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;
- the depositary's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in the global security;
- we and any applicable trustee have no responsibility for any aspect of the depositary's actions or for its records of ownership interests in the global security, nor will we or any applicable trustee supervise the depositary in any way;
- the depositary may, and we understand that DTC will, require that those who purchase and sell interests in the global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and
- financial institutions that participate in the depositary's book-entry system, and through which an investor holds its interest in the global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, a global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks, brokers or other financial institutions to find out how to have their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

Unless we provide otherwise in the applicable prospectus supplement, a global security will terminate when the following special situations occur:

- if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;
- if we notify any applicable trustee that we wish to terminate that global security; or

- if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the applicable prospectus supplement. When a global security terminates, the depositary, not us or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities covered hereby from time to time pursuant to underwritten public offerings, direct sales to the public, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through one or more underwriters or dealers (acting as principal or agent), through agents, or directly to one or more purchasers. We may distribute 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 also sell equity securities covered by this registration statement in an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act. Such offering may be made into an existing trading market for such securities in transactions at other than a fixed price, either:

- on or through the facilities of the Nasdaq Capital Market or any other securities exchange or quotation or trading service on which such securities may be listed, quoted or traded at the time of sale; and/or
- to or through a market maker other than on the Nasdaq Capital Market or such other securities exchanges or quotation or trading services.

Such at-the-market offerings, if any, may be conducted by underwriters acting as principal or agent.

A prospectus supplement or supplements (and any related free writing prospectus that we may authorize to be provided to you) will describe the terms of the offering of the securities, including, to the extent applicable:

- the name or names of any underwriters, dealers or agents, if any;
- the purchase price of the securities or other consideration therefor, and the proceeds, if any, we will receive from the sale;
- any options pursuant to which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents’ or underwriters’ compensation;
- any public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement. Dealers and agents participating in the distribution of the securities may be deemed to be underwriters, and compensation received by them on resale of the securities may be deemed to be underwriting discounts. If such dealers or agents were deemed to be underwriters, they may be subject to statutory liabilities under the Securities Act.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined

at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any option to purchase additional shares or other option. If a dealer is used in the sale of securities, we or an underwriter will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. To the extent required, we will set forth in the prospectus supplement the name of the dealer and the terms of the transaction. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters, dealers or agents with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, dealer or agent, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities, and we will describe any commissions and other compensation we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

We may provide agents, underwriters and dealers with indemnification against civil liabilities related to this offering, including liabilities under the Securities Act, or contribution with respect to payments that the agents, underwriters or dealers may make with respect to these liabilities. Agents, underwriters and dealer, or their affiliates, may engage in transactions with, or perform services for, us in the ordinary course of business.

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any agents or underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities. There is currently no market for any of the offered securities, other than our common stock which is listed on the Nasdaq Capital Market. We have no current plans for listing of the preferred stock, debt securities or warrants on any securities exchange or quotation system; any such listing with respect to any particular preferred stock, debt securities or warrants will be described in the applicable prospectus supplement or other offering materials, as the case may be.

Any underwriter may engage in overallotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Rule 103 of Regulation M under the Exchange Act. Overallotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. These transactions may be effected on any exchange or over-the-counter market or otherwise.

Any agents and underwriters who are qualified market makers on the Nasdaq Capital Market may engage in passive market making transactions in the securities on the Nasdaq Capital Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and the applicable prospectus supplement.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, certain legal matters in connection with the offering and the validity of the securities offered by this prospectus, and any supplement thereto, will be passed upon by Cooley LLP, Santa Monica, California.

EXPERTS

The financial statements of Spruce Biosciences, Inc. (the Company) as of December 31, 2024 and 2023 and for the years then ended incorporated by reference in this prospectus and in the registration statement have been so incorporated in reliance on the report of BDO USA, P.C., an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting. The report on the financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. Neither we nor any agent, underwriter or dealer has authorized any person to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of the securities offered by this prospectus.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including our company, Spruce Biosciences, Inc. The address of the SEC website is www.sec.gov.

Copies of certain information filed by us with the SEC are also available on our website at www.sprucebio.com. Information contained in or accessible through our website does not constitute a part of this prospectus and is not incorporated by reference into this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We also incorporate by reference into this prospectus the documents listed below and any future filings made by us with the SEC (other than Current Reports or portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items and other portions of documents that are furnished, but not filed, pursuant to applicable rules promulgated by the SEC) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part but prior to the effectiveness of such registration statement, until we file a post-effective amendment that indicates the termination of all offerings of securities covered by this prospectus:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2024, filed with the SEC on April 15, 2025;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2025 and June 30, 2025, filed with the SEC on [May 6, 2025](#) and [August 14, 2025](#), respectively;

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- our Current Reports on Form 8-K filed with the SEC on [April 25, 2025](#), [May 29, 2025](#), [June 12, 2025](#), [July 24, 2025](#), [October 8, 2025](#) and [October 17, 2025](#) (each to the extent the information in such reports is filed and not furnished); and
- the description of our common stock in our registration statement on [Form 8-A](#) filed with the SEC on October 5, 2020, including any amendments or reports filed for the purpose of updating such description, including [Exhibit 4.4](#) to the Annual Report on Form 10-K for the year ended December 31, 2020, which was filed with the SEC on March 22, 2021.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents by writing us 611 Gateway Boulevard, Suite 740 South San Francisco, California 94080, or by telephoning us at (415) 655-4168.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.



1,150,000 Shares of Common Stock

Pre-Funded Warrants to Purchase 50,000 Shares of Common Stock

PROSPECTUS SUPPLEMENT

Joint Bookrunning Managers

Leerink Partners

Guggenheim Securities

Oppenheimer & Co.

Co-Managers

Jones

Craig-Hallum

April 20, 2026
