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

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**Amendment No. 1**  
**to**  
**FORM S-3**  
**REGISTRATION STATEMENT**  
*UNDER*  
*THE SECURITIES ACT OF 1933*

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**SAB BIOTHERAPEUTICS, INC.**  
(Exact Name Of Registrant As Specified In Its Charter)

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

**85-3899721**  
(I.R.S. Employer  
Identification No.)

**777 W 41st St.; Suite 401**  
**Miami Beach, FL 33140**  
**Telephone: (305)-845-2813**  
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**Samuel J. Reich**  
**Chief Executive Officer**  
**SAB Biotherapeutics, Inc.**  
**777 W 41<sup>st</sup> St., Suite 401**  
**Miami Beach, Florida 33140**  
**(305)-845-2813**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copy to:*  
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**Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement as determined by the selling stockholders.**

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

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**The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

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

**SUBJECT TO COMPLETION, PRELIMINARY PROSPECTUS DATED SEPTEMBER 22, 2025**



## **Up to 250,000,000 Shares of Common Stock Offered by the Selling Stockholders**

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This prospectus relates to the offer and resale, from time to time, by the selling stockholders named under the heading “Selling Stockholders” in this prospectus, or their donees, pledgees, assignees, transferees or other successors-in-interest (the “Selling Stockholders”), of up to 250,000,000 shares of the Company’s common stock, par value \$0.0001 per share (the “Common Stock”) which consists of (i) 100,000,000 shares of Common Stock issuable upon conversion of 1,000,000 shares (the “Shares”) of the Company’s Series B Convertible Preferred Stock, par value \$0.0001 per share (the “Series B Preferred Stock”), (ii) 100,000,000 shares of Common Stock, issuable upon conversion of 1,000,000 shares of Series B Preferred Stock (the “Enrollment Date Warrant Shares”) which are issuable upon exercise of Enrollment Date Series B Preferred Stock Purchase Warrants (the “Enrollment Date Warrants”), and (iii) 50,000,000 shares of Common Stock issuable upon conversion of 500,000 shares of Series B Preferred Stock (the “Release Date Warrant Shares”, and together with the Enrollment Date Warrant Shares, the “Warrant Shares”) which are issuable upon exercise of Release Date Series B Preferred Stock Purchase Warrants (the “Release Date Warrants”, and together with the Enrollment Date Warrants, the “Warrants”). The Shares, Enrollment Date Warrant Shares, and Release Date Warrant Shares are collectively referred to herein as the “Series B Shares.” The shares of Common Stock being registered under this prospectus, which consist of the shares of Common Stock issuable upon conversion of the Series B Shares, are collectively referred to as the “Resale Shares.”

We are registering the offer and sale of the Resale Shares held by the Selling Stockholders to satisfy the registration rights granted pursuant to the Registration Rights Agreement (as defined below). While we will not receive any proceeds from the sale of the Resale Shares by the Selling Stockholders, we will receive proceeds from the exercise of any Warrants for cash.

Our registration of the Resale Shares covered by this prospectus does not mean that the Selling Stockholders will offer or sell such Resale Shares. The Selling Stockholders may sell the Resale Shares covered by this prospectus in a number of different ways and at varying prices. For additional information on the possible methods of sale that may be used by the Selling Stockholders, you should refer to the section of this prospectus entitled “Plan of Distribution.” The Selling Stockholders may, individually but not severally, be deemed to be an “underwriter” within the meaning of the Securities Act of 1933, as amended (the “Securities Act”), of the Resale Shares that they are offering pursuant to this prospectus. The Selling Stockholders will bear all commissions and discounts, if any, attributable to their respective sales of the Resale Shares hereunder. We will bear all costs, expenses and fees in connection with the registration of the Resale Shares. We will not be paying any underwriting discounts or commissions in this offering.

The Resale Shares represent a substantial percentage of our total outstanding Common Stock as of the date of this prospectus. The Resale Shares being offered for resale in this prospectus represent 2,401.29% of our current

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total outstanding Common Stock, because a significant portion of the Resale Shares being registered under this prospectus represents shares that will be issued upon the exercise of Warrants and the conversion of our Series B Preferred Stock. Such shares of Common Stock will represent a substantial portion of our outstanding capital stock. If the Warrants are exercised and the Series B Preferred Stock is converted into Common Stock, it will reflect the issuance of 2,401.29% of our outstanding shares of Common Stock as of September 18, 2025. See “*Risk Factors — The sale of the securities registered for resale hereunder and future sales of substantial amounts of our securities in the public market (including the shares of Common Stock issuable upon conversion of Series B Shares), or the perception that such sales may occur, may cause the market price of our securities to decline significantly*” for more information.

A prospectus supplement may add, update, or change information contained in this prospectus. You should carefully read this prospectus, any applicable prospectus supplement, and the information incorporated by reference in this prospectus and any applicable prospectus supplement before you make your investment decision.

Our Common Stock is traded on The Nasdaq Capital Market under the symbol “SABS”. On September 18, 2025, the closing price for our Common Stock, as reported on The Nasdaq Capital Market, was \$2.79 per share. The Series B Preferred Stock is not listed on a national securities and exchange and we do not intend to list the Series B Preferred Stock for trading on a national securities exchange.

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**Investing in these securities involves certain risks. See “Risk Factors” on page 5 of this prospectus. See also “Risk Factors” in the documents incorporated by reference in this prospectus for a discussion of the factors you should carefully consider before deciding to purchase these securities.**

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

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**The date of this prospectus is                      , 2025**

## TABLE OF CONTENTS

	<b>Page</b>
<a href="#"><u>ABOUT THIS PROSPECTUS</u></a>	i
<a href="#"><u>PROSPECTUS SUMMARY</u></a>	1
<a href="#"><u>THE OFFERING</u></a>	4
<a href="#"><u>RISK FACTORS</u></a>	5
<a href="#"><u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u></a>	6
<a href="#"><u>USE OF PROCEEDS</u></a>	8
<a href="#"><u>SELLING STOCKHOLDERS</u></a>	9
<a href="#"><u>PLAN OF DISTRIBUTION</u></a>	14
<a href="#"><u>LEGAL MATTERS</u></a>	15
<a href="#"><u>EXPERTS</u></a>	16
<a href="#"><u>WHERE YOU CAN FIND MORE INFORMATION</u></a>	16
<a href="#"><u>INCORPORATION OF CERTAIN INFORMATION BY REFERENCE</u></a>	17
<a href="#"><u>PART II INFORMATION NOT REQUIRED IN PROSPECTUS</u></a>	II-1

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3, which we have filed with the Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. Under this shelf registration process, the Selling Stockholders may from time to time sell the Resale Shares described in this prospectus in one or more offerings or otherwise as described under “Plan of Distribution.”

This prospectus may be supplemented from time to time by one or more prospectus supplements. Such prospectus supplements may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement, you must rely on the information in the prospectus supplement. You should carefully read both this prospectus and any applicable prospectus supplement together with additional information described under the heading “Where You Can Find More Information” before deciding to invest in any Resale Shares being offered hereby.

Neither we nor the Selling Stockholders have authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus or in any applicable prospectus supplement or any applicable free writing prospectus that we have authorized. If anyone provides, or has provided you, with different or inconsistent information, you should not rely on it. The Resale Shares are not being offered in any jurisdiction where the offer is not permitted. You should not assume that the information contained in or incorporated by reference in this prospectus is accurate as of any date other than the respective dates of such document. Our business, financial condition, results of operations and prospects may have changed since those dates.

Unless the context otherwise indicates, references in this prospectus to, “SAB Biotherapeutics,” “SAB,” the “Company,” “we,” “us” and “our” refer to SAB Biotherapeutics, Inc. and its wholly owned subsidiaries. The term “Selling Stockholders” refers, collectively, to the selling stockholders named under the heading “Selling Stockholders” in this prospectus.

When we refer to the Selling Stockholders in this prospectus, we are referring to the persons names as the Selling Stockholders in this prospectus and, as applicable, any donees, pledgees, assignees, transferees or other successors-in-interest selling the Resale Shares received after the date of this prospectus from the Selling Stockholders as a gift, pledge, or other non-sale related transfer.

## TRADEMARKS

We and our subsidiaries own or have rights to trademarks, trade names and service marks that they use in connection with the operation of their business. In addition, their names, logos and website names and addresses are their trademarks or service marks. Other trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners. Solely for convenience, in some cases, the trademarks, trade names and service marks referred to in this prospectus are listed without the applicable ®, ™ and SM symbols, but they will assert, to the fullest extent under applicable law, their rights to these trademarks, trade names and service marks.

## PROSPECTUS SUMMARY

This prospectus summary highlights certain information about us and selected information contained elsewhere in or incorporated by reference into this prospectus. This prospectus summary is not complete and does not contain all of the information that you should consider before making an investment decision. For a more complete understanding of the Company, you should read and consider carefully the more detailed information included or incorporated by reference in this prospectus and any applicable prospectus supplement or amendment, including the factors described under the heading “Risk Factors,” beginning on page 5 of this prospectus, as well as the information incorporated herein by reference, before making an investment decision.

### Business Overview

We are a clinical-stage biopharmaceutical company focused on the development of human polyclonal immunotherapeutic antibodies, or human immunoglobulin G (hIgG), to address immunology disorders. Our programs are based on mechanisms of action that have achieved proof-of-concept in clinical trials in indications with significant unmet medical needs. We are focused on developing product candidates for disease targets where a differentiated approach has the greatest potential to be either first-in-class against novel targets or best-in-class against complex targets to treat diseases, including type 1 diabetes (T1D) and other autoimmune disorders. Our internally discovered antibodies are both target-specific and polyclonal, meaning they are comprised of multiple hIgG and can bind to multiple sites on targeted immunogens, making them ideally suited to address the complexities associated with many immune-mediated disorders. Our proprietary platform holds the potential to generate additional novel therapeutic candidates to expand our pipeline, utilizing the human immune response to generate the optimal repertoire of hIgG for drug targets of interest. We believe it is the only technology capable of producing disease-targeted, hIgG in large quantities without the need for human plasma donors. We have optimized genetic engineering in the development of transchromosomal cattle, or Tc Bovine, which produce hIgG. Our engineering of our production platform drives IgG1 production across our pipeline. In addition, this differentiated approach using polyclonal antibodies has no biosimilar pathway, which provides a significant barrier to competitive polyclonal approaches. Our wholly owned lead product candidate, SAB-142 is a human anti-thymocyte globulin (ATG) focused on preventing or delaying the progression of T1D. SAB-142 is a first-in-class, human, multi-target ATG treatment designed to provide superior efficacy and safety in delaying the onset or progression of T1D. SAB-142 is expected to reduce autoimmune  $\beta$ -cell destruction and delay progression or onset of T1D in patients with Stage 3 or Stage 2 T1D, respectively. The mechanism of action of SAB-142 has been clinically validated in numerous clinical trials with a rabbit anti-thymocyte globulin (rATG). In addition, data from more than 700 human subjects treated with antibodies produced by our platform support expectation of a zero-serum sickness rate and zero incidence of neutralizing anti-drug antibodies (ADA) within the upcoming SAB-142 clinical trials. There is an established regulatory path for T1D indications using the SAB-142 modality. Our regulatory pathway has also been established with the United States Food and Drug Administration (FDA) as well as United Kingdom Medicines and Healthcare products Regulatory Agency (MHRA) and Therapeutic Goods Administration (TGA) in Australia. The FDA regulates polyclonal hIgG and mAbs differently, as mAbs are regulated through the Center for Drug Evaluation and Research (CDER) while pAbs are regulated by CBER. CBER has approved over 36 immunoglobulin products from both human- and animal-derived plasma. Further, CBER is very familiar with our production platform and pAb products. We have navigated three SAB drug products through seven clinical trials with one product having advanced to Phase 3, building our safety database as well as positive efficacy data. As our lead program SAB-142 advances, we intend to expand our pipeline in complementary indications through strategic utilization of our platform. We recently received an Investigational New Drug (IND) clearance from the FDA in May 2024 and announced positive topline data from our Phase 1 clinical trial of SAB-142 in January 2025. Next, we intend to advance SAB-142 into a Phase 2b clinical trial called the SAFEGUARD study which is anticipated to initiate mid-year 2025.

## Recent Milestones

### *SAB-142 Phase 1 Trial*

In January 2025, we announced positive topline data from a Phase 1 trial of SAB-142 in a single-ascending dose among healthy volunteers. The study met its primary objectives related to safety and pharmacodynamic activity enabling SAB-142 to advance to Phase 2b clinical development. The SAB-142 Phase 1 trial was designed as a randomized, double-blind, placebo-controlled, single-ascending dose, adaptive design clinical study among healthy volunteers and one cohort of participants with T1D. The objectives include establishing the safety, tolerability, pharmacokinetic (PK), immunogenicity and pharmacodynamic (PD) profile for SAB-142.

The topline results reported today showed the following outcomes among healthy volunteer cohorts:

- **Favorable Safety Profile:** SAB-142 was generally well-tolerated and demonstrated a favorable safety profile that supports the chronic dosing of SAB-142 in an ambulatory setting.
  - The SAB-142 Phase 1 dose range was between 0.03mg/kg up to 2.5mg/kg, which demonstrated favorable safety profile based on the 0% reported serum sickness and anti-drug antibodies.
- **Sustained Immunomodulation:** SAB-142 demonstrated a clinically validated multi-target MOA with sustained immunomodulation.
- **MoA Analogous to Rabbit ATG:** The mechanism of action (MoA) of SAB-142 was shown to be analogous to rabbit ATG.
  - The SAB-142 MoA was shown to be analogous to rabbit ATG across multiple parameters correlative to C-peptide preservation.

### *July 2025 Private Placement*

On July 21, 2025, we entered into a securities purchase agreement (the “Securities Purchase Agreement”) with certain accredited investors (the “Investors”), pursuant to which we sold, in a private placement (the “Offering”) (i) 1,000,000 shares of Series B Preferred Stock, (ii) Enrollment Date Warrants to purchase up to 1,000,000 shares of Series B Preferred Stock, and (iii) Release Date Warrants to purchase up to 500,000 shares of Series B Preferred Stock.

Pursuant to the Certificate of Designations of Preferences, Rights and Limitations of the Series B Convertible Preferred Stock (the “Certificate of Designations”), each share of Series B Preferred Stock, subject to the Stockholder Approval (as defined below), is convertible at the option of the holder into shares of Common Stock at a conversion price of \$1.75 per share of Common Stock, subject to certain adjustments as set forth in the Certificate of Designations (the “Conversion Price”). The Conversion Price is a component in the formula that will be used to calculate the number of shares of Common Stock issuable upon conversion of the Series B Preferred Stock, and it does not represent additional consideration to be paid by preferred stockholders for such conversion. Pursuant to the Certificate of Designations, the Conversion Price is subject to adjustments for certain stock dividends and stock splits, reclassifications, exchanges or substitutions, and certain reorganizations, recapitalizations, consolidations or mergers. Based on an initial Conversion Price of \$1.75, each share of Series B Preferred Stock will initially be convertible into 100 shares of Common Stock. Subject to the terms and limitations contained in the Certificate of Designations, the Series B Preferred Stock will not become convertible until the Company’s stockholders approve the issuance of all shares of Common Stock issuable upon conversion of the Series B Preferred Stock (inclusive of the maximum number of shares of Series B Preferred Stock issuable upon exercise of the Warrants) (the “Stockholder Approval”) at a special meeting of stockholders, to be held in accordance with the terms of the Securities Purchase Agreement (the “Special Meeting”). Upon receipt of Stockholder Approval, each share of Series B Preferred Stock will convert automatically into such number of shares of Common Stock equal to the quotient of (A) \$175.00, plus all declared and unpaid dividends, divided by (B) the Conversion Price, rounded down to the nearest whole share of Common Stock, subject to a conversion cap that limits the conversion of the Series B Preferred Stock such that an Investor may not beneficially own more than 4.99% (the “Maximum Percentage”) of the shares of Common Stock that would be issued and outstanding following such conversion. An Investor may decrease or increase the Maximum Percentage by written notice to the Company from time to time to any other

percentage not in excess of 19.99%, provided that any increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company. We have called a special meeting of stockholders to seek Stockholder Approval, on or about September 26, 2025.

Each whole Share was accompanied by one Enrollment Date Warrant and one-half of one Release Date Warrant. The purchase price for each Share and accompanying Warrants was \$175. Each Enrollment Date Warrant is exercisable at a price of \$175 per share beginning upon receipt of the Stockholder Approval until the earlier of (x) five years from the date of issuance and (y) 30 trading days following notice of the Phase II Enrollment Date (as defined in the Enrollment Date Warrant). Each Release Date Warrant is exercisable at a price of \$218.75 per share beginning upon receipt of the Stockholder Approval until the earlier of (x) five years from the date of issuance and (y) 30 trading days following notice of the Phase II Release Date (as defined in the Release Date Warrant). The Resale Shares are being registered pursuant to the terms of the registration rights agreement, entered into with the Investors at the same time as the Purchase Agreement (the "Registration Rights Agreement").

### **Corporate Information**

We were incorporated in the State of Delaware on November 12, 2020, as a special purpose acquisition company under the name Big Cypress Acquisition Corp. ("BCYP"). On January 14, 2021, BCYP completed its initial public offering. On October 22, 2021, BCYP consummated a business combination with SAB Biotherapeutics, Inc. (the "Business Combination"), which changed its name to SAB Sciences, Inc. In connection with the closing of the business combination, BCYP changed its name to SAB Biotherapeutics, Inc. and SAB Sciences, Inc. became a subsidiary of SAB Biotherapeutics, Inc.

Our principal executive offices are located at 777 W 41st St., Suite 401 Miami Beach, Florida 33140, and our telephone number is (305)-845-2813. Our website is located at <https://www.sab.bio>. We do not incorporate by reference into this prospectus the information on, or accessible through, our website. Our common stock trades on The Nasdaq Capital Market under the symbol "SABS".

## THE OFFERING

Common Stock offered by the Selling Stockholders	Up to 250,000,000 shares of Common Stock, which consists of (i) 100,000,000 shares of Common Stock issuable upon conversion of the Shares, (ii) up to 100,000,000 shares of Common Stock, issuable upon conversion of Enrollment Date Warrant Shares, and (iii) up to 50,000,000 shares of Common Stock issuable upon conversion of Release Date Warrant Shares. See the section of this prospectus titled “ <i>Selling Stockholders</i> ” for more information.
Use of Proceeds	We will not receive any of the proceeds from the sale of the Resale Shares covered by this prospectus, except with respect to amounts received by us due to the exercise of any Warrants for cash. We intend to use the proceeds from the exercise of any Warrants for cash for working capital and general corporate purposes. See the section of this prospectus titled “Use of Proceeds” for more information.
Risk Factors	Investing in our Common Stock involves a high degree of risk. For a discussion of factors to consider before deciding to invest in our Common Stock, you should carefully review and consider the “Risk Factors” section of this prospectus, as well as the risk factors described or referred to in any documents incorporated by reference in this prospectus, and in any applicable prospectus supplement or amendment.
Nasdaq Capital Market Symbol	“SABS”.

## RISK FACTORS

Investing in our Common Stock involves a high degree of risk. Before deciding whether to invest in our Common Stock, you should consider carefully the risks and uncertainties discussed in this section and under the sections titled Risk Factors contained in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q for the quarterly periods ended subsequent to our filing of such Annual Report on Form 10-K, as well as any amendments or updates to our risk factors reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus, together with other information in this prospectus, the documents incorporated by reference, any prospectus supplement and any free writing prospectus that we may authorize. These risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us, or that we currently view as immaterial, may also impair our business. If any of the risks or uncertainties described in our SEC filings or any additional risks and uncertainties actually occur, our business, financial condition, results of operations and cash flow could be materially and adversely affected. In that case, the trading price of our Common Stock could decline and you might lose all or part of your investment. Please also read carefully the section titled “Cautionary Note Regarding Forward-Looking Statements.”

### **Risks Related to this Offering by the Selling Stockholders**

*The sale of the securities registered for resale hereunder and future sales of substantial amounts of our securities in the public market (including the shares of Common Stock issuable upon conversion of Series B Shares), or the perception that such sales may occur, may cause the market price of our securities to decline significantly.*

The shares of Common Stock offered for resale by the Selling Stockholders in this prospectus represent approximately 2,401.29% of total Common Stock outstanding as of September 18, 2025. The amount of Common Stock offered for resale by the Selling Stockholders exceeds the number of shares of Common Stock currently outstanding because a significant portion of the shares of Common Stock offered for resale are not currently outstanding and are issuable upon the conversion of the Series B Shares into shares of Common Stock. The sale of these securities in the public market, or the perception that holders of a large number of securities intend to sell their securities, could reduce the market price of our Common Stock and public warrants.

Although each stockholder for whom the shares of Common Stock registered for resale hereunder is not permitted to convert their Series B Shares into shares of Common Stock to the extent that after giving effect to such conversion, such holder would (together with such holder’s affiliates and related parties) beneficially own in excess of 4.99% (or 9.99% at the election of the holder) of the shares of Common Stock outstanding immediately after giving effect to such conversion, the market price of our Common Stock could decline if the holders of such shares sell them over time or are perceived by the market as intending to sell them.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, and the documents incorporated by reference herein, contain, or will contain, “forward-looking statements” within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act of 1934, as amended (the “Exchange Act”). Forward-looking statements can be identified by words such as “intends,” “believes,” “anticipates,” “indicates,” “plans,” “expects,” “suggests,” “may,” “would,” “should,” “potential,” “designed to,” “will,” “ongoing,” “estimate,” “forecast,” “predict,” “could,” and similar references, although not all forward-looking statements contain these words. Forward-looking statements are neither historical facts nor assurances of future performance. These statements are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Risks that could cause actual results to vary from expected results expressed in our forward-looking statements include, but are not limited to:

- the success, cost and timing of our product development activities and clinical trials, including statements regarding our plans for clinical development of our product candidates, the initiation and completion of clinical trials and related preparatory work and the expected timing of the availability of results of clinical trials;
- our ability to recruit and enroll suitable patients in our clinical trials;
- the potential indications, attributes and benefits of our product candidates;
- our ability to obtain and maintain regulatory approval for our product candidates, and any related restrictions, limitations or warnings in the label of an approved product candidate;
- our ability to obtain funding for our operations, including funding necessary to complete further development, approval and, if approved, commercialization of our product candidates;
- the period over which we anticipate our existing cash and cash equivalents will be sufficient to fund our operating expense and capital expenditure requirements;
- the potential for our business development efforts to maximize the potential value of our portfolio;
- our ability to identify, in-license or acquire additional product candidates;
- our ability to compete with other companies currently marketing or engaged in the development of treatments for the indications that we are pursuing for our product candidates;
- our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidates and the duration of such protection;
- our ability to contract with and rely on third parties to assist in conducting our clinical trials and manufacturing our product candidates;
- our manufacturing capabilities, third-party contractor capabilities and strategy;
- our plans related to manufacturing, supply and other collaborative agreements;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets, either alone or in partnership with others;
- the rate and degree of market acceptance of our product candidates, if approved;
- the pricing and reimbursement of our product candidates, if approved;
- regulatory developments in the United States and foreign countries;
- the impact of laws, regulations, accounting standards, regulatory requirements, judicial decisions and guidance issued by authoritative bodies;
- our ability to attract and retain key scientific, medical, commercial or management personnel;

- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our financial performance;
- our ability to maintain our listing on The Nasdaq Capital Market;
- our ability to continue as a going concern;
- any other factors discussed under the headings “Business,” “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q for the quarterly periods ended subsequent to our filing of such Annual Report on Form 10-K, as well as any amendments or updates to our risk factors reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus, together with other information in this prospectus, the documents incorporated by reference, any prospectus supplement and any free writing prospectus that we may authorize.

Forward-looking statements speak only as of the date the statements are made. Except as required under the federal securities laws and rules and regulations of the SEC, we undertake no obligation to update or revise forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information. We caution you not to unduly rely on the forward-looking statements when evaluating the information presented herein.

## **USE OF PROCEEDS**

We will not receive any of the proceeds from the sale of the Resale Shares covered by this prospectus, except with respect to amounts received by us due to the exercise of any Warrants for cash. We intend to use the proceeds from the exercise of any Warrants for cash for working capital and general corporate purposes.

## SELLING STOCKHOLDERS

The 250,000,000 Resale Shares being offered by the Selling Stockholders include (i) 100,000,000 shares of Common Stock issuable upon conversion of the Shares, (ii) up to 100,000,000 shares of Common Stock, issuable upon conversion of Enrollment Date Warrant Shares, and (iii) up to 50,000,000 shares of Common Stock issuable upon conversion of Release Date Warrant Shares.

We are registering the Resale Shares in order to permit the Selling Stockholders to offer the Resale Shares for resale from time to time. For additional information regarding the Resale Shares being offered by the Selling Stockholders pursuant to this prospectus, see “*Recent Milestones – July 2025 Private Placement*” above. The following table sets forth, as of the date of this prospectus, the names of the Selling Stockholders and the aggregate number of shares of Common Stock that the Selling Stockholders may offer pursuant to this prospectus.

In accordance with the terms of the Registration Rights Agreement, as applicable, this prospectus covers the resale of all Resale Shares. The fourth column of the table below assumes the sale of all of the Resale Shares offered by the Selling Stockholders pursuant to this prospectus.

Pursuant to the Certificate of Designations, a Selling Stockholder shall not have the right to convert any portion of the Series B Preferred Stock, and such Series B Preferred Stock shall not be automatically converted, to the extent that after giving effect to such conversion, such Selling Stockholder, together with its affiliates, any other persons acting as a group together, and any other persons whose beneficial ownership of Common Stock would be aggregated with the Selling Stockholder’s and the other attribution parties for purposes of Section 13(d) of the Exchange Act would beneficially own in excess of 4.99% or 9.99% (at the discretion of the Selling Stockholder) of the shares of Common Stock outstanding immediately after giving effect to such conversion. The number of shares of Common Stock in the columns below do not reflect this limitation. The Selling Stockholder may sell all, some or none of their shares of Common Stock in this offering. See “*Plan of Distribution*.”

The information in the following table has been provided to us by or on behalf of the Selling Stockholders and the Selling Stockholders may have sold, transferred or otherwise disposed of all or a portion of their securities after the date on which they provided us with information regarding their securities. The Selling Stockholders may sell all, some or none of their Resale Shares in this offering. See “*Plan of Distribution*.”

Name of Selling Stockholder	Before the Offering	Number of Shares of Common Stock Being Offered (including Common Stock issuable upon conversion of the Shares and Warrant Shares, assuming the exercise of all Warrants)	After the Offering	
	Total Shares of Common Stock (including Common Stock issuable upon conversion of Series A Shares and Preferred Warrant Shares***)		Total Shares of Common Stock (including Common Stock issuable upon conversion of Series A Shares and Preferred Warrant Shares)	Percentage of Shares of Common Stock Beneficially Owned After Offering*
SESSA CAPITAL (MASTER) L.P. <sup>(1)</sup>	13,235,440	57,125,000	13,235,440	4.8%
RA Capital Healthcare Fund, L.P. <sup>(2)</sup>	—	42,850,000	—	*%
Aventis Inc <sup>(3)</sup>	—	28,550,000	—	*%
Entities Affiliated with Vivo Capital, LLC <sup>(4)</sup>	—	28,550,000	—	*%
Commodore Capital Master LP <sup>(5)</sup>	—	28,550,000	—	*%
CDK ASSOCIATES, LLC <sup>(6)</sup>	—	9,524,000	—	*%
THIRD STREET HOLDINGS, LLC <sup>(7)</sup>	—	595,000	—	*%
Entities associated with Blackstone Alternative Asset Management Associates LLC <sup>(8)</sup>	—	11,331,000	—	*%
SPRUCE STREET CAPITAL LP <sup>(9)</sup>	—	10,750,000	—	*
T1D Fund: A Breakthrough T1D Venture LLC <sup>(10)</sup>	761,904	7,125,000	761,904	*%
B-FLEXION HEALTH AND LIFE SCIENCE INVEST L.P. <sup>(11)</sup>	—	7,125,000	—	*%
WOODLINE MASTER FUND LP <sup>(12)</sup>	—	7,125,000	—	*%
Atlas Private Holdings (Cayman) Ltd. <sup>(13)</sup>	—	5,775,000	—	*%
ATW MASTER FUND V LP <sup>(14)</sup>	1,075,210	5,025,000	1,075,210	*%

\* Percentage not listed if less than 1%.

\*\* Assumes sale of all Resale Shares covered by this prospectus and no further acquisitions of shares of Common Stock by the Selling Stockholders.

\*\*\* As used in this section, “Series A Shares” collectively means shares of the Company’s Series A-2 Preferred Stock, par value \$0.0001 per share (“Series A-2 Preferred Stock”) and shares of the Company’s Series A-3 Preferred Stock, par value \$0.0001 per share (“Series A-3 Preferred Stock”), “Preferred Stock Warrants” means warrants to purchase shares of Series A-3 Preferred Stock, and “Preferred Warrant Shares” means the shares of Series A-3 Preferred Stock underlying Preferred Stock Warrants.

- (1) Consists of 57,125,000 shares of Common Stock anticipated to be held by Sessa Capital (Master), L.P. (“Sessa Capital”) issuable upon conversion of 571,250 shares of Series B Preferred Stock following receipt of shareholder approval. The Total Shares of Common Stock beneficially owned Before the Offering also includes 13,235,440 shares of Common Stock, which consists of 458,457 shares of Common Stock currently outstanding, 4,504,761 shares of Common Stock issuable upon conversion of 28,380 shares of outstanding Series A-2 Preferred Stock, and 8,272,222 shares of Common Stock issuable upon conversion of 52,115 Series A Shares underlying outstanding Preferred Stock Warrants. These securities are beneficially owned by (i) Sessa Capital (Master) L.P. directly, (ii) Sessa Capital GP, LLC, indirectly as a result of being the sole general partner of Sessa Capital, (iii) Sessa Capital IM, L.P., indirectly as a result of being the investment adviser for Sessa Capital, (iv) Sessa Capital IM GP, LLC, indirectly as a result of being the sole general partner of Sessa Capital IM, L.P., and (v) John Petry, indirectly as a result of being the manager of Sessa Capital GP, LLC and Sessa Capital IM GP, LLC. Andrew Moin, an Analyst and Partner with Sessa Capital, is a member of the board of directors of the Company. Mr. Moin disclaims beneficial ownership of the reported securities. Sessa Capital is subject to a 4.99% blocker on all shares of Series A Preferred Stock and shares of Series B Preferred Stock held or to be held by Sessa Capital. The principal business address of the persons and entities listed above is 888 Seventh Avenue, 30th Floor, New York, NY 10019.
- (2) Consists of 42,850,000 shares of Common Stock held by RA Capital Healthcare Fund, L.P. (“RACHF”) issuable upon conversion of 428,500 shares of Series B Preferred Stock following receipt of stockholder approval. RACHF is subject to a 9.99% blocker on all shares of Series B Preferred Stock and Warrants held by RACHF. RA Capital Management, L.P. is the investment manager for RACHF. The general partner of RA Capital Management, L.P. is RA Capital Management GP, LLC, of which Peter Kolchinsky and Rajeev Shah are the managing members. Each of RA Capital Management, L.P., RA Capital Management GP, LLC, Mr. Kolchinsky and Mr. Shah may be deemed to have voting and investment power over the securities held by RACHF. RA Capital Management, L.P., RA Capital Management GP, LLC, Mr. Kolchinsky and Mr. Shah disclaim beneficial ownership of such securities except to the extent of any pecuniary interest therein. The principal business address of the persons and entities listed above is 200 Berkeley Street, 18th Floor, Boston, MA 02116.
- (3) Consists of 28,550,000 shares of Common Stock issuable upon conversion of (a) 114,200 shares of Series B Preferred Stock held directly by Aventis Inc., (b) 114,200 shares of Series B Preferred Stock issuable upon exercise of the Enrollment Date Warrant held directly by Aventis Inc., and (c) 57,100 shares of Series B Preferred Stock issuable upon exercise of the Release Date Warrant held directly by Aventis Inc. Aventis Inc. is a wholly owned subsidiary of Sanofi S.A., a French société anonyme (limited liability company), which may be deemed to have voting and dispositive power over the securities held by Aventis Inc. The address of Aventis Inc. is c/o Sanofi – Global Alliance Management, 450 Water Street, Cambridge, MA 02141. The shares of Series B Preferred Stock, Enrollment Date Warrant and Release Date Warrant held directly by Aventis Inc. are each subject to a 4.99% blocker.
- (4) Consists of 25,931,000 shares of Common Stock held by Vivo Opportunity Fund Holdings, L.P., issuable upon conversion of 259,310 shares of Series B Preferred Stock, and 2,619,000 shares of Common Stock held by Vivo Opportunity Cayman Fund, L.P. issuable upon conversion of 26,190 shares of Series B Preferred Stock following receipt of stockholder approval. Vivo Opportunity, LLC is the general partner of Vivo Opportunity Fund Holdings, L.P. Vivo Opportunity Cayman, LLC is the general partner of Vivo Opportunity Cayman Fund, L.P. The voting members of each of Vivo Opportunity, LLC and Vivo Opportunity Cayman, LLC are Kevin Dai, Gaurav Aggarwal, Frank Kung and Shan Fu, none of whom has individual voting or investment power with respect to the shares held by Vivo Opportunity Fund Holdings, L.P. or Vivo Opportunity Cayman Fund, L.P. The address of the individuals and entities referenced in this footnote is 192 Lytton Avenue, Palo Alto, California 94301. These entities are subject to a 9.99% blocker.
- (5) Consists of 28,550,000 shares of Common Stock held by Commodore Capital Master LP, issuable upon conversion of 285,500 shares of Series B Preferred Stock following receipt of stockholder approval. Commodore Capital LP is the investment manager to Commodore Capital Master LP and may be deemed to beneficially own the shares held by Commodore Capital Master LP. Michael Kramarz and Robert Egen Atkinson are the managing partners of Commodore Capital LP and exercise investment discretion with respect to these shares. Commodore Capital LP and Commodore Capital Master LP have shared voting and dispositive power with respect to these Shares. The address of Commodore Capital LP and Commodore Capital Master LP is 444 Madison Avenue, 35th Floor, New York, NY 10022. These entities are subject to a 9.99% blocker.

- (6) Consists of 9,524,000 shares of Common Stock held by CDK Associates, LLC (“CDK”), issuable upon conversion of 95,240 shares of Series B Preferred Stock following receipt of stockholder approval. CDK may be deemed to be beneficially owned by (x) Scott Morenstein, Managing Director of Caxton Alternative Management LP, the investment manager of CDK, (y) Caxton Corporation, the manager of CDK and (z) Bruce Kovner, the chairman and sole shareholder of Caxton Corporation. Each of Scott Morenstein, Caxton Corporation and Bruce Kovner disclaims beneficial ownership of these shares except to the extent of its or his pecuniary interest, if any, therein. The selling stockholder’s address is 731 Alexander Road, Building 2, Suite 500, Princeton, New Jersey 08540. CDK is subject to a 4.99% blocker.
- (7) Consists of 595,000 shares of Common Stock held by Third Street Holdings, LLC (“Third Street”), issuable upon conversion of 5,950 shares of Series B Preferred Stock following receipt of stockholder approval. Peter P. D’Angelo controls Third Street and may be deemed to beneficially own the securities held by Third Street. Mr. D’Angelo expressly disclaims beneficial ownership of such securities except to the extent of any pecuniary interest therein. The address of Third Street is 731 Alexander Road, Building 2, Suite 500, Princeton, NJ 08540. Third Street is subject to a 4.99% blocker.
- (8) Consists of 6,155,000 shares of Common Stock held by Spruce Street Aggregator L.P. (“Spruce Street Aggregator”), issuable upon conversion of 61,550 shares of Series B Preferred Stock, and 5,176,000 shares of Common Stock held by Blackstone Annex Master Fund L.P. (“Annex Fund”), issuable upon conversion of 51,760 shares of Series B Preferred Stock following receipt of stockholder approval. Blackstone Alternative Asset Management Associates LLC is the general partner of Spruce Street Aggregator and Annex Fund. Blackstone Holdings II L.P. is the sole member of Blackstone Alternative Asset Management Associates LLC. Blackstone Holdings I/II GP L.L.C. is the general partner of Blackstone Holdings II L.P. Blackstone Inc. is the sole member of Blackstone Holdings I/II GP L.L.C. Blackstone Group Management L.L.C. is the sole holder of the Series II preferred stock of Blackstone Inc. Blackstone Group Management L.L.C. is wholly owned by its senior managing directors and controlled by its founder, Stephen A. Schwarzman. Each of such Blackstone entities and Mr. Schwarzman may be deemed to beneficially own the securities beneficially owned by Spruce Street Aggregator directly or indirectly controlled by it or him, but each (other than Spruce Street Aggregator and Annex Fund to the extent of their direct holdings) disclaims beneficial ownership of such securities. The address of each of Spruce Street Aggregator and Annex Fund, Mr. Schwarzman and each of the Blackstone entities listed is c/o Blackstone Inc., 345 Park Avenue, New York, New York 10154. These entities are subject to a 4.99% blocker.
- (9) Consists of 8,830,500 shares of Common Stock held by Spruce Street Capital Master Fund LP (“Master Fund”), issuable upon conversion of 88,305 shares of Series B Preferred Stock, and 1,919,500 shares of Common Stock issuable upon conversion of 19,195 shares of Series B Preferred Stock held by a separate account client (the “Account”) for which Spruce Street Capital LP (the “Spruce Advisor”) acts as discretionary investment manager (such account, together with the Master Fund, the “Spruce Funds”) following receipt of stockholder approval. Simon Basseyn and Alex Ryan Rosen have shared voting and dispositive power with respect to such securities and expressly disclaim beneficial ownership of such securities except to the extent of any pecuniary interest therein. The address of the Spruce Advisor, the Master Fund and the Account is 777 Third Avenue, Suite 1704, New York, NY 10017. The Master Fund and the Account are subject to a 4.99% blocker.
- (10) Consists of 7,125,000 shares of Common Stock held by T1D Fund: A Breakthrough T1D Venture LLC (“T1D Fund”), issuable upon conversion of 71,250 shares of Series B Preferred Stock following receipt of stockholder approval. The Total Shares of Common Stock beneficially owned Before the Offering also includes 761,904 shares of Common Stock which consists of 285,714 shares of Common Stock currently outstanding, and 476,190 shares of Common Stock issuable upon conversion of 3,000 Series A Shares underlying outstanding Preferred Stock Warrants. Elizabeth Mily may be deemed to have voting and dispositive power with respect to such securities and expressly disclaims beneficial ownership of such securities except to the extent of any pecuniary interest therein. The address of T1D Fund is 50 Milk Street, 16th Floor, Boston, MA 02109. T1D Fund is subject to a 9.99% blocker.
- (11) Consists of 7,125,000 shares of Common Stock held by B-Flexion LP (as defined below), issuable upon conversion of 71,250 shares of Series B Preferred Stock following receipt of stockholder approval. B-Flexion GP Limited (“B-Flexion GP”) is the general partner of B-Flexion Health and Life Science Invest L.P. (“B-Flexion LP”). Any two directors of B-Flexion GP has the power to vote or dispose of the shares held of record by B-Flexion LP. The current members of the B-Flexion GP board are Andrew Le Gal, Sally-Ann Hardman, Steven Gray and Panicos Papageorgiou, and each may be deemed to have beneficial ownership over the shares

- held of record by B-Flexion LP. The address of the individuals and entities referenced in this footnote is Ensign House, 29 Seaton Place, St. Helier, Jersey. These entities are subject to a 4.99% blocker.
- (12) Consists of 7,125,000 shares of Common Stock held by Woodline Master Fund L.P. (“Woodline”), issuable upon conversion of 71,250 shares of Series B Preferred Stock following receipt of stockholder approval. Woodline Partners LP, or Woodline Partners, serves as the investment manager of Woodline and may be deemed to be the beneficial owner of the shares. Woodline Partners disclaims any beneficial ownership of these shares. The address of the foregoing entities is 4 Embarcadero Center, Suite 3450, San Francisco, CA 94111. These entities are subject to a 9.99% blocker.
- (13) Consists of 5,775,000 shares of Common Stock held by Atlas Private Holdings (Cayman) Ltd., (“Atlas”), issuable upon conversion of 57,750 shares of Series B Preferred Stock following receipt of stockholder approval. Balyasny Asset Management L.P. is Atlas’ investment adviser. Dmitry Balyasny, via intermediate entities, manages Balyasny Asset Management L.P. and has voting and investment control over the reported securities. The address and principal office of Balyasny Asset Management L.P. is 767 5th Avenue, 35th Floor New York, NY 10153. These entities are subject to a 9.99% blocker.
- (14) Consists of 5,025,000 shares of Common Stock held by ATW Master Fund V LP (the “ATW Fund”) issuable upon conversion of 50,250 shares of Series B Preferred Stock, following receipt of stockholder approval. The Total Shares of Common Stock beneficially owned Before the Offering also includes 1,075,210 shares of Common Stock consisting of 122,830 shares of Common Stock currently outstanding, and 952,380 shares of Common Stock issuable upon conversion of 6,000 shares of Series A Shares underlying outstanding Preferred Stock Warrants. Antonio Ruiz-Gimenez and Kerry Propper are the managing members (the “ATW Managing Members”) of the ATW Fund’s investment manager, ATW Partners Opportunities Management LLC (the “Adviser”). The ATW Fund, Adviser and the ATW Managing Members may be deemed to have shared voting and dispositive power over the securities held by ATW Fund and each disclaims beneficial ownership of the shares held by ATW Fund. The address of ATW Fund is 1 Pennsylvania Plaza, Suite 4810, New York, NY 10119. These entities are subject to a 9.99% blocker.

### **Relationship with Selling Stockholders**

Except as disclosed below, none of the Selling Stockholders has had a material relationship with us or any of our predecessors or affiliates within the past three years, other than as a result of the ownership of our shares of Common Stock or other securities.

On September 29, 2023, the Company entered into a Board Designation Agreement, dated as of September 29, 2023, with Sessa Capital, pursuant to which Andrew Moin, who is a partner of Sessa Capital, was appointed to board of directors of the Company (the “Board”).

On July 21, 2025, the Company and RACHF entered into a letter agreement (the “Letter Agreement”), whereby the Company agreed to nominate up to two individuals designated by RACHF (the “RA Nominees”) to the Board and to subsequently decrease the size of the Board by two members, such that the Board shall be comprised of nine persons. The RA Nominees shall remain on the Board, subject to the terms of the Letter Agreement, until such time as RACHF holds less than 50% of the Common Stock (including Common Stock issuable upon conversion of Series B Preferred Stock) purchased by RACHF in the Offering.

## PLAN OF DISTRIBUTION

The Selling Stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of Common Stock or interests in shares of Common Stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of Common Stock or interests in shares of Common Stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The Selling Stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- distributions to members, partners, stockholders or other equityholders of the Selling Stockholders;
- ordinary brokerage transactions and transactions in which the broker dealer solicits purchasers;
- block trades in which the broker dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker dealer as principal and resale by the broker dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales and settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the Selling Stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

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

In connection with the sale of our Common Stock or interests therein, the Selling Stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the Common Stock in the course of hedging the positions they assume. The Selling Stockholders may also sell shares of our Common Stock short and deliver these securities to close out their short positions, or loan or pledge the Common Stock to broker-dealers that in turn may sell these securities. The Selling Stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the Selling Stockholders from the sale of the Common Stock offered by them will be the purchase price of the Common Stock less discounts or commissions, if any. Each of the Selling Stockholders

reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of Common Stock to be made directly or through agents. We will not receive any of the proceeds from this offering. Upon any exercise of the common warrants by payment of cash, however, we will receive the exercise price of the common warrants.

The Selling Stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule, or another available exemption from the registration requirements under the Securities Act.

The Selling Stockholders and any underwriters, broker-dealers or agents that participate in the sale of the Common Stock or interests therein may be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act (it being understood that the Selling Stockholders shall not be deemed to be underwriters solely as a result of their participation in this offering). Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling Stockholders who are “underwriters” within the meaning of Section 2(a)(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our Common Stock to be sold, the names of the Selling Stockholders, the respective purchase prices and public offering prices, the names of any agent, dealer or underwriter, and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the Common Stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the Common Stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the Selling Stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the Selling Stockholders and their affiliates. In addition, to the extent applicable, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the Selling Stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The Selling Stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the Selling Stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the Selling Stockholders to use commercially reasonable efforts to cause the registration statement of which this prospectus constitutes a part to become effective and to remain continuously effective until the earlier of: (i) the date on which the Selling Stockholders shall have resold or otherwise disposed of all the shares covered by this prospectus and (ii) the date on which the shares covered by this prospectus no longer constitute “Registrable Securities” as such term is defined in the Registration Rights Agreement, such that they may be resold by the Selling Stockholders without registration and without regard to any volume or manner-of-sale limitations and without current public information pursuant to Rule 144 under the Securities Act or any other rule of similar effect.

## LEGAL MATTERS

The validity of the shares of Common Stock to be offered for resale by the Selling Stockholders under this prospectus will be passed upon for us by Dentons US LLP, New York, New York.

## **EXPERTS**

The consolidated financial statements of SAB Biotherapeutics, Inc. as of and for the years ended December 31, 2024 and 2023, included in our Annual Report on Form 10-K for the year ended December 31, 2024, have been audited by EisnerAmper LLP, independent registered public accounting firm, as set forth in their report (which report includes an explanatory paragraph regarding the existence of substantial doubt about our ability to continue as a going concern), and have been incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

## **WHERE YOU CAN FIND MORE INFORMATION**

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus 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 for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>.

You may also access our SEC filings at our website [www.sab.bio](http://www.sab.bio). 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. You should not rely on our website or any such information in making your decision whether to purchase our securities.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus the information contained in other documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded, for purposes of this prospectus, to the extent that a statement contained in or omitted from this prospectus, or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. We incorporate by reference the documents listed below which have been filed by us:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, filed with SEC on [March 31, 2025](#);
- Our Quarterly Reports on Form 10-Q for the fiscal periods ended March 31, 2025 and June 30, 2025, filed with the SEC on [May 9, 2025](#) and [August 7, 2025](#), respectively;
- Our Current Reports on Form 8-K filed with the SEC on [January 28, 2025](#), [February 5, 2025](#), [July 17, 2025](#), and [July 21, 2025](#); and;
- The description of our common stock and warrants in our registration statement on [Form 8-A filed with the SEC on January 8, 2021](#), including any amendments or reports filed for the purpose of updating such description.

In addition, all documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act on or after the date of this prospectus and prior to the termination of the offering of the securities to which this prospectus relates, shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing of such documents. However, any documents or portions thereof, whether specifically listed above or filed in the future, that are not deemed “filed” with the SEC, including without limitation any information furnished pursuant to Item 2.02 or 7.01 of Form 8-K or certain exhibits furnished pursuant to Item 9.01 of Form 8-K, shall not be deemed to be incorporated by reference in this prospectus.

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

You can request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

SAB Biotherapeutics, Inc.  
777 W 41st St., Suite 401  
Miami Beach, Florida 33140  
Attn: Corporate Secretary  
(305)-845-2813

\* \* \*



**Up to 250,000,000 Shares of  
Common Stock Offered by the Selling Stockholders**

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**PROSPECTUS**

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, 2025

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**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

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

The following table sets forth various expenses being borne by the Company in connection with the sale and distribution of the securities being registered. All of the amounts shown are estimates except for the Securities and Exchange Commission Registration Fee.

SEC Registration Fee	\$	131,107.06
Accounting Fees and Expenses	\$	*
Legal Fees and Expenses	\$	*
Miscellaneous	\$	*
<b>Total</b>	<b>\$</b>	<b>131,107.06</b>

\*Estimates not presently known.

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

Section 145 of the DGCL provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any threatened, pending or completed actions, suits or proceedings in which such person is made a party by reason of such person being or having been a director, officer, employee or agent of the registrant. The DGCL provides that Section 145 is not exclusive of other rights to which those seeking indemnification may be entitled under any bylaws, agreement, vote of stockholders or disinterested directors or otherwise. The Registrant's Certificate of Incorporation and Bylaws provide for indemnification by the Registrant of its directors and officers to the fullest extent permitted by the DGCL.

Section 102(b)(7) of the DGCL permits a corporation to provide in its Certificate of Incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) for unlawful payments of dividends or unlawful stock repurchases redemptions or other distributions or (4) for any transaction from which the director derived an improper personal benefit. The registrant's Certificate of Incorporation provides for such limitation of liability to the fullest extent permitted by the DGCL.

The registrant has entered into indemnification agreements with each of its directors and executive officers to provide contractual indemnification in addition to the indemnification provided in our Certificate of Incorporation. Each indemnification agreement provides for indemnification and advancements by the registrant of certain expenses and costs relating to claims, suits or proceedings arising from his or her service to the registrant or, at our request, service to other entities, as officers or directors to the maximum extent permitted by applicable law. We believe that these provisions and agreements are necessary to attract qualified directors.

The registrant also maintains standard policies of insurance under which coverage is provided (1) to its directors and officers against loss arising from claims made by reason of breach of duty or other wrongful act, while acting directors and officers of the registrant, and (2) to the registrant with respect to payments which may be made by the Registrant to such officers and directors pursuant to any indemnification provision contained in the Registrant's Certificate of Incorporation and Bylaws or otherwise as a matter of law.

**Item 16. Exhibits.**

A list of exhibits filed with this registration statement on Form S-3 is set forth on the Exhibit Index and is incorporated herein by reference.

**Incorporated by Reference**

<b>Exhibit Number</b>	<b>Description</b>	<b>Schedule/ Form</b>	<b>File No.</b>	<b>Exhibit</b>	<b>Filing Date</b>
3.1	<a href="#">Amended and Restated Certificate of Incorporation</a>	8-K	001-39871	3.1	October 28, 2021
3.2	<a href="#">Amended and Restated Bylaws</a>	8-K	001-39871	3.2	October 28, 2021
3.3	<a href="#">Certificate of Designation of Preferences, Rights and Limitations of the Series B Convertible Non-Voting Preferred Stock</a>	8-K	001-39871	3.3	July 21, 2025
4.1	<a href="#">Specimen common stock Certificate of Registrant</a>	S-1/A	333-258869	4.2	January 4, 2021
4.2	<a href="#">Form of Preferred Warrant</a>	8-K	001-39871	4.1	July 21, 2025
4.3	<a href="#">Form of Preferred Warrant</a>	8-K	001-39871	4.2	July 21, 2025
5.1^	<a href="#">Opinion of Dentons US LLP</a>				
10.1	<a href="#">Form of Securities Purchase Agreement, dated July 21, 2025 by and among SAB Biotherapeutics, Inc. and the purchasers named therein</a>	8-K	001-39871	10.1	July 21, 2025
10.2	<a href="#">Form of Registration Rights Agreement, dated July 21, 2025 by and among SAB Biotherapeutics, Inc. and the holders named therein</a>	8-K	001-39871	10.2	July 21, 2025
23.1*	<a href="#">Consent of Independent Registered Public Accounting Firm</a>				
23.2^	<a href="#">Consent of Dentons US LLP (included in Exhibit 5.1)</a>				
24.1*	<a href="#">Power of Attorney (included on a signature page of the initial filing of this Registration Statement)</a>				
107^	<a href="#">Filing Fee Table</a>				

\* Filed herewith

^ Previously filed

**Item 17. Undertakings.**

The Registrant hereby undertakes:

(a)

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

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

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

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

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

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

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

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

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

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

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

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

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Company has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in City of Miami Beach, Florida, on this September 22, 2025.

SAB BIOTHERAPEUTICS, INC.

Date: September 22, 2025

By:

/s/ Samuel J. Reich

**Samuel J. Reich**  
**Chief Executive Officer**

## POWER OF ATTORNEY

**KNOW ALL PERSONS BY THESE PRESENTS**, that each person whose signature appears below constitutes and appoints Samuel J. Reich and Lucy To, and each of them acting individually, as his or her true and lawful attorney-in-fact and agent, with full power of each to act alone, with full powers of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments and any registration statement for the same offering that is to be effective under Rule 462(b) of the Securities Act), and to file the same with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, and full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their substitute or resubstitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<b>Signature</b>	<b>Title</b>	<b>Date</b>
<u>/s/ Samuel J. Reich</u> Samuel J. Reich	Chair and Chief Executive Officer (Principal Executive Officer)	September 22, 2025
<u>/s/ Lucy To</u> Lucy To	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	September 22, 2025
<u>/s/ Eddie J. Sullivan, PhD</u> Eddie J. Sullivan, PhD	President and Director	September 22, 2025
<u>/s/ Katie Ellias</u> Katie Ellias	Director	September 22, 2025
<u>/s/ Christine Hamilton, MBA</u> Christine Hamilton, MBA	Director	September 22, 2025
<u>/s/ Scott Giberson, RPh, MPH, D.Sc.</u> Scott Giberson, RPh, MPH, D.Sc.	Director	September 22, 2025
<u>/s/ David Charles Link</u> David Charles Link	Director	September 22, 2025

/s/ Erick Lucera  
Erick Lucera

Director

September 22, 2025

/s/ Andrew Moin  
Andrew Moin

Director

September 22, 2025

/s/ William Polvino, MD, PhD  
William Polvino, MD, PhD

Director

September 22, 2025

/s/ Jay Skyler, MD  
Jay Skyler, MD

Director

September 22, 2025

/s/ Jeffrey G. Spragens  
Jeffrey G. Spragens

Director

September 22, 2025

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Amendment No. 1 to the Registration Statement of SAB Biotherapeutics, Inc. on Form S-3 to be filed on or about September 22, 2025 of our report dated March 28, 2025, on our audits of the financial statements as of December 31, 2024 and 2023 and for each of the years then ended, which report was included in the Annual Report on Form 10-K filed March 31, 2025. Our report includes an explanatory paragraph about the existence of substantial doubt concerning the Company's ability to continue as a going concern. We also consent to the reference to our firm under the caption "Experts" in this Registration Statement.

*/s/ EisnerAmper LLP*

EISNERAMPER LLP  
Iselin, New Jersey  
September 22, 2025

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