UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2025

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission File Number: 001-39871

SAB BIOTHERAPEUTICS, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**85-3899721**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
777 W 41st St, Suite 401	
Miami Beach, Florida	**33140**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (605) 679-6980

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, $0.0001 par value per share	SABS	The Nasdaq Stock Market LLC
Warrants, each exercisable for one share of Common Stock	SABSW	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

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 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of May 2, 2025, the registrant had 9,291,697 shares of common stock, $0.0001 par value per share, outstanding.

Table of Contents

		Page
PART I.	FINANCIAL INFORMATION	2
Item 1.	Condensed Consolidated Financial Statements (Unaudited)	2
	Condensed Consolidated Balance Sheets	2
	Condensed Consolidated Statements of Operations and Comprehensive Loss	3
	Condensed Consolidated Statements of Changes In Stockholders' Equity	4
	Condensed Consolidated Statements of Cash Flows	5
	Notes to Unaudited Condensed Consolidated Financial Statements	6
Item 2.	Management's Discussion and Analysis of Financial Condition and Results of Operations	26
Item 3.	Quantitative and Qualitative Disclosures About Market Risk	35
Item 4.	Controls and Procedures	35
PART II.	OTHER INFORMATION	36
Item 1.	Legal Proceedings	36
Item 1A.	Risk Factors	36
Item 2.	Unregistered Sales of Equity Securities and Use of Proceeds	36
Item 3.	Defaults Upon Senior Securities	36
Item 4.	Mine Safety Disclosures	36
Item 5.	Other Information	36
Item 6.	Exhibits	37
Signatures		38

PART I—FINANCIAL INFORMATION

Item 1. Condensed Consolidated Financial Statements (Unaudited).

SAB Biotherapeutics, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets

	March 31, 2025	December 31, 2024
Assets		
Current assets		
Cash and cash equivalents	$ 5,640,367	$ 8,897,966
Short-term investments	7,209,999	11,862,746
Accrued interest receivable	21,386	54,955
Prepaid expenses and other current assets	3,424,957	2,976,562
Total current assets	16,296,709	23,792,229
Deferred issuance cost	261,105	261,105
Long-term prepaid assets	188,689	220,997
Operating lease right-of-use assets	3,201,514	970,294
Financing lease right-of-use assets	3,561,129	3,582,835
Property, plant and equipment, net	14,610,916	15,368,009
Total assets	**$ 38,120,062**	**$ 44,195,469**
Liabilities and Stockholders' Equity		
Current liabilities		
Notes payable	$ 138,554	$ 275,849
Accounts payable	2,520,390	1,694,722
Accrued expenses and other current liabilities	6,055,716	5,473,036
Operating lease liabilities, current portion	793,360	393,430
Finance lease liabilities, current portion	145,333	142,563
Total current liabilities	9,653,353	7,979,600
Operating lease liabilities, noncurrent	2,467,223	581,148
Finance lease liabilities, noncurrent	3,238,531	3,275,919
Warrant liabilities	1,353,456	6,389,226
Total liabilities	16,712,563	18,225,893
Commitments and contingencies (Note 18)		
Stockholders' equity		
Preferred stock; $0.0001 par value; 10,000,000 shares authorized, 42,019 shares issued and outstanding at March 31, 2025 and December 31, 2024, respectively	5	5
Common stock; $0.0001 par value; 800,000,000 shares authorized at March 31, 2025 and December 31, 2024, respectively; 9,346,362 and 9,343,533 shares issued at March 31, 2025 and December 31, 2024, respectively, and 9,291,697 and 9,288,868 outstanding at March 31, 2025 and December 31, 2024, respectively	936	935
Treasury stock, at cost; 54,665 shares held at March 31, 2025 and December 31, 2024, respectively	(5,521,246)	(5,521,246)
Additional paid-in capital	156,405,020	155,794,142
Accumulated other comprehensive loss	(111,593)	(135,410)
Accumulated deficit	(129,365,623)	(124,168,850)
Total stockholders' equity	21,407,499	25,969,576
Total liabilities and stockholders' equity	**$ 38,120,062**	**$ 44,195,469**

See accompanying notes to the condensed consolidated financial statements

SAB Biotherapeutics, Inc. and Subsidiaries
Condensed Consolidated Statements of Operations and Comprehensive Loss
(Unaudited)

	For The Three Months Ended March 31,	
	2025	**2024**
Revenue		
Grant revenue	$ —	$ 944,575
Total revenue	—	944,575
Operating expenses		
Research and development	7,657,321	8,146,070
General and administrative	3,114,781	4,189,121
Total operating expenses	10,772,102	12,335,191
Loss from operations	(10,772,102)	(11,390,616)
Other income (expense)		
Changes in fair value of warrant liabilities	5,035,769	5,468,219
Interest expense	(69,565)	(76,371)
Interest income	62,498	497,893
Other income	546,627	475,130
Total other income	5,575,329	6,364,871
Net loss	$ (5,196,773)	$ (5,025,745)
Other comprehensive income (loss):		
Unrealized loss, change in fair value of available-for-sale securities, net of tax	$ (975)	$ (56,061)
Foreign currency translation	24,792	(33,807)
Total comprehensive loss	$ (5,172,956)	$ (5,115,613)
Loss per common share attributable to the Company's shareholders		
Basic and diluted loss per common share	$ (0.56)	$ (0.54)
Weighted-average common shares outstanding – basic and diluted	9,291,641	9,241,940

See accompanying notes to the condensed consolidated financial statements

SAB Biotherapeutics, Inc. and Subsidiaries
Condensed Consolidated Statements of Changes In Stockholders' Equity
(Unaudited)

	Common stock		Preferred Stock			Treasury Stock				
	Shares	Amount	Shares	Amount	Additional Paid-In Capital	Shares	Amount	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
Balance at December 31, 2023	**9,280,159**	**$ 929**	**42,236**	**$ 5**	**$ 152,856,874**	**(54,665)**	**$ (5,521,246)**	**$ (90,063,541)**	**$ 26,420**	**$ 57,299,441**
Stock-based compensation	—	—	—	—	617,445	—	—	—	—	617,445
Issuance of common stock for exercise of stock options	3,780	—	—	—	20,412	—	—	—	—	20,412
Net loss	—	—	—	—	—	—	—	(5,025,745)	—	(5,025,745)
Foreign currency translation	—	—	—	—	—	—	—	—	(33,807)	(33,807)
Unrealized loss, change in fair value of available-for-sale securities	—	—	—	—	—	—	—	—	(56,061)	(56,061)
Balance at March 31, 2024	**9,283,939**	**$ 929**	**42,236**	**$ 5**	**$ 153,494,731**	**(54,665)**	**$ (5,521,246)**	**$ (95,089,286)**	**$ (63,448)**	**$ 52,821,685**
Balance at December 31, 2024	**9,343,533**	**$ 935**	**42,019**	**$ 5**	**$ 155,794,142**	**(54,665)**	**$ (5,521,246)**	**$ (124,168,850)**	**$ (135,410)**	**$ 25,969,576**
Stock-based compensation	—	—	—	—	612,951	—	—	—	—	612,951
Issuance of common stock pursuant to vesting of restricted stock units	2,829	1	—	—	(1)	—	—	—	—	—
Payment of taxes withheld on issuance of restricted stock units	—	—	—	—	(2,072)	—	—	—	—	(2,072)
Net loss	—	—	—	—	—	—	—	(5,196,773)	—	(5,196,773)
Foreign currency translation	—	—	—	—	—	—	—	—	24,792	24,792
Unrealized loss, change in fair value of available-for-sale securities	—	—	—	—	—	—	—	—	(975)	(975)
Balance at March 31, 2025	**9,346,362**	**$ 936**	**42,019**	**$ 5**	**$ 156,405,020**	**(54,665)**	**$ (5,521,246)**	**$ (129,365,623)**	**$ (111,593)**	**$ 21,407,499**

See accompanying notes to the condensed consolidated financial statements

SAB Biotherapeutics, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Three Months Ended March 31,	
	2025	**2024**
Cash flows from operating activities:		
Net loss	$ (5,196,773)	$ (5,025,745)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	756,595	1,963,040
Amortization of finance right-of-use assets	21,706	21,706
Stock-based compensation expense	612,951	617,445
Net realized and unrealized gain on equity securities	(961)	—
Changes in fair value of warrant liabilities	(5,035,769)	(5,468,219)
Accretion of discounts on short-term investments	(19,489)	(83,994)
Changes in operating assets and liabilities		
Accrued interest receivable	33,569	(193,232)
Prepaid expenses and other current assets	(291,075)	(289,541)
Operating lease right-of-use assets and liabilities, net	54,785	(10,403)
Accounts payable	684,171	243,357
Deferred grant income	—	(944,575)
Accrued expense and other current liabilities	583,073	(1,579,848)
Net cash used in operating activities	**(7,797,217)**	**(10,750,009)**
Cash flows from investing activities:		
Proceeds from the sale of equipment	500	—
Purchases of equipment	—	(129,074)
Purchases of investment securities	(70,905)	(31,230,133)
Sales and maturities of investments	4,741,508	—
Net cash provided by (used in) investing activities	**4,671,103**	**(31,359,207)**
Cash flows from financing activities:		
Payment of deferred issuance costs	—	(167,393)
Principal payments of notes payable	(137,295)	(215,382)
Principal payments on finance leases	(34,618)	(32,055)
Proceeds from exercise of stock options	—	20,412
Tax payments for share settlement of restricted stock units	(2,072)	—
Net cash used in financing activities	**(173,985)**	**(394,418)**
Effect of exchange rate changes on cash and cash equivalents	42,500	(28,270)
Net decrease in cash and cash equivalents	(3,257,599)	(42,531,904)
Cash and cash equivalents		
Beginning of period	8,897,966	56,566,066
End of period	$ 5,640,367	$ 14,034,162
Supplemental cash flow information:		
Cash paid for interest	$ 70,011	$ 66,163
Supplemental information on non-cash investing and finance activities:		
Deferred issuance costs included in accounts payable and accrued expenses	$ —	$ 68,712
Right-of-use assets obtained in exchange for operating lease liabilities	$ 2,422,191	$ —

See accompanying notes to the condensed consolidated financial statements.

(1) Nature of Business

SAB Biotherapeutics, Inc., a Delaware corporation ("SAB" or "SAB Biotherapeutics", and together with its subsidiaries, the "Company"), is a clinical-stage biopharmaceutical company focused on the development of human polyclonal immunotherapeutic antibodies, or human immunoglobulins ("hIgG"), to address immune system disorders and infectious diseases. The Company's antibodies are both target-specific and polyclonal, meaning they are comprised of multiple hIgGs and can bind to multiple sites on specific immunogens, making them ideally suited to address the complexities associated with many immune-mediated disorders. The Company's lead candidate, SAB-142 is a human anti-thymocyte globulin ("ATG") focused on preventing or delaying the progression of type 1 diabetes ("T1D").

Australian Research and Development Tax Credit

In June 2023, the Company formed a new subsidiary in Australia, SAB BIO PTY LTD, a proprietary limited company ("SAB Australia"), primarily to conduct preclinical and clinical activities for product candidates. SAB Australia's research and development activities qualify for the Australian government's tax credit program, which provides a 43.5% credit for qualifying research and development expenses.

Liquidity and Going Concern

The accompanying unaudited condensed consolidated financial statements have been prepared assuming the Company will continue as a going concern, which contemplates continuity of operations, realization of assets and the satisfaction of liabilities and commitments in the normal course of business. The Company has experienced net losses, negative cash flows from operations and, as of March 31, 2025, had an accumulated deficit of $129.4 million. The Company anticipates that it will continue to generate losses for the foreseeable future and expects the losses to increase as the Company continues the development of, or seeks regulatory approvals for product candidates, and begins commercialization of products. As a result, the Company will require additional capital to fund operations in order to support long-term plans.

The Company will need to raise additional capital to fund its operations, to continue to execute its strategy and to continue as a going concern. In the future, the Company may seek additional funding through a combination of equity or debt financings, or other third-party financing, collaborative or other funding arrangements. Should the Company seek additional financing from outside sources, the Company may not be able to raise such financing on terms acceptable to the Company or at all. If the Company is unable to raise additional capital when required or on acceptable terms, the Company may be required to scale back or discontinue the advancement of product candidates, reduce headcount, liquidate assets, file for bankruptcy, reorganize, merge with another entity, or cease operations.

The Company currently expects that its cash and cash equivalents of $5.6 million and short-term investments of $7.2 million as of March 31, 2025 will not be sufficient to fund its operating expenses and capital requirements for more than 12 months from the date the financial statements are issued. These conditions raise substantial doubt about the Company's ability to continue as a going concern. There have been no adjustments made to these financial statements as a result of uncertainty.

(2) Summary of Significant Accounting Policies

A summary of the significant accounting policies applied in preparation of the accompanying condensed consolidated financial statements is set forth below.

Basis of presentation

The unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles accepted in the United States of America ("GAAP") for interim financial statements and the rules of the Securities and Exchange Commission ("SEC") applicable to interim financial statements. Certain information or footnote disclosures normally included in financial statements prepared in accordance with GAAP have been condensed or omitted, pursuant to the rules and regulations of the SEC for interim financial reporting. Accordingly, they do not include all the information and footnotes necessary for a complete presentation of financial position, results of operations, or cash flows. The accompanying unaudited condensed consolidated financial statements have been prepared by management without audit and should be read in conjunction with our audited consolidated financial statements, including the notes thereto, appearing in our Annual Report on Form 10-K for the fiscal

year ended December 31, 2024. In the opinion of management, all adjustments necessary for a fair presentation of the consolidated financial position, consolidated results of operations and other comprehensive loss and consolidated cash flows, for the periods indicated, have been made. The results of operations for the three months ended March 31, 2025 are not necessarily indicative of operating results that may be achieved over the course of the full year.

Emerging growth company status

The Company is an "emerging growth company," as defined in Section 2(a) of the Securities Act of 1933, as amended (the "Securities Act"), as modified by the Jumpstart our Business Startups Act of 2012, (the "JOBS Act"), and it may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in its periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, those that have not had a Securities Act registration statement declared effective or do not have a class of securities registered under the Securities Exchange Act of 1934, as amended (the "Exchange Act") are required to comply with the new or revised financial accounting standards. The JOBS Act provides that a company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies but any such election to opt out is irrevocable. The Company has elected not to opt out of such extended transition period which means that when a standard is issued or revised and it has different application dates for public or private companies, the Company, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard. This may make comparison of the Company's financial statements with another public company which is neither an emerging growth company nor an emerging growth company which has opted out of using the extended transition period difficult or impossible because of the potential differences in accounting standards used.

Principles of consolidation

The accompanying condensed consolidated financial statements include the results of the Company and its wholly owned subsidiaries, SAB Sciences, Inc., Diversity Therapeutics, Inc., SAB LLC, SAB Capra, LLC, Aurochs, LLC, and SAB Australia. Intercompany balances and transactions have been eliminated in consolidation.

Significant risks and uncertainties

The Company's operations are subject to a number of factors that can affect its operating results and financial condition. Such factors include, but are not limited to, the results of research and development efforts, clinical trial activities of the Company's product candidates, the Company's ability to obtain regulatory approval to market its product candidates, competition from products manufactured and sold or being developed by other companies, and the Company's ability to raise capital.

The Company currently has no commercially approved products and there can be no assurance that the Company's research and development will be successfully commercialized. Developing and commercializing a product requires significant time and capital and is subject to regulatory review and approval as well as competition from other biotechnology and pharmaceutical companies. The Company operates in an environment of rapid change and is dependent upon the continued services of its employees and obtaining and protecting intellectual property.

Use of estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses and the disclosure of contingent assets and liabilities in the financial statements. The Company has used significant estimates in its determination of stock-based compensation assumptions, determination of the fair value of the Private Placement Warrant liabilities, determination of the incremental borrowing rate ("IBR") used in the calculation of the Company's right of use assets and lease liabilities, estimation of clinical and other accruals and the valuation allowance on deferred tax assets. Actual amounts realized may differ from these estimates.

Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The

following fair value hierarchy classifies the inputs to valuation techniques that would be used to measure fair value into one of three levels:

Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

Level 3: Unobservable inputs that reflect the reporting entity's own assumptions.

Certain of the Company's financial instruments are not measured at fair value on a recurring basis but are recorded at amounts that approximate their fair value due to the short-term nature of their maturities, such as cash and cash equivalents, accrued interest receivable, accounts payable, notes payable, accrued expenses and other current liabilities.

The Company accounts for warrants to purchase its common stock par value of $0.0001 per share (its "common stock") pursuant to Accounting Standards Codification ("ASC") Topic 470, *Debt* ("ASC 470"), and ASC Topic 480, *Distinguishing Liabilities from Equity* ("ASC 480"), and classifies warrants for common stock as liabilities or equity. The warrants classified as liabilities are reported at their estimated fair value (see Note 13, *Fair Value Measurements*) and any changes in fair value are reflected in other income (expense). The warrants classified as equity are reported at their estimated relative fair value with no subsequent remeasurement. The Company's outstanding warrants are discussed in more detail in Note 12, *Warrants*.

Deferred Issuance Costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred issuance costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in shareholders' equity as a reduction of additional paid-in capital generated as a result of the issuance.

As of March 31, 2025 and December 31, 2024, the Company had $261 thousand in deferred issuance costs related to the Company's sales agreement with Cantor Fitzgerald & Co. The sales agreement is discussed further in Note 10, *Stockholders' Equity*.

Cash, cash equivalents, and restricted cash

Cash and cash equivalents are comprised of cash and highly liquid investments with original maturities of 90 days or less at the date of purchase. Cash equivalents consist primarily of exchange-traded money market funds.

The Company is exposed to credit risk in the event of default by the financial institutions or the issuers of these investments to the extent the amounts on deposit or invested are in excess of amounts that are insured.

Short-term investments

The Company accounts for short-term investments in accordance with ASC Topic 320, Investments - Debt and Equity Securities. Management determines the appropriate classification of its investments at the time of purchase and reevaluates such determinations at each reporting period.

At March 31, 2025, the Company's short-term investments consisted of U.S. treasury securities with original maturity exceeding 90 days and investments in exchange traded mutual funds. The Company classifies these securities as current. The Company considers all of its securities for which there is a determinable fair market value, and there are no restrictions on the Company's ability to sell within the next twelve months, as available-for-sale securities.

The Company recognizes the change in fair value of available-for-sale equity securities within other income in the condensed consolidated statements of operations and comprehensive loss, and available-for-sale debt securities are measured at fair value with unrealized gains and losses reported in accumulated other comprehensive income (loss) in the condensed consolidated statements of operations and comprehensive loss.

The Company reviews its investments at each reporting date to identify and evaluate whether a decline in fair value below the amortized cost basis of available-for-sale debt securities is due to credit-related factors and determines if such unrealized losses are the result of credit losses that require impairment. The Company records an allowance for credit losses on available-for-sale debt securities when a decline in fair value is determined to be credit-related, rather than recording a direct write-down of the investment's amortized cost. Factors considered in determining whether an unrealized loss is the result credit-related factors include the extent to which the fair value is less than the cost basis, any changes to the rating of the security by a rating agency, the financial condition and near-term prospects of the issuer, any historical failure of the issuer to make scheduled interest or principal payments, any adverse legal or regulatory events affecting the issuer or issuer's industry, any significant deterioration in economic condition and the

Company's intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value.

The Company did not recognize any credit losses on its short-term investments during the three months ended March 31, 2025 and 2024.

Concentration of credit risk

The Company maintains its cash and cash equivalent balances in the form of business checking accounts and money market accounts, the balances of which, at times, may exceed federally insured limits. Although the Company currently believes that the financial institutions with whom it does business will be able to fulfill their commitments to the Company, there is no assurance that those institutions will be able to continue to do so. The Company has not experienced any credit losses associated with its balances in such accounts for the three months ended March 31, 2025 and 2024.

Lease liabilities and right-of-use assets

The Company is party to certain contractual arrangements for equipment, lab space, and an animal facility, which meet the definition of leases under Financial Accounting Standards Board ("FASB") ASC Topic 842, *Leases* ("ASC 842"). In accordance with ASC 842, the Company recorded right-of-use assets and related lease liabilities for the present value of the lease payments over the lease terms. The Company's IBR was used in the calculation of its right-of-use assets and lease liabilities.

The Company elected not to apply the recognition requirements of ASC 842 to short-term leases, which are deemed to be leases with a lease term of twelve months or less. Instead, the Company recognized lease payments in the Condensed Consolidated Statements of Operations on a straight-line basis over the lease term and variable payments in the period in which the obligation for these payments was incurred. The Company elected this policy for all classes of underlying assets.

Research and development expenses

Expenses incurred in connection with research and development activities are expensed as incurred. These include licensing fees to use certain technology in the Company's research and development projects, fees paid to consultants and various entities that perform certain research and testing on behalf of the Company, and expenses related to animal care, research-use equipment depreciation, salaries, benefits, and stock-based compensation granted to employees in research and development functions.

During the three months ended March 31, 2025 and 2024, the Company had contracts with multiple contract research organizations ("CRO") to complete studies as part of research grant agreements. These costs include upfront, milestone and monthly expenses as well as reimbursement for pass through costs. All research and development costs are expensed as incurred except when the Company is accounting for nonrefundable advance payments for goods or services to be used in future research and development activities. In these cases, these payments are capitalized at the time of payment and expensed in the period the research and development activity is performed. As actual costs become known, the Company will adjust the accrual; such changes in estimate may result in material changes in the Company's clinical study accrual, which could also materially affect reported results of operations. For the three months ended March 31, 2025 and 2024, there were no material adjustments to the Company's prior period estimates of accrued expenses for clinical trials.

Property, Plant and Equipment

The Company records property, plant, and equipment at cost less depreciation and amortization. Depreciation is calculated using straight-line methods over the following estimated useful lives:

Animal facility equipment	7 years
Laboratory equipment	7 years
Leasehold improvements	Shorter of asset life or lease term
Office furniture and equipment	5 years
Vehicles	5 years

Repairs and maintenance expenses are expensed as incurred.

Impairment of long-lived assets

The Company reviews the recoverability of long-lived assets, including the related useful lives, whenever events or changes in circumstances indicate that the carrying amount of a long-lived asset may not be recoverable. If necessary, the Company compares the estimated undiscounted future net cash flows to the related asset's carrying value to determine whether there has been an impairment.

If an asset is considered impaired, the asset is written down to fair value, which is based either on discounted cash flows or appraised values in the period the impairment becomes known. The Company believes that long-lived assets are recoverable, and no impairment was deemed necessary, during the three months ended March 31, 2025 and 2024.

Stock-based compensation

FASB ASC Topic 718, *Compensation– Stock Compensation*, prescribes accounting and reporting standards for all share-based payment transactions in which employee and non-employee services are acquired. The Company recognizes compensation cost relating to stock-based payment transactions using a fair-value measurement method, which requires all stock-based payments to employees, directors, and non-employee consultants, including grants of stock options, to be recognized in operating results as compensation expense based on fair value over the requisite service period of the awards. The Company determines the fair value of common stock based on the closing market price at closing on the date of the grant.

In determining the fair value of stock-based awards, the Company utilizes the Black-Scholes option-pricing model, which uses both historical and current market data to estimate fair value. The Black-Scholes option-pricing model incorporates various assumptions, such as the value of the underlying common stock, the risk-free interest rate, expected volatility, expected dividend yield, and expected life of the options. For awards with performance-based vesting criteria, the Company estimates the probability of achievement of the performance criteria and recognizes compensation expense related to those awards expected to vest. No awards may have a term in excess of ten years. Forfeitures are recorded when they occur. Stock-based compensation expense is classified in the condensed consolidated statements of operations based on the function to which the related services are provided. The Company recognizes stock-based compensation expense over the vesting period.

Income taxes

Deferred income taxes reflect future tax effects of temporary differences between the tax and financial reporting basis of the Company’s assets and liabilities measured using enacted tax laws and statutory tax rates applicable to the periods when the temporary differences will affect taxable income. When necessary, deferred tax assets are reduced by a valuation allowance, to reflect realizable value, and all deferred tax balances are reported as long-term on the condensed consolidated balance sheets. Accruals are maintained for uncertain tax positions, as necessary.

The Company uses a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken, or expected to be taken, in a tax return. The Company has elected to treat interest and penalties related to income taxes, to the extent they arise, as a component of income taxes.

Revenue recognition

The Company’s revenue is primarily generated through grants from government and other (non-government) organizations.

Grant revenue is recognized during the period that the research and development services occur, as qualifying expenses are incurred or conditions of the grants are met. Deferred grant income represents grant proceeds received by the Company prior to the period in which the research and development services occur, as qualifying expenses are incurred, or conditions of the grants are met. The Company concluded that payments received under these grants represent conditional, nonreciprocal contributions, as described in ASC 958, *Not-for-Profit Entities*, and that the grants are not within the scope of ASC 606, *Revenue from Contracts with Customers*, as the organizations providing the grants do not meet the definition of a customer. Expenses for grants are tracked by using a project code specific to the grant, and the employees also track hours worked by using the project code.

Foreign Currency Translations and Transactions

Assets and liabilities of the Company's foreign subsidiary are translated at the year-end exchange rate. Operating results of the Company's foreign subsidiary are translated at average exchange rates during the period. Translation adjustments have no effect on net loss and are included in “Accumulated other comprehensive income (loss)” in the accompanying Condensed Consolidated Balance Sheets.

Comprehensive income (loss)

Comprehensive income (loss) includes net loss as well as other changes in stockholders’ equity that result from transactions and economic events other than those with stockholders. The components of comprehensive loss for the three months ended March 31, 2025 and 2024 consist of net loss, foreign currency translation adjustments from its subsidiaries not using the U.S. dollar as their functional currency, and unrealized gains and losses on available-for-sale debt securities.

Litigation

From time to time, the Company is involved in legal proceedings, investigations and claims generally incidental to its normal business activities. In accordance with U.S. GAAP, the Company accrues for loss contingencies when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Legal costs in connection with loss contingencies are expensed as incurred.

Earnings per share

In accordance with ASC 260, *Earnings per Share* ("ASC 260"), basic net income (loss) per share attributable to common stockholders is computed by dividing net income (loss) attributable to common stockholders by the weighted-average number of common stock outstanding during the period. Diluted net income (loss) per share attributable to common stockholders is computed by dividing the diluted net income (loss) attributable to common stockholders by the weighted-average number of common stock outstanding for the period including potential dilutive common shares such as stock options.

Segment reporting

In accordance with ASC 280, *Segment Reporting*, the Company's business activities are organized into one reportable segment, as only the Company's operating results in their entirety are regularly reviewed by the Company's chief operating decision maker to make decisions about resources to be allocated and to assess performance.

Australian Research and Development Tax Credit

The Company recognizes other income from Australian research and development incentives when there is reasonable assurance that the income will be received, the relevant expenditure has been incurred, and the consideration can be reliably measured. The research and development incentive is one of the key elements of the Australian Government's support for Australia's innovation system and is supported by legislative law primarily in the form of the Australian Income Tax Assessment Act 1997, as long as eligibility criteria are met. Under the program, a percentage of eligible research and development expenses incurred by the Company through its subsidiary in Australia are reimbursed.

Management has assessed the Company's research and development activities and expenditures to determine which activities and expenditures are likely to be eligible under the research and development incentive regime described above. At each period end, management estimates the refundable tax offset available to the Company based on available information at the time and it is included in other income in the condensed consolidated statements of operations.

(3) New accounting standards

Recently-adopted standards

In November 2023, the FASB issued ASU 2023-09, Improvements to Income Tax Disclosures, which requires entities to disclose disaggregated information about their effective tax rate reconciliations as well as expanded information on income taxes by jurisdiction. The standard is effective for fiscal years beginning after December 15, 2024 on a prospective basis. The Company discloses its income tax rate reconciliation in its annual consolidated financial statements only and does not expect the adoption to have a material impact on its consolidated financial statements.

Accounting Pronouncements Not Yet Adopted

In November 2024, the FASB issued ASU 2024-03, "Income Statement-Reporting Comprehensive Income-Expense Disaggregation Disclosures (Topic 220)". ASU 2024-03 requires additional disclosure in the notes to financial statements of specified information about certain expenses such as purchases of inventory, employee compensation, depreciation, intangible asset amortization, and depreciation and other expenses which are presented in the face of the income statement within continuing operations. This ASU is effective for annual periods beginning after December 15, 2026, and interim periods within annual periods beginning after December 15, 2027, with early adoption permitted. The Company is currently evaluating the impact of adopting this ASU on its condensed consolidated financial statements and disclosures.

(4) Revenue

Government grants

There was no revenue recognized for the three months ended March 31, 2025. Total revenue recognized from government grants was approximately $0.9 million for the three months ended March 31, 2024. The Company had various grants from the US Department of Defense that terminated in 2022. The Company satisfied all obligations under these arrangements as of December 31, 2024.

(5) Earnings per share

Since the Company reported a net loss for the three months ended March 31, 2025 and 2024, it was required by ASC 260 to use basic weighted-average shares outstanding when calculating diluted net loss per share for the three months ended March 31, 2025 and 2024, as the potential dilutive securities are anti-dilutive.

The following is a reconciliation of the numerator and denominator used to calculate basic earnings per share and diluted earnings per share for the three months ended March 31, 2025 and 2024:

	For The Three Months Ended March 31,	
	2025	2024
Calculation of basic and diluted loss per share attributable to the Company's shareholders		
Net loss attributable to the Company's shareholders	$ (5,196,773)	$ (5,025,745)
Weighted-average common shares outstanding – basic and diluted	9,291,641	9,241,940
Net loss per share, basic and diluted	$ (0.56)	$ (0.54)

The Company's potentially dilutive securities, which include stock options, restricted stock awards, common stock warrants, earnout shares, and contingently issuable earnout shares have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following potential common shares, presented based on amounts outstanding at each period end, from the computation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

	For The Three Months Ended March 31,	
	2025	2024
Stock options and awards	2,983,234	10,435
Convertible Debt	—	40,438
Common Stock Warrants (1)	2,233,407	2,233,407
Series A Preferred Stock (2)	6,669,742	6,704,127
Preferred Stock Warrants (3)	17,002,381	23,803,334
Contingently issuable Earnout Shares from unexercised Rollover Options	150,806	150,806
Total	29,039,570	32,942,547

(1) Contained within common stock warrants are the 575,000 shares of common stock underlying public warrants (the "Public Warrants"), 20,860 shares of common stock underlying warrants held by assignees of Big Cypress Holdings, LLC (the "Private Placement Warrants"), 30,000 shares underlying warrants held by Ladenburg Thalmann & Co. Inc. (the "Ladenburg Warrants"), 736,337 shares underlying warrants issued to the investors in the December 2022 Private Placement (the "the PIPE Warrants"), 21,091 shares underlying warrants issued to the placement agent in the December 2022 Private Placement (the "PIPE Placement Agent Warrants"), and 850,119 shares underlying the Preferred PIPE Placement Agent Warrants issued to the placement agent in the September 2023 Offering. See Note 12, *Warrants* for further details on the Company's outstanding warrants.

(2) Represents 6,669,742 shares of common stock underlying 42,019 and 42,236 issued, outstanding, and convertible shares of Series A-2 Preferred Stock for the three months ended March 31, 2025 and 2024, respectively. See Note 10, *Stockholders' Equity* for further details on the Company's preferred stock.

(3) Represents 17,002,381 shares of common stock underlying 107,115 outstanding Preferred Tranche C Warrants (as defined below). See Note 12, *Warrants* for further details on the Company's outstanding warrants.

(6) Property, plant and equipment

As of March 31, 2025 and December 31, 2024, the Company's property, plant and equipment was as follows:

	March 31, 2025	December 31, 2024
Laboratory equipment (1)	$ 11,344,007	$ 11,344,007
Animal facility leasehold improvements	8,357,667	8,357,667
Animal facility equipment	1,188,854	1,188,854
Leasehold improvements (1)	7,064,721	7,064,721
Vehicles	201,590	208,453
Office furniture and equipment (1)	1,778,231	1,778,231
Total Property, plant and equipment, gross	29,935,070	29,941,933
Less: accumulated depreciation and amortization	(15,324,154)	(14,573,924)
Property, plant and equipment, net	$ 14,610,916	$ 15,368,009

Depreciation and amortization expense was $0.8 million and $2.0 million for the three months ended March 31, 2025 and 2024, respectively.

(7) Leases

The Company has an operating lease for lab space from Sanford Health, under a lease that started in June 2014 and initially ended in June 2019, at which time the lease was extended through August 2024. This lease was renewed in January 2025 for a five-year-term ending on December 31, 2029. This lease can be terminated with one-year advance written notice and does not include an option to extend beyond the life of the current term. The lease costs are approximately $50 thousand per month through 2025, with an annual increase of 2% through 2029. The lease does not provide an implicit rate, and, therefore, the Company used an IBR of 9.90% as the discount rate when measuring the operating lease liability. The Company estimated the IBR based upon comparing interest rates available in the market for similar borrowings and the credit quality of the Company.

The Company entered into a lease for office, laboratory, and warehouse space in November 2020, which was amended in July 2022 to add additional administrative and lab space. This amended lease has a 3-year term, with options to extend for 3 additional periods of 3 years each. The options were not included in the right of use calculation as it was unclear as to whether or not the location will meet the Company's requirements beyond the next three years. The July 2022 amendment was accounted for as a separate contract under ASC 842 – *Leases*. This lease was renewed in November 2023. The lease costs are $36 thousand, $3 thousand, and $31 thousand per month for the original leased space on November 2020, the amendment on July 2022, and the November 2023 lease renewal, respectively. The Company used an IBR of 4.69%, 6.60%, and 8.14% as the discount rates when measuring the operating lease liability for the original leased space on November 2022, the amendment in July 2022, and the November 2023 lease renewal, respectively. The Company estimated the IBR based upon comparing interest rates available in the market for similar borrowings and the credit quality of the Company.

The Company entered into a lease for office space in April 2024. The Company leased 1,272 square feet, representing the Company's principal executive offices, in Miami Beach, Florida. The initial term of the lease is 62 months. The lease costs are approximately $7 thousand per month through 2024, with annual increases of 4% through 2029. The Company used an IBR of 7.12%, as the discount rate when measuring the operating lease liability. The operating lease does not include an option to extend beyond the life of the current term. The Company estimated the IBR based upon comparing interest rates available in the market for similar borrowings and the credit quality of the Company.

The Company has the following finance leases:

- In December 2018, the Company entered into a finance lease with Dakota Ag Properties for a new animal facility which includes the surrounding land. The facility and the land have been accounted for as separate lease components. The lease is based upon payback of $4 million in construction costs, with a 20-year term at an interest rate of 8%. The monthly payment for this lease is $34 thousand. The Company has the option to purchase the asset at any time during the term of the lease for the balance of the unamortized lease payments.
- In December 2018, the Company entered into an equipment lease for a 12,000-gallon propane tank that is located on the Company's animal facility. The lease is for five years, with an annual payment of $8 thousand. The Company has the option to purchase the asset at any time during the term of the lease for the balance of the unamortized lease payments.

The lease agreements do not require material variable lease payments, residual value guarantees or restrictive covenants.

The amortizable lives of the operating lease assets are limited by their expected lease terms. The amortizable lives of the finance lease assets are limited by their expected lives, as the Company intends to exercise the purchase options at the end of the leases. The following is the estimated useful lives of the finance lease assets:

Animal Facility	40 years
Equipment	3–7 years
Land	Indefinite

The Company's weighted-average remaining lease term and weighted-average discount rate for operating and finance leases as of March 31, 2025 and December 31, 2024 are:

	March 31, 2025		December 31, 2024	
	Operating	Finance	Operating	Finance
Weighted-average remaining lease term (years)	4.19	13.67	2.85	13.92
Weighted-average discount rate (percentage)	9.37%	7.72%	7.76%	7.72%

The table below reconciles the undiscounted future minimum lease payments under non-cancelable leases with terms of more than one year to the total lease liabilities recognized on the condensed consolidated balance sheets as of March 31, 2025:

	Operating	Finance
2025 - remaining	$ 790,654	$ 301,123
2026	1,007,018	401,496
2027	712,653	401,496
2028	728,650	401,496
2029	708,989	401,496
Thereafter	—	3,580,006
Undiscounted future minimum lease payments	3,947,964	5,487,113
Less: Amount representing interest payments	(687,381)	(2,103,249)
Total lease liabilities	3,260,583	3,383,864
Less current portion	(793,360)	(145,333)
Noncurrent lease liabilities	$ 2,467,223	$ 3,238,531

Operating lease expense was approximately $268 thousand and $221 thousand for the three months ended March 31, 2025 and 2024, respectively. Operating lease costs are included within research and development expenses on the condensed consolidated statements of operations.

Finance lease costs for the three months ended March 31, 2025 included approximately $22 thousand in right-of-use asset amortization and approximately $66 thousand of interest expense. Finance lease costs for the three months ended March 31, 2024 included approximately $22 thousand in right-of-use-asset amortization and approximately $68 thousand of interest expense. Finance lease costs are included within research and development expenses on the condensed consolidated statements of operations.

Cash payments under operating leases were approximately $213 thousand and $231 thousand for the three months ended March 31, 2025 and 2024, respectively. Cash payments under finance leases were approximately $100 thousand and $100 thousand for the three months ended March 31, 2025 and 2024, respectively.

(8) Accrued Expenses and Other Current Liabilities

As of March 31, 2025 and December 31, 2024, accrued expenses and other current liabilities consisted of the following:

	March 31, 2025	December 31, 2024
Payroll and employee-related costs	$ 4,002,376	$ 4,170,381
Accrued research and development expenses	743,100	237,164
Accrued legal fees	191,725	42,159
Accrued financing fees payable	479,250	479,250
Accrued interest	21,997	22,443
Other accrued expenses	617,268	521,639
	$ 6,055,716	$ 5,473,036

(9) Notes Payable

Insurance Financing Note

We obtained financing for certain Director & Officer liability insurance policy premiums. In 2024, we entered into an agreement that assigned to AFCO Direct (the "Lender") a first priority lien on and security interest in the financed policies and any additional premium required in the financed policies including (a) all returned or unearned premiums, (b) all additional cash contributions or collateral amounts assessed by the insurance companies in relation to the financed policies and financed by Lender, (c) any credits generated by the financed policies, (d) dividend payments, and (e) loss payments which reduce unearned premiums. If any circumstances exist in which premiums related to any Financed Policy could become fully earned in the event of loss, Lender shall be named a loss-payee with respect to such policy.

The total premiums, taxes, and fees financed under the current insurance financing agreement are approximately $516 thousand for AFCO Direct, with an annual interest rate of 7.37%. In consideration of the premium payment by the Lender to the insurance companies or the Agent or Broker (as defined in the agreement with the Lender), we unconditionally promise to pay the Lender the amount financed plus interest and other charges permitted under the agreement.

At March 31, 2025 and December 31, 2024, we recognized approximately $139 thousand and $276 thousand, respectively, as an insurance financing note payable in our condensed consolidated balance sheets. We incurred $4 thousand and $8 thousand of interest expense related to the insurance financing note for the three months ended March 31, 2025 and 2024, respectively. Our current insurance financing agreement is being repaid through installment payments, with the final payment scheduled for September 22, 2025.

In 2023, we entered into an agreement with First Insurance Funding, which assigned them a first-priority lien on the security interest in the financed policies and associated rights. During the three months ended March 31, 2024, we made payments on the prior insurance financing agreement with First Insurance Funding with an original principal balance of $765 thousand and an annual interest rate of 7.96%. This prior agreement, structured with similar lien and collateral terms, was fully repaid upon the final installment on September 22, 2024.

(10) Stockholders' Equity

Authorized and Outstanding Capital Stock

The total number of shares of the Company's authorized capital stock is 810,000,000. The total amount of authorized capital stock consists of 800,000,000 shares of common stock and 10,000,000 shares of preferred stock.

Series A Preferred Stock and Warrants

On September 29, 2023, the Company entered into a securities purchase agreement (the "September 2023 Purchase Agreement") with certain accredited investors, pursuant to which the Company agreed to issue and sell, in a private placement (the "September 2023 Offering"), (i) 7,500 shares of Series A-1 Convertible Preferred Stock, par value $0.0001 per share (the "Series A-1 Preferred Stock"), (ii) tranche A warrants (the "Preferred Tranche A Warrants") to acquire shares of Series A-1 Preferred Stock or Series A-3 Preferred Stock, par value $0.0001 per share, (iii) tranche B warrants to acquire shares of Series A-3 Preferred Stock, par value $0.0001 per share (the "Preferred Tranche B Warrants"), and (iv) tranche C warrants to purchase Series A-3 Preferred Stock, par value $0.0001 per share (the "Preferred Tranche C Warrants" and together with the Preferred Tranche A Warrants, and Preferred Tranche B Warrants, the "Preferred Warrants"). The Series A-1 Preferred Stock, Series A-2 Preferred Stock, and Series A-3 Preferred Stock are collectively referred to in this section as the "Series A Preferred Stock."

During the fourth quarter of 2023, holders exercised Preferred Tranche A Warrants to purchase an aggregate of 59,654 shares of Series A-1 Preferred Stock for gross proceeds of approximately $59.65 million. Unexercised Preferred Tranche A Warrants, together with the associated Tranche B Warrants, were forfeited or cancelled in accordance with the terms of the September 2023 Purchase Agreement. Preferred Tranche C Warrants remain outstanding and exercisable until the five (5) year anniversary of their exercisability date.

The Company issued an aggregate of 67,154 shares of Series A-1 Preferred Stock in connection with the September 2023 Offering and the exercise of the Preferred Tranche A Warrants.

Following receipt of required stockholder approval, 24,918 shares of Series A-1 Preferred Stock were automatically converted into an aggregate of 3,954,674 shares of common stock at a conversion price of $6.30 per share (approximately 158.8 shares of common stock

for each share of Series A-1 Preferred Stock). The remaining 42,236 shares of Series A-1 Preferred Stock were converted into an equal number of shares of Series A-2 Preferred Stock, which are convertible into common stock at the same conversion price of $6.30 per share, subject to certain beneficial ownership limitations as set forth in the Certificate of Designation of Preferences, Rights and Limitations of the Series A Convertible Voting Preferred Stock (the "Certificate of Designation"). During the twelve months ended December 31, 2024, 217 shares of Series A-2 Preferred Stock were converted into 34,445 shares of common stock.

Holders of Series A Preferred Stock are entitled to receive dividends on an as-converted-to-common-stock basis and to vote together with holders of common stock, subject to a beneficial ownership blocker of either 4.99% or 9.99%, as elected by each holder.

For additional information regarding the Company's outstanding warrants, refer to Note 12, *Warrants*.

Earnout Shares

On October 22, 2021 (the "Closing Date"), the Company consummated the business combination (the "Business Combination") contemplated by the agreement and plan of merger, dated as of June 21, 2021, as amended on August 12, 2021, made by and among Big Cypress Acquisition Corp., a Delaware corporation ("BCYP"), Big Cypress Merger Sub Inc., a Delaware corporation ("Merger Sub"), the Company, and Shareholder Representative Services LLC, a Colorado limited liability company, solely in its capacity as the representative, agent and attorney-in-fact of the SAB Stockholders (the "Business Combination Agreement "). Upon closing of the Business Combination, Merger Sub merged with SAB Biotherapeutics, with SAB Biotherapeutics as the surviving company of the merger. Upon closing of the Business Combination, BCYP changed its name to "SAB Biotherapeutics, Inc.".

Additionally, the Business Combination Agreement included an earnout provision whereby the shareholders of SAB Biotherapeutics shall be entitled to receive additional consideration ("Earnout Shares") if the Company meets certain Volume Weighted Average Price ("VWAP") thresholds, or a change in control with a per share price exceeding the VWAP thresholds within a five-year period immediately following the Closing.

The Earnout Shares shall be released in four equal increments as follows:

(i) 25% of the Earnout Shares shall be released if, at any time during the five (5)-year period immediately following the Closing Date, the VWAP of the Company's publicly traded common stock is greater than or equal to $150.00 for any twenty (20) trading days within a period of thirty (30) consecutive trading days (the "First Earnout").

(ii) 25% of the Earnout Shares shall be released if, at any time during the five (5)-year period immediately following the Closing Date, the VWAP of the Company's publicly traded common stock is greater than or equal to $200.00 for any twenty (20) trading days within a period of thirty (30) consecutive trading days (the "Second Earnout").

(iii) 25% of the Earnout Shares shall be released if, at any time during the five (5)-year period immediately following the Closing Date, the VWAP of the Company's publicly traded common stock is greater than or equal to $250.00 for any twenty (20) trading days within a period of thirty (30) consecutive trading days (the "Third Earnout").

(iv) 25% of the Earnout Shares shall be released if, at any time during the five (5)-year period immediately following the Closing Date, the VWAP of the Company's publicly traded common stock is greater than or equal to $300.00 for any twenty (20) trading days within a period of thirty (30) consecutive trading days (the "Fourth Earnout" and together with the First Earnout, the Second Earnout and the Third Earnout, the "Earnouts").

Pursuant to the terms of the Business Combination Agreement, SAB Biotherapeutics' securityholders (including vested option holders) who own SAB Biotherapeutics securities immediately prior to the Closing Date will have the contingent right to receive their pro rata portion of (i) an aggregate of 1,200,000 Earnout Shares, of which 150,806 are contingently issuable based upon future satisfaction of the aforementioned VWAP thresholds. The remaining 1,049,194 are legally issued and outstanding, if the Company does not meet the above VWAP thresholds, or a change in control with a per share price below the VWAP thresholds occurs within a five-year period immediately following the Closing Date, the shares will be returned to the Company.

The Earnout Shares are indexed to the Company's equity and meet the criteria for equity classification. On the Closing Date, the fair value of the 1,200,000 Earnout Shares was $101.3 million. The Company recorded the Earnout Shares as a stock dividend by reducing additional paid-in capital, which was offset by the increase in additional paid-in capital associated with the Business Combination.

Sales Agreement

On January 26, 2024, the Company entered into a Controlled Equity Offering Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co. ("Cantor"), relating to shares of common stock. In accordance with the terms of the Sales Agreement, the Company may offer and sell shares of our common stock having an aggregate offering price of up to $20,000,000 from time to time through Cantor, acting as the Company's sales agent. For the period ended March 31, 2025, the Company did not offer or sell any shares of common stock pursuant to the Sales Agreement, and up to $20,000,000 remains to be sold under the Sales Agreement.

Reverse Stock Split

On January 5, 2024, the Company consummated a 1-for-10 reverse split of the Company's common stock (the "Reverse Stock Split").

(11) Stock Option Plans

On August 5, 2014, the Company approved a stock option grant plan (the "2014 Equity Incentive Plan") for employees, directors, and non-employee consultants, which provides for the issuance of options to purchase common stock. As of March 31, 2025, there were 728,650 shares of common stock reserved for issuance under the 2014 Equity Incentive Plan, with 429,951 shares of common stock available for grant and 298,699 shares of common stock underlying outstanding grants.

The Company adopted the 2021 Omnibus Equity Incentive Plan (as amended, the "2021 Equity Incentive Plan", and collectively with the 2014 Equity Incentive Plan, the "Equity Compensation Plans"), which reserved 1,100,000 shares of common stock for issuance. At of the beginning of each calendar year, the shares reserved for future issuance shall increase by two percent (2%) of the total number of shares of common stock issued and outstanding on a fully-diluted basis as of the end of the Company's immediately preceding fiscal year (or such lesser number of shares, including no shares, determined by the Board in its sole discretion); provided, however, that the aggregate number of additional shares available for issuance pursuant to this paragraph (b) shall not exceed a total of 500,000 shares (the "Annual Increase"). In June 2024, the Company held the 2024 Annual Meeting of Stockholders (the "2024 Annual Meeting"). At the 2024 Annual Meeting, the stockholders of the Company approved an amendment to the 2021 Equity Incentive Plan which, among other things, increased the number of shares of common stock available for grant under the 2021 Equity Incentive Plan by 3,900,000 and increased the Annual Increase from 2% to 5% (the "2021 Plan Amendment"). As of March 31, 2025, there were 5,460,292 shares of common stock reserved for issuance under the 2021 Equity Incentive Plan, with 2,775,757 shares of common stock available for grant and 2,684,535 shares of common stock underlying outstanding grants.

The Company offers an Employee Stock Purchase Plan ("ESPP") that allows eligible employees to purchase shares of common stock at a discount of up to 15% from the lower of the fair market value at the beginning or end of the offering period. Under ASC 718, the ESPP is classified as compensatory, and stock-based compensation expense is recognized for the fair value of the discount and any embedded option features. No shares were issued under the ESPP during either the three months ended March 31, 2025 and 2024, and no stock-based compensation expense was recognized. As of March 31, 2025, 100,000 shares remained available for future issuance.

The expected term of the stock options was estimated using the "simplified" method, as defined by the SEC's Staff Accounting Bulletin No. 107, *Share-Based Payment*. The volatility assumption was determined by examining the historical volatilities for industry peer companies, as the Company does not have sufficient trading history for its common stock. The risk-free interest rate assumption is based on the U.S. Treasury instruments whose term was consistent with the expected term of the options. The dividend assumption is based on the Company's history and expectation of dividend payouts. The Company has never paid dividends on its common stock and does not anticipate paying dividends on its common stock in the foreseeable future. Therefore, the Company has assumed no dividend yield for purposes of estimating the fair value of the options.

Stock Options

Stock option activity for employees and non-employees under the Equity Compensation Plans for the three months ended March 31, 2025 was as follows:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (periods)	Aggregate Intrinsic Value
Outstanding options, December 31, 2024	2,967,950	$ 7.05	8.64	$ 1,186,052
Expired	(11,895)	$ 17.22		
Outstanding options, March 31, 2025	2,956,055	$ 7.01	8.43	$ —
Options vested and exercisable, March 31, 2025	888,287	$ 14.17	6.97	$ —

Total unrecognized compensation cost related to non-vested stock options as of March 31, 2025 was approximately $5.7 million and is expected to be recognized within future operating results over a weighted-average period of 2.83 years.

There were no stock options granted during the three months ended March 31, 2025. During the three months ended March 31, 2025, 285,060 options vested with a fair value totaling $1.1 million.

The weighted average grant date fair value of options granted during the three months ended March 31, 2024, was $3.94 per share. During the three months ended March 31, 2024, 76,763 options vested with a fair value totaling $0.6 million.

The estimated fair value of stock options granted to employees and consultants during the three months ended March 31, 2025 and 2024, were calculated using the Black-Scholes option-pricing model using the following assumptions:

	For The Three Months Ended March 31,			
	2025		2024	
Expected volatility	*	%	89.9 - 90.4	%
Weighted-average volatility	*	%	89.9	%
Expected dividends	*	%	—	%
Expected term (in periods)	*		5.73 - 6.08	
Risk-free rate	*	%	4.26 - 4.32	%

* No options were granted during the three months ended March 31, 2025.

Restricted Stock

Stock award activity for employees and non-employees under the Equity Compensation Plans for the three months ended March 31, 2025 was as follows:

	Number of shares		Weighted Average Grant Date Fair Value
Unvested as of December 31, 2024	31,362	$	10.33
Vested and issued	(4,183)	$	11.55
Unvested as of March 31, 2025	27,179	$	10.15

At March 31, 2025, the Company had an aggregate of $260 thousand of unrecognized equity-based compensation related to restricted stock units outstanding. During the three months ended March 31, 2025, 4,183 shares with a fair value of $48 thousand vested. Of the 4,183 restricted stock units issued, 1,354 units were returned to the Company in exchange for the Company for paying the payroll withholding taxes. For the three months ended March 31, 2025, restricted stock units of 2,829, net, were issued. The unrecognized expense for restricted stock units is expected to be recognized within future operating results over a weighted average period of 1.63 years.

Stock-based compensation expense

Stock-based compensation expense for the three months ended March 31, 2025 and 2024 was as follows:

	For The Three Months Ended March 31,			
	2025		2024	
Research and development	$	332,289	$	216,351
General and administrative		280,662		401,094
Total	$	612,951	$	617,445

(12) Warrants

Public Warrants

Each whole Public Warrant entitles the holder to purchase one share of the Company's common stock at a price of $115.00 per share (as adjusted following the Reverse Stock Split), subject to adjustment as discussed herein.

Once the warrants become exercisable, the Company may call the warrants for redemption:

- in whole and not in part;
- at a price of $0.01 per warrant;
- upon not less than 30 days' prior written notice of redemption (the "30-day redemption period") to each warrant holder; and if, and only if, the reported last sale price of the common stock equals or exceeds $180.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like) for any 20 trading days within a 30-trading day period ending three business days before the Company send the notice of redemption to the warrant holders.

If the Company calls the warrants for redemption as described above, management will have the option to require any holder that wishes to exercise its warrant to do so on a "cashless basis." If management takes advantage of this option, all holders of warrants would pay the exercise price by surrendering their warrants for that number of shares of common stock equal to the quotient obtained by dividing (x) the product of the number of shares of common stock underlying the warrants, multiplied by the excess of the "fair market value" (defined below) over the exercise price of the warrants by (y) the fair market value. The "fair market value" shall mean the average reported last sale price of the common stock for the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of warrants.

Each warrant will expire on the fifth anniversary of the Business Combination, which occurred on October 22, 2021. As a result, all outstanding warrants will expire on October 22, 2026, unless earlier exercised or redeemed in accordance with their terms. Once expired, the warrants will have no further value and will no longer be exercisable.

Private Placement Warrants

The Private Placement Warrants and the common stock issuable upon the exercise of the Private Placement Warrants were not transferable, assignable or saleable until after the completion of the Company's merger transaction in 2021. Additionally, the Private Placement Warrants are exercisable on a cashless basis and will be non-redeemable as long as they are held by the initial purchasers or their permitted transferees. If the Private Placement Warrants are held by someone other than the initial purchasers or their permitted transferees, the Private Placement Warrants will be redeemable by the Company and exercisable by such holders on the same basis as the Public Warrants.

Each warrant will expire on the fifth anniversary of the Business Combination, which occurred on October 22, 2021. As a result, all outstanding warrants will expire on October 22, 2026, unless earlier exercised or redeemed in accordance with their terms. Once expired, the warrants will have no further value and will no longer be exercisable.

PIPE Warrants and PIPE Placement Agent Warrants

In December 2022, the Company entered into a securities purchase agreement with certain institutional and accredited investors for the sale by the Company of 736,337 shares of common stock and the PIPE Warrants to purchase up to 736,337 shares of common stock, in a private placement offering. The combined purchase price of each share and accompanying PIPE Warrant was $10.80 (the "December 2022 Private Placement"). Three directors of the Company participated in the December 2022 Private Placement, each paying a $1.25 premium per share and accompanying PIPE Warrant. The PIPE Warrants, including those purchased by the participating directors of the Company, are exercisable at an exercise price equal to $10.80 per share, and are exercisable for five years from the date of issuance. The Company received gross proceeds of approximately $8.0 million before deducting transaction related fees and expenses. The Company paid Brookline Capital Markets, the placement agent, a cash fee equal to seven percent of the gross proceeds received by the Company in the December 2022 Private Placement. The Company also issued Brookline Capital Markets the PIPE Placement Agent Warrants to purchase up to an aggregate of 21,091 shares of common stock, equal to 7% of the number of shares purchased by investors introduced to the Company by Brookline Capital Markets. The PIPE Placement Agent Warrants have an exercise price equal to $13.50 per share and are exercisable six months from the date of issuance and expire five years from the date of issuance.

2023 Ladenburg Agreement Warrants

On March 21, 2023, the Company entered into a settlement agreement with Ladenburg Thalmann & Co. Inc. ("Ladenburg"), effective March 23, 2023 (the "2023 Ladenburg Agreement", regarding the action brought by Ladenburg, the "Ladenburg Action"). In connection with the 2023 Ladenburg Agreement, on March 24, 2023, the Company (i) issued the Ladenburg Warrants to purchase up to 30,000 shares of common stock, exercisable for three years from the date of issuance at $5.424 per share; and (ii) furnished to Ladenburg a one-time cash payment of $500 thousand. Pursuant to the terms and subject to the conditions set forth in the 2023 Ladenburg Agreement, the Company will (i) no later than June 30, 2023, pay $1.5 million to Ladenburg in cash or shares of common stock, at the Company's option; and (ii) no later than December 31, 2023, pay $1.1 million to Ladenburg in cash or shares of common stock, at the Company's option. Following the completion of the Company's obligations under the 2023 Ladenburg Agreement, Ladenburg has agreed to dismiss the Ladenburg Action with prejudice and extinguish any and all obligations of the Company in connection therewith. All consideration contemplated by the 2023 Ladenburg Agreement are contained within accrued expenses and other current liabilities within the Company's condensed consolidated balance sheet as of December 31, 2022. On June 30, 2023, in accord with the terms of the agreement, the Company issued 191,689 shares of common stock to satisfy a portion of its obligations under the 2023 Ladenburg Agreement. Following the completion of the 2023 Private Placement, the Company settled the remaining $1.1 million due to Ladenburg in cash.

September 2023 Purchase Agreement Warrants

As of March 31, 2025, the Company had outstanding 107,115 Preferred Tranche C Warrants to purchase shares of Series A-3 Preferred Stock for an aggregate exercise price of approximately $107.1 million.

The Preferred Tranche C Warrants were classified as derivative liabilities because they are redeemable for cash upon occurrence of a Fundamental Transaction, (as defined in the Forms for such warrants), which may be outside the control of the Company.

For more information see Note 10, *Stockholders' Equity.*

Preferred PIPE Placement Agent Warrant

On November 21, 2023, the Company issued to Chardan Capital Markets LLC, the placement agent for the September 2023 Offering, a warrant to purchase 850,119 shares (as adjusted following the Reverse Stock Split) of the Company's common stock ("the Preferred PIPE Placement Agent Warrants"). The Preferred PIPE Placement Agent Warrants have an exercise price equal to $6.30 per share (subject to adjustment for stock dividends and splits) and are exercisable in whole or in part, at any time or times on or after the issuance date and on or before October 2, 2028. The Preferred PIPE Placement Agent Warrant was classified in equity in additional paid-in capital.

The following table summarizes warrant activity for the three months ended March 31, 2025 and 2024:

	Outstanding December 31, 2024	Warrants Issued	Warrants Exercised	Warrants Forfeited	Outstanding March 31, 2025
Transaction					
Business Combination Public Warrants	575,000	—	—	—	575,000
Private Placement Warrants	20,860	—	—	—	20,860
PIPE Warrants	736,337	—	—	—	736,337
PIPE Placement Agent Warrants	21,091	—	—	—	21,091
Ladenburg Warrants	30,000	—	—	—	30,000
Preferred Tranche B Warrants (1)	42,846	—	—	42,846	—
Preferred Tranche C Warrants	107,115	—	—	—	107,115
Preferred PIPE Placement Agent Warrants	850,119	—	—	—	850,119

(1) On January 1, 2025, 42,846 Preferred Tranche B warrants expired, unexercised. The Company recognized a gain of $3 thousand in other income in our condensed consolidated statement of operations, representing the fair value of the warrants at expiration. The valuation as of December 31, 2024, was based on a risk-free interest rate of 3.93%, an expected remaining term of 0.23 periods, implied volatility of 75%, and an underlying stock price of $309.37.

	Outstanding December 31, 2023	Warrants Issued	Warrants Exercised	Warrants Forfeited	Outstanding March, 31, 2024
Transaction					
Business Combination Public Warrants	575,000	—	—	—	575,000
Private Placement Warrants	20,860	—	—	—	20,860
PIPE Warrants	736,337	—	—	—	736,337
PIPE Placement Agent Warrants	21,091	—	—	—	21,091
Ladenburg Warrants	30,000	—	—	—	30,000
Tranche B Warrants	42,846	—	—	—	42,846
Tranche C Warrants	107,115	—	—	—	107,115
Preferred PIPE Placement Agent Warrants	850,119	—	—	—	850,119

Presentation and Valuation of the Warrants — Liability Classified Warrants

Public Warrants and Private Placement Warrants

The Public Warrants and Private Placement Warrants are accounted for as liabilities in accordance with ASC 815-40, *Derivatives and Hedging—Contracts in Entity's Own Equity* and were presented within warrant liabilities on the condensed consolidated balance sheets as of March 31, 2025 and December 31, 2024. The initial fair value of the warrant liabilities was measured at fair value at the Closing Date, and changes in the fair value of the warrant liabilities were presented within changes in fair value of warrant liabilities in the condensed consolidated statements of operations for three months ended March 31, 2025 and 2024.

On the Closing Date, the Company established the fair value of the Private Placement Warrants utilizing both the Black-Scholes Merton formula and a Monte Carlo Simulation (the "MCS") analysis. Specifically, the Company considered an MCS to derive the implied volatility in the publicly-listed price of the Public Warrants. The Company then considered this implied volatility in selecting the volatility for the application of a Black-Scholes Merton model for the Private Placement Warrants. The Company determined the fair value of the Public Warrants by reference to the quoted market price.

The Public Warrants were classified as a Level 1 fair value measurement, due to the use of the quoted market price, and the Private Placement Warrants held privately by assignees of Big Cypress Holdings LLC, were classified as a Level 3 fair value measurement, due to the use of unobservable inputs. See Note 13, *Fair Value Measurements,* for changes in fair value of the Private Placement Warrants.

The key inputs into the valuations as of March 31, 2025 and December 31, 2024 were as follows:

	March 31, 2025	December 31, 2024
Risk-free interest rate	3.98%	4.19%
Expected term remaining (periods)	1.56	1.81
Implied volatility	212.3%	160.9%
Closing common stock price on the measurement date	$ 1.36	$ 3.79

Preferred Warrants

Should the Company enter into or be party to a fundamental transaction, the Company will be required to purchase all outstanding Warrants from the holders by paying cash in an amount equal to the Black Scholes Value of the unexercised portion of each Preferred Warrant. As a result, the Preferred Warrants are accounted for as derivative liabilities in accordance with ASC 480 and ASC 815-40, *Derivatives and Hedging—Contracts in Entity's Own Equity* and were presented within warrant liabilities on the condensed consolidated balance sheets as of March 31, 2025 and December 31, 2024. The initial fair value of the warrant liabilities was measured at fair value at the Closing Date, and changes in the fair value of the warrant liabilities were presented within changes in fair value of warrant liabilities in the condensed consolidated statements of operations and comprehensive loss for the three months ended March 31, 2025 and 2024.

The Company established the fair value of the Preferred Warrants utilizing the Black-Scholes Merton formula.

All tranches of the Preferred Warrants were classified as Level 3 fair value measurements, due to the use of unobservable inputs. See Note 13, *Fair Value Measurements,* for changes in fair value of the Preferred Warrants.

The key inputs utilized in determining the fair value of each Preferred Tranche C Warrant as of March 31, 2025 and December 31, 2024 were as follows:

	March 31, 2025	December 31, 2024
Risk-free interest rate (1)	3.91%	4.32%
Expected term remaining (periods) (1)	3.66	3.91
Implied volatility	95.0%	95.0%
Underlying Stock Price (Preferred Series A)	$ 110.89	$ 309.37

(1) Reflects a probability-weighted input derived from multiple Black-Scholes calculations. These calculations incorporate the Company's estimated probability of dissolution, should SABS' intellectual property fail to yield positive results in forthcoming clinical trials, potentially leading to dissolution before 2028. The probability was 38.5% as of March 31, 2025 and December 31, 2024.

(13) Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The

following fair value hierarchy classifies the inputs to valuation techniques that would be used to measure fair value into one of three levels:

Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

Level 3: Unobservable inputs that reflect the reporting entity's own assumptions.

The following tables present information about the Company's assets and liabilities that are measured at fair value on a recurring basis at March 31, 2025 and December 31, 2024, and indicate the fair value hierarchy of the valuation inputs the Company utilized to determine such fair value:

	As of March 31, 2025			
	Total	Quoted Prices In Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)
Assets:				
Cash equivalents				
Money market funds	$ 4,088,334	$ 4,088,334	$ —	$ —
Short-term investments				
Mutual funds	4,718,924	4,718,924	—	—
U.S. treasury securities	2,491,075	2,491,075	—	—
Liabilities:				
Public Warrant liability	$ 200,675	$ 200,675	$ —	
Private Placement Warrant liability	7,280	—	—	7,280
Preferred Warrants	1,145,501	—	—	1,145,501

	As of December 31, 2024			
	Total	Quoted Prices In Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)
Assets:				
Cash equivalents				
Money market funds	$ 3,460,221	$ 3,460,221	$ —	$ —
U.S. treasury securities	3,248,959	3,248,959	—	—
Short-term investments				
Mutual funds	5,638,567	5,638,567	—	—
U.S. treasury securities	6,224,179	6,224,179	—	—
Liabilities:				
Public Warrant liability	$ 432,975	$ 432,975	$ —	
Private Placement Warrant liability	15,708	—	—	15,708
Preferred Warrants	5,940,543	—	—	5,940,543

The following table provides a summary of the changes in Level 3 fair value measurements for the Private Placement Warrant liability:

Balance, December 31, 2024	$ 15,708
Change in fair value of Private Placement Warrant liability	(8,428)
Balance, March 31, 2025	7,280

The following table provides a summary of the changes in Level 3 fair value measurements for the Preferred Warrant liabilities:

Balance, December 31, 2024	$	5,940,543
Change in fair value of the Preferred Warrant liabilities		(4,795,042)
Balance, March 31, 2025		1,145,501

As of March 31, 2025 and December 31, 2024, the Company did not have any other assets or liabilities that are recorded at fair value on a recurring basis.

The Company believes that the carrying amounts of its cash and cash equivalents, accrued interest receivable, notes payable, accrued expenses and other current liabilities approximate their fair values due to their near-term maturities.

(14) Investments

Debt Securities

At March 31, 2025 the fair value and amortized cost of the Company's available-for-sale debt securities, summarized by type of security, consisted of the following:

	As of March 31, 2025			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Short-term:				
U.S. treasury securities	$ 2,491,403	$ 156	$ (484)	$ 2,491,075
Total	2,491,403	156	(484)	2,491,075

At December 31, 2024 the fair value and amortized cost of the Company's available-for-sale debt securities, summarized by type of security, consisted of the following:

	As of December 31, 2024			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Short-term:				
U.S. treasury securities	$ 6,223,532	$ 1,306	$ (659)	$ 6,224,179
Total	6,223,532	1,306	(659)	6,224,179

There was one security in an unrealized loss position at March 31, 2025 and December 31, 2024, which has been in a continuous unrealized loss position for less than 12 months. The unrealized losses on the Company's available-for-sale debt securities as of March 31, 2025 and December 31, 2024 were caused by fluctuations in market value and interest rates as a result of the economic environment. The Company concluded that an allowance for credit losses was unnecessary as of March 31, 2025 and December 31, 2024 because the decline in the market value was attributable to changes in market conditions and not credit quality, and that it is neither management's intention to sell nor is it more likely than not that the Company will be required to sell these investments prior to recovery.

Gross realized gains and losses on the sale of short-term investments are included in other income in the Company's condensed consolidated statements of operations and comprehensive loss. The Company had no realized gains and losses for the three months ended March 31, 2025 and 2024.

Equity Securities

During three months ended March 31, 2025, the Company recognized total net gains and losses on equity securities of $1 thousand, comprised of $7 thousand of unrealized loss on securities still held as of March 31, 2025 and $8 thousand of realized gain on securities sold during the period. These amounts are included in other income (expense) in the condensed consolidated statements of operations. During the three months ended March 31, 2024, the Company recognized total net gains and losses on equity securities of $7 thousand, from $7 thousand of unrealized gains on securities still held as of March 31, 2024. These amounts are included in other income (expense) in the condensed consolidated statements of operations.

Accrued interest receivable, related to the above investment securities amounted to $21 thousand and $55 thousand as of March 31, 2025 and December 31, 2024 and are included within accrued interest receivable on the condensed consolidated balance sheets.

(15) Income Taxes

Due to current and prior year losses the Company does not expect to have any Income Tax Provision.

The Company continues to record a valuation allowance on its net deferred tax assets. The valuation increased by approximately $2.5 million during the three months ended March 31, 2025. The Company has not recognized any reserves for uncertain tax positions.

(16) Related Party Transactions

For the three months ended March 31, 2025 and 2024, there were no related party transactions with beneficial owners of 5% or more of any class of the Company's voting securities, immediate family members of any of the foregoing persons, and any entities in which any of the foregoing is an executive officer or is an owner of 5% or more ownership interest.

(17) Employee Benefit Plan

The Company sponsors a defined contribution retirement plan. All the Company's employees are eligible to be enrolled in the employer-sponsored contributory retirement savings plan, which include features under Section 401(k) of the Internal Revenue Code of 1986, as amended, and provides for Company matching contributions. The Company's contributions to the plan are determined by its Board of Directors, subject to certain minimum requirements specified in the plan. The Company has historically made matching contributions of 100% on 3% of the employee contributions, with an additional 50% match on the next 2% of employee contributions. The Company made contributions of approximately $136 thousand during the three months ended March 31, 2025, and $157 thousand, during the three months ended March 31, 2024.

(18) Commitments and Contingencies

The Company is not a party to any litigation, and, to its best knowledge, no action, suit, or proceeding has been threatened against the Company which are expected to have a material adverse effect on its financial condition, results of operations or liquidity.

(19) Segment Reporting

Operating segments are defined as components of the entity for which separate financial information is made available and that is regularly evaluated by the chief operating decision maker (CODM) in making decisions regarding resource allocation and assessing performance. The Company's CODM is its chief executive officer and the Company manages its operations as a single segment for the purposes of assessing performance and making operating decisions. The Company is focused on the development of a human anti-thymocyte globulin focused on preventing or delaying the progression of T1D.

The CODM assesses the Company's performance by reviewing GAAP operating expense and significant expenses by function along with the annual budget. The chief operating decision maker considers budget-to-actual variances on a quarterly basis when making decisions about the allocation of operating and capital resources.

The following table is representative of the significant expense categories regularly provided to the CODM when managing the Company's single reporting segment. A reconciliation to condensed consolidated operating expenses as our single segment operating loss for the three months ended March 31, 2025 and 2024 is included in the table below:

	Three Months Ended March 31,	
	2025	2024
Direct research and development expenses		
Research and development salaries and benefits	$ 2,651,894	$ 1,878,218
Clinical trial expense	1,927,208	806,060
Lab supplies and animal care	556,421	650,495
Lab services, consulting, and other direct research costs	942,704	1,976,881
Total direct research and development expenses	6,078,227	5,311,654
Indirect research and development expenses	1,246,805	2,618,065
Share based compensation (research and development)	332,289	216,351
Total research and development expense	7,657,321	8,146,070
General and administrative expense		
Administrative payroll	1,352,628	1,777,659
Professional fees and travel	425,638	652,580
Insurance, office expense, and other administrative expenses	1,055,853	1,357,788
Share based compensation (general and administrative)	280,662	401,094
Total general and administrative expenses	3,114,781	4,189,121
Total operating expense	$ 10,772,102	$ 12,335,191

The measure of segment assets is reported on the Condensed Consolidated Balance Sheets as Cash and cash equivalents and Short-term investments.

Long-lived assets are reported on the Condensed Consolidated Balance Sheets as Property, plant and equipment, net of accumulated depreciation and these assets are held in the U.S.

(19) Subsequent Events

The Company evaluated subsequent events through the date of issuance of these condensed consolidated financial statements. The Company has no subsequent events that occurred that would be required to be disclosed in, or would be recognized, in these condensed consolidated financial statements.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the accompanying notes included in Part I, Item 1 of this Form 10-Q. Some of the information contained in this discussion and analysis contains forward-looking statements that involve risks, uncertainties, and assumptions. As a result of many factors, including those factors set forth in the section titled "Risk Factors," our actual results could differ materially from those discussed in or implied by these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section titled "Risk Factors." Please also refer to the section titled "Special Note Regarding Forward Looking Statements."

Special Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q (this "Quarterly Report" or "Form 10-Q") includes "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 Exchange Act of 1934, as amended (the "Exchange Act"), that are not historical facts and involve risks and uncertainties that could cause actual results to differ materially from those expected and projected. All statements, other than statements of historical fact included in this Form 10-Q including, without limitation, statements in this "Management's Discussion and Analysis of Financial Condition and Results of Operations" regarding our financial position, business strategy and the plans and objectives of management for future operations, are forward-looking statements. Words such as "expect," "believe," "anticipate," "intend," "estimate," "seek" and variations and similar words and expressions are intended to identify such forward-looking statements. Such forward-looking statements involved known and unknown risks, relate to future events or future performance, but reflect management's current beliefs, based on information currently available. A number of factors could cause actual events, performance or results to differ materially from the events, performance and results discussed in the forward-looking statements. In addition, historic results, including but not limited to those related to IND enabling GLP safety/toxicology of SAB-142; and Phase 1 & Phase 2a results of SAB-176; do not guarantee that future research or trials will suggest the same conclusions, nor that historic results referred to herein will be interpreted in the same manner due to future preclinical and clinical trial results or otherwise. For information identifying important factors that could cause actual results to differ materially from those anticipated in the forward-looking statements, please refer to the sections entitled "Risk Factors" in this Quarterly Report, our most recent Annual Report on Form 10-K, subsequent Quarterly Reports on Form 10-Q, and other periodic reports filed with the Securities and Exchange Commission (the "SEC") and available at https://www.sec.gov/. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. Except as expressly required by applicable law, we disclaim any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements.

Company Overview

We are a clinical-stage biopharmaceutical company focused on the development of human polyclonal immunotherapeutic antibodies, or human immunoglobulins (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 hIgGs 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, referred to as holds the potential to generate additional novel therapeutic candidates to expand our pipeline. Our platform utilizes the human immune response to generate the optimal repertoire of IgGs 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 transchromosomic cattle, or Tc Bovine, which produce hIgGs. 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.

Recent Developments

Since its recent announcement of positive topline data results for the Phase 1 clinical trial of SAB-142 on January 28, 2025, SAB BIO provided a clinical trial progress update on DATE SAB BIO announced patient dosing concluded in the last cohort of the Phase 1 clinical study of SAB-142.

Given SAB-142 was generally well-tolerated among healthy volunteers and data from Phase 1 trial confirms SAB-142 does not cause serum sickness or anti-drug antibodies at target dose, we maintain that study results support that SAB-142 is well-positioned for re-dosing in outpatient setting for type 1 diabetes. Based on the data, SAB BIO plans to advance SAB-142 into a Phase 2b trial in 2025 to evaluate the therapeutic candidate in adult and pediatric patients with new-onset T1D.

Corporate Strategy

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 with significant unmet medical needs, including immune and autoimmune disorders including T1D. Our business strategy is focused on SAB-142 as a first-in-class, human, multi-target antibody treatment designed to provide superior efficacy and safety in delaying the onset or progression of T1D.

Our proprietary platform represents the first technology of its kind to produce large-scale human high-titer and high-avidity antibodies across multiple modalities. Leveraging our proprietary production system will help us advance a robust pipeline of differentiated hIgG-based therapies for the treatment of immune system disorders and infectious diseases. Our hIgGs have been safely demonstrated in Phase 3 clinical trials with a patient safety database that includes over 700 patients who were safely administered our hIgG therapeutics.

We have a demonstrated regulatory pathway through each of the FDA, CBER, UK Medicines and Healthcare products Regulatory Agency (“MHRA”), and Australian Therapeutic Goods Administration (“TGA”). These organizations understand our science and are familiar with the multivalent and multitarget properties of our single vial drug products. This further streamlines our ability to develop new and novel drug products rapidly and efficiently where single target monoclonal antibodies (“mAbs”) cannot replicate or duplicate our drug product attributes.

Key Factors Affecting Our Results of Operations and Future Performance

We believe that our financial performance has been, and in the foreseeable future will continue to be, primarily driven by multiple factors as described throughout our analysis within *Components of Results of Operations* below, each of which presents growth opportunities for our business. These factors also pose important challenges that we must successfully address in order to sustain our growth and improve our results of operations. Our ability to successfully address these challenges is subject to various risks and uncertainties, including those described in the section captioned “Part I, Item 1A, Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, and supplemented with revised or additional risk factors in our Quarterly Reports on Form 10-Q, including any such risks included in “Part II, Item 1A, Risk Factors” herein.

Components of Results of Operations

Revenue

Government grants

There was no revenue recognized for the three months ended March 31, 2025. Total revenue recognized from government grants was approximately $0.9 million for the three months ended March 31, 2024. The Company had various grants from the US Department of Defense that terminated in 2022. The Company satisfied all obligations under these arrangements as of December 31, 2024.

Operating Expenses

Research and Development Expenses

Research and development expenses primarily consist of salaries, benefits, incentive compensation, stock-based compensation, laboratory supplies and materials for employees and contractors engaged in research and product development, licensing fees to use certain technology in our research and development projects, fees paid to consultants and various entities that perform certain research and testing on our behalf. Research and development expenses are tracked by target/project code. Indirect general and administrative costs are allocated based upon a percentage of direct costs. We expense all research and development costs in the period in which they are incurred.

Research and development activities consist of discovery research for our platform development and the indications we are working on. For SAB-142, Avance Clinical PTY, Ltd ("Avance"), acts as the contract research organization ("CRO") overseeing our Phase 1 safety study. This study started in December 2023 and the terms of that agreement are subject to confidentiality and the status of the agreement is that it is current. For the three months ended March 31, 2025 and 2024, we continued to incur costs to advance our progress towards commercialization of SAB-142. We expect to continue to incur substantial research and development expenses as we conduct discovery research to enhance our platform and work on our indications. We expect to hire additional employees and continue research and development and manufacturing activities. As a result, we expect that our research and development expenses will continue to increase in future periods and vary from period to period.

Major components within our research and development expenses are salaries and benefits (laboratory & animal care), laboratory supplies, animal care, contract manufacturing, clinical trial expense, outside laboratory services, project consulting, and facility expense.

Research and development expenses by component for the three months ended March 31, 2025 and 2024:

	Three Months Ended March 31,	
	2025	2024
Salaries & benefits	$ 3,245,785	$ 2,293,789
Laboratory supplies	228,803	336,353
Animal care	64,481	113,389
Contract manufacturing	1,534	1,533
Clinical trial expense	1,927,208	806,060
Outside laboratory services	718,272	1,663,155
Project consulting	181,265	280,199
Facility expense	1,154,549	2,605,051
Other expenses	135,424	46,541
Total research and development expenses	$ 7,657,321	$ 8,146,070

General and Administrative Expenses

General and administrative expenses primarily consist of salaries, benefits, and stock-based compensation costs for employees in our executive, accounting and finance, project management, corporate development, office administration, legal and human resources functions as well as professional services fees, such as consulting, audit, tax and legal fees, general corporate costs and allocated overhead expenses. General and administrative expenses also include rent and facilities expenses allocated based upon total direct costs. We anticipate that general and administrative expenses will rise as we expand our workforce and invest in the advancement of our lead therapeutic candidate in preparation for potential commercialization. Additionally, as our operations grow in complexity and we progress toward commercialization, we may incur higher costs related to accounting, audit, legal, regulatory compliance, director and officer insurance, and investor relations. We expect these expenses to vary from period to period in absolute terms and as a percentage of revenue.

Nonoperating (Expense) Income

Gain (loss) on change in fair value of warrant liabilities

Gain (loss) on change in fair value of warrant liabilities consists of the changes in the fair value of the warrant liabilities.

Other Income (expense)

Other income primarily consists of income associated with the refundable portion of Australian research and development tax credits and dividend income from non-interest bearing short-term investments.

Interest income

Interest income consists of interest earned on our investments in debt securities, cash, and cash equivalents.

Interest expense

Interest expense consists primarily of interest related to abated rent and insurance financing.

Results of Operations

The following tables set forth our results of operations for the three months ended March 31, 2025 and 2024:

	Three Months Ended March 31,	
	2025	2024
Revenue		
Grant revenue	$ —	$ 944,575
Total revenue	—	944,575
Operating expenses		
Research and development	7,657,321	8,146,070
General and administrative	3,114,781	4,189,121
Total operating expenses	10,772,102	12,335,191
Loss from operations	(10,772,102)	(11,390,616)
Other income (expense)		
Changes in fair value of warrant liabilities	5,035,769	5,468,219
Interest expense	(69,565)	(76,371)
Interest income	62,498	497,893
Other income	546,627	475,130
Total other income	5,575,329	6,364,871
Loss before income taxes	(5,196,773)	(5,025,745)
Net loss	$ (5,196,773)	$ (5,025,745)

Comparison of the three months ended March 31, 2025 and 2024

Revenue

	Three Months Ended March 31,			
	2025	2024	Change	% Change
Revenue	$ —	$ 944,575	$ (944,575)	(100.0)%
Total revenue	$ —	$ 944,575		

Revenue decreased by $0.9 million, or 100.0%, in the three months ended March 31, 2025 as compared to the three months ended March 31, 2024, due to the JPEO Rapid Response Contract Termination. There was no revenue recognized for the three months ended March 31, 2025. Included in revenues for the three months ended March 31, 2024, are closeout activities and charges of $0.9 million due to outside services for laboratory supply disposal.

As a result of the JPEO Rapid Response Contract Termination, we do not expect to generate revenues during the development phase of our primary pipeline development target of Type 1 diabetes, which remains independently financed as we explore potential partnerships, co-development opportunities, and licensing arrangements.

Research and Development

	Three Months Ended March 31,			
	2025	2024	Change	% Change
Research and development	$ 7,657,321	$ 8,146,070	$ (488,749)	(6.0)%
Total research and development expenses	$ 7,657,321	$ 8,146,070		

Research and development expenses decreased by $0.5 million, or 6.0%, for the three months ended March 31, 2025 as compared to the three months ended March 31, 2024, primarily due to decreases in outside lab services (year-over-year decrease of $0.9 million, 56.8%), a decrease of an out-of-period adjustment of $0.2 million of amortization expense, overhead (year-over-year decrease of $1.2 million, 35.3%), project consulting (year-over-year decrease of $0.1 million, 35.3%), laboratory supplies (year-over-year decrease of $0.1 million, 32.0%) offset by an increase in salaries and benefits (year-over-year increase of $0.9 million, 41.5%) and clinical trial costs (year-over-year increase of $1.1 million, (139.1%). We expect Research and Development expenses to increase in future years as

we advance our lead therapeutic candidate through Phase 2 clinical trials and invest in the necessary foundation to support potential commercialization.

General and Administrative

	Three Months Ended March 31,			
	2025	2024	Change	% Change
General and administrative	$ 3,114,781	$ 4,189,121	$ (1,074,340)	(25.6)%
Total general and administrative expenses	$ 3,114,781	$ 4,189,121		

General and administrative expenses decreased by $1.1 million, or 25.6%, in the three months ended March 31, 2025 as compared to the three months ended March 31, 2024, primarily due to salaries and benefits (year-over-year decrease of $0.5 million, 25.0%), project consulting (year-over-year decrease of $0.1 million, 28.7%), insurance costs (year-over-year decrease of $0.1 million, 25.3%) and other immaterial administrative support fees relating to IT and human resources (year-over-year decrease of $0.4 million, 25.9%).

While administrative support and non-capitalized financing costs declined as of March 31, 2025 as compared to March 31, 2024, we anticipate that general and administrative expenses will rise as we expand our workforce and invest in the advancement of our lead therapeutic candidate in preparation for potential commercialization. Additionally, as our operations grow in complexity and we progress toward commercialization, we may incur higher costs related to accounting, audit, legal, regulatory compliance, director and officer insurance, and investor relations.

Non-operating Income

	Three Months Ended March 31,			
	2025	2024	Change	% Change
Changes in fair value of warrant liabilities	$ 5,035,769	$ 5,468,219	$ (432,450)	(7.91)%
Other income	546,627	475,130	71,497	15.05%
Total non-operating income (expense)	$ 5,582,396	$ 5,943,349		

Total non-operating income decreased by $0.4 million, or (6.07)% in the three months ended March 31, 2025 as compared to the three months ended March 31, 2024, primarily due to the change in fair value of warrant liabilities (year-over-year decrease of $0.4 million, 7.9%), offset by a $0.1 million increase in the Australian research and development tax credit.

Interest Expense

	Three Months Ended March 31,			
	2025	2024	Change	% Change
Interest expense	$ 69,565	$ 76,371	$ (6,806)	(8.91)%
Total interest expense	$ 69,565	$ 76,371		

Interest expense in the three months ended March 31, 2025 was consistent with interest expense in the three months ended March 31, 2024.

Interest Income

	Three Months Ended March 31,			
	2025	2024	Change	% Change
Interest income	$ 62,498	$ 497,893	$ (435,395)	(87.45)%
Total interest income	$ 62,498	$ 497,893		

Interest income decreased by $0.4 million, or (87.45)%, during the three months ended March 31, 2025 as compared to the three months ended March 31, 2025, primarily due to interest earned on our investments in debt securities, and lower interest earning cash, and cash equivalent balances.

Future interest income will be largely dependent on our total liquid cash and investment balances, which are in turn influenced by our capital resources and future fundraising activities.

Liquidity and Capital Resources

As of March 31, 2025 and December 31, 2024, we had $12.9 million and $20.8 million, respectively, of cash, cash equivalents, and investments.

We intend to continue to invest in our business and, as a result, may incur operating losses in future periods. We expect to continue to invest in research and development efforts towards expanding our capabilities and expertise along our platform and the primary pipeline development targets we are working on, as well as building our business development team and marketing our solutions to partners in support of the growth of the business.

We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek regulatory approvals for, our product candidates, and begin commercialization of our products. As a result, we will require additional capital to fund our operations in order to support our long-term plans.

We have incurred operating losses for the past several years. While we intend to continue to keep operating expenses at a reduced level there can be no assurance that our current level of operating expenses will not increase or that other uses of cash will not be necessary. Based on our current level of operating expenses, existing resources will not be sufficient to cover operating cash needs through the twelve months following the date these financials are made available for issuance. These conditions raise substantial doubt about our ability to continue as a going concern. We intend to seek additional capital through equity and/or debt financings, collaborative or other funding arrangements. Should we seek additional financing from outside sources, we may not be able to raise such financing on terms acceptable to us or at all. If we are unable to raise additional capital when required or on acceptable terms, we may be required to scale back or discontinue the advancement of product candidates, reduce headcount, liquidate our assets, file for bankruptcy, reorganize, merge with another entity, or cease operations.

Sources of Liquidity

Since our inception, we have financed our operations primarily from revenue in the form of government grants and from equity financings.

Notes payable

Insurance Financing Note

We obtained financing for certain Director & Officer liability insurance policy premiums. In 2024, we entered into an agreement that assigned to AFCO Direct (the “Lender”) a first priority lien on and security interest in the financed policies and any additional premium required in the financed policies including (a) all returned or unearned premiums, (b) all additional cash contributions or collateral amounts assessed by the insurance companies in relation to the financed policies and financed by Lender, (c) any credits generated by the financed policies, (d) dividend payments, and (e) loss payments which reduce unearned premiums. If any circumstances exist in which premiums related to any Financed Policy could become fully earned in the event of loss, Lender shall be named a loss-payee with respect to such policy.

The total premiums, taxes, and fees financed under the current insurance financing agreement are approximately $516 thousand, for AFCO Direct with an annual interest rate of 7.37%. In consideration of the premium payment by the Lender to the insurance companies or the Agent or Broker (as defined in the agreement with the Lender), we unconditionally promise to pay the Lender the amount financed plus interest and other charges permitted under the agreement.

At March 31, 2025 and December 31, 2024, we recognized approximately $139 thousand and $276 thousand, respectively, as an insurance financing note payable in our condensed consolidated balance sheets. We incurred $4 thousand and $8 thousand of interest expense related to the insurance financing note for the three months ended March 31, 2025 and 2024, respectively. Our current insurance financing agreement is being repaid through installment payments, with the final payment scheduled for September 22, 2025.

In 2023, we entered into an agreement with First Insurance Funding, which assigned them a first-priority lien on the security interest in the financed policies and associated rights. During the three months ended March 31, 2024, we made payments on the prior insurance financing agreement with First Insurance Funding with an original principal balance of $765 thousand and an annual interest rate of 7.96%. This prior agreement, structured with similar lien and collateral terms, was fully repaid upon the final installment on September 22, 2024

Please refer to Note 9, *Notes Payable*, in our condensed consolidated financial statements for additional information on our debt.

Cash Flows

The following table summarizes our cash flows for the three months ended March 31, 2025 and 2024:

	Three Months Ended March 31,	
	2025	2024
Net cash used in operating activities	$ (7,797,217)	$ (10,750,009)
Net cash provided by (used in) investing activities	4,671,103	(31,359,207)
Net cash used in financing activities	(173,985)	(394,418)
Effect of exchange rate changes on cash and cash equivalents	42,500	(28,270)
Net decrease in cash and cash equivalents	$ (3,257,599)	$ (42,531,904)

Operating Activities

Net cash used in operating activities increased by $3.0 million in the three months ended March 31, 2025 as compared to the three months ended March 31, 2024, primarily due to a decrease in cash used in operating activities related to change in our operating assets and liabilities of $3.8 million and an increase in our net loss adjusted for non-cash items of $0.9 million. Year-over-year changes in cash used by operating activities is explained by shifts in the working capital balances as we continue to invest in the development of our lead product candidate, SAB-142.

Investing Activities

Net cash used by investing activities increased by $36.0 million in the three months ended March 31, 2025 as compared to the three months ended March 31, 2024, primarily due to increased purchases of short-term investments following the completion of the September 2023 Offering. Capital expenditures were minimal in 2024, as major asset purchases in prior years were primarily related to leasehold improvements at our corporate headquarters. We do not anticipate a significant increase in capital asset purchases in the near term, as our investment focus remains on advancing our lead therapeutic candidate through Phase 2 clinical trials.

Financing Activities

Net cash used by financing activities decreased by $0.2 million in the three months ended March 31, 2025 as compared to the three months ended March 31, 2024, primarily due to the absence of any material equity financing activities in 2024.

Contractual Obligations and Commitments

We enter into contracts in the normal course of business with third parties, including contract research organizations (“CRO”).

As of March 31, 2025, there were no material changes outside of the ordinary course of business to our commitments and contractual obligations.

Income Taxes

Due to current and prior year losses we do not expect to have any Income Tax Provision.

We continue to record a valuation allowance on its net deferred tax assets. The valuation increased by approximately $2.5 million during the three months ended March 31, 2025. We have not recognized any reserves for uncertain tax positions.

Going Concern

The accompanying unaudited condensed consolidated financial statements have been prepared assuming we will continue as a going concern, which contemplates continuity of operations, realization of assets and the satisfaction of liabilities and commitments in the normal course of business. We have experienced net losses, negative cash flows from operations and, as of March 31, 2025, and had an accumulated deficit of $129.4 million. We anticipate we will continue to generate losses for the foreseeable future and expect the losses to increase as we continue the development of, or seek regulatory approvals for, product candidates, and begin commercialization of products. As a result, we will require additional capital to fund operations in order to support our long-term plans.

We will need to raise additional capital to fund our operations, continue to execute our strategy, and continue as a going concern. In the future, we may seek additional funding through a combination of equity or debt financings, or other third-party financing, collaborative, or other funding arrangements. Should we seek additional financing from outside sources, we may not be able to raise such financing on terms acceptable to us or at all. If we are unable to raise additional capital when required or on acceptable terms, we may be required to scale back or discontinue the advancement of product candidates, reduce headcount, liquidate assets, file for bankruptcy, reorganize, merge with another entity, or cease operations.

We currently expect that our cash, cash equivalents, and short-term investments of $12.9 million as of March 31, 2025 will not be sufficient to fund our operating expenses and capital requirements for more than 12 months from the date the financial statements are issued. These conditions raise substantial doubt about our ability to continue as a going concern.

Off-Balance Sheet Arrangements

We did not have, for the periods presented, and we do not currently have, any off-balance sheet financing arrangements or any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or special purpose entities, that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Critical Accounting Policies and Estimates

We have prepared our condensed consolidated financial statements in accordance with U.S. GAAP. Our preparation of these condensed consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosures. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could therefore differ materially from these estimates under different assumptions or conditions.

Our most critical accounting estimates and assumptions are included in our Annual Report on Form 10-K for the year ended December 31, 2024 filed with the SEC on March 31, 2025. There have been no significant changes to our critical accounting policies during the three months ended March 31, 2025. See Note 2, *Summary of Significant Accounting Policies,* to our condensed consolidated financial statements for further details.

JOBS Act Accounting Election

The Jumpstart Our Business Startups ("JOBS") Act, enacted in April 2012, permits an "emerging growth company" such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have and intend to continue to take advantage of all of the reduced reporting requirements and exemptions, including the longer phase-in periods for the adoption of new or revised financial accounting standards, for an emerging growth company under Section 107 of the JOBS Act.

We may use these provisions until the last day of our fiscal year in which the fifth anniversary of the completion of our initial public offering occurred. However, if certain events occur prior to the end of such five-year period, including if we become a "large accelerated filer," our annual gross revenue exceeds $1.235 billion, or we issue more than $1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period.

We have elected to take advantage of certain of the reduced disclosure obligations in this Form 10-Q and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our shareholders may be different than the information you receive from other public companies in which you hold stock.

The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, until those standards apply to private companies. We have elected to take advantage of the

benefits of this extended transition period and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. Our financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an emerging growth company or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act upon issuance of a new or revised accounting standard that applies to our financial statements and that has a different effective date for public and private companies, we will disclose the date on which we will adopt the recently issued accounting standard.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Concentration of Credit Risk

We received 100% of our total revenue through grants from government organizations for the three months ended March 31, 2025, respectively and the three months ended March 31, 2024, respectively. To date, no receivables have been written off.

Interest Rate Risk

As of March 31, 2025 and December 31, 2024, we had cash, cash equivalents, U.S. treasury securities, investments in exchange traded mutual funds, and money market funds of $12.9 million and $20.8 million, respectively, all of which was maintained in bank accounts, money market funds, mutual funds, and U.S. treasury securities. Our primary exposure to market risk is to interest income volatility, which is affected by changes in the general level of interest rates. A 10% change in the market interest rates would not have a material effect on our business, financial condition, or results of operations.

Foreign Currency Risk

We conduct materially all of our business in U.S. dollars. We do not have any foreign currency or other derivative financial instruments. Our primary exposure to changes in foreign currency exchange rates relates mainly to SAB Australia. We do not currently hedge our foreign currency exchange rate risk. As of March 31, 2025 and December 31, 2024, our liabilities denominated in foreign currencies were not material. Accordingly, we do not believe a 10% increase or decrease in current exchange rates would have a material effect on our financial results.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer has evaluated the effectiveness of our disclosure controls and procedures. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost benefit relationship of possible controls and procedures. Based on the evaluation as of March 31, 2025, our Chief Executive Officer and Chief Financial Officer have concluded that the Company’s disclosure controls and procedures were effective as of March 31, 2025.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the three months ended March 31, 2025, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

We are not currently a party to any material litigation, nor are we aware of any pending or threatened litigation against us that we believe would materially affect our business, operating results, financial condition, or cash flows. Participants in our industry face frequent claims and litigation, including securities litigation, claims regarding patent and other intellectual property rights, and other liability claims. As a result, we may be involved in various legal proceedings from time to time in the future.

Item 1A. Risk Factors.

Our business is subject to various risks, including those described in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, filed with the SEC on March 31, 2025, which we strongly encourage you to review (the "2024 Annual Report"). There have been no material changes from the risk factors described in our 2024 Annual Report.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not Applicable.

Item 5. Other Information.

Rule 10b5-1 Trading Plans

During the three months ended March 31, 2025, none of the Company's directors or officers (as defined in Rule 16a-1(f) of the Exchange Act) adopted, terminated or modified a Rule 10b5-1 trading arrangement or non-Rule 10b5-1 trading arrangement (as such terms are defined in Item 408 of Regulation S-K of the Securities Act.).

Item 6. Exhibits.

Exhibit Number	Description	Schedule/ Form	File No.	Exhibit	Filing Date
10.1	Lease Agreement between SAB Biotherapeutics, Inc. and Sanford Health, dated February 1, 2025.	8-K	001-39871	10.1	February 5, 2025
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1**	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
32.2**	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.				
101.SCH	Inline XBRL Taxonomy Extension Schema Document				
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document				
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document				
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)				

* Filed herewith.

** The certifications attached as Exhibits 32.1 and 32.2 that accompany this Quarterly Report are not deemed filed with the SEC and are not to be incorporated by reference into any filing of SAB Biotherapeutics, Inc. under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date of this Quarterly Report, irrespective of any general incorporation language contained in such filing.

¥ Denotes management contract or any compensatory plan, contract or arrangement.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized**.**

SAB BIOTHERAPEUTICS, INC.

Date: May 9, 2025

By: */s/ Samuel J. Reich*

Samuel J. Reich
Chair and Chief Executive Officer
(Principal Executive Officer)

By: */s/ Lucy To*

Lucy To
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Samuel J. Reich, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of SAB Biotherapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a–15(f) and 15d–15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2025

By: **

Samuel J. Reich
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Lucy To, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of SAB Biotherapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a–15(f) and 15d–15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2025

By: /s/ *Lucy To*

Lucy To
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of SAB Biotherapeutics, Inc. (the "Company") on Form 10-Q for the period ending March 31, 2025 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 9, 2025

By: */s/ Samuel J. Reich*

Samuel J. Reich
Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of SAB Biotherapeutics, Inc. (the "Company") on Form 10-Q for the period ending March 31, 2025 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 9, 2025

By: /s/ *Lucy To*

Lucy To
Chief Financial Officer
(Principal Financial and Accounting Officer)