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 September 30, 2023

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.)**
2100 East 54th Street North Sioux Falls, South Dakota	**57104**
(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 at an exercise price of $11.50 per share	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 October 31, 2023, the registrant had 52,319,156 shares of common stock, $0.0001 par value per share, outstanding.

Table of Contents

Item 1. Condensed Financial Statements (Unaudited).

SAB Biotherapeutics, Inc. and Subsidiaries
Condensed Balance Sheets

	September 30, 2023	December 31, 2022
	(Unaudited)	
Assets		
Current assets		
Cash and cash equivalents	$ 2,425,480	$ 15,046,894
Accounts receivable, net	—	5,556,577
Prepaid expenses and other current assets	702,231	1,493,982
Total current assets	3,127,711	22,097,453
Long-term prepaid insurance	371,191	467,694
Operating lease right-of-use assets	493,473	1,192,054
Financing lease right-of-use assets	3,722,173	3,896,873
Property, plant and equipment, net	20,621,749	23,250,853
Total assets	**$ 28,336,297**	**$ 50,904,927**
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 1,083,169	$ 3,679,116
Notes payable	541,644	772,665
Operating lease liabilities, current portion	528,778	490,794
Finance lease liabilities, current portion	129,489	132,788
Deferred grant income	1,627,421	—
Accrued expenses and other current liabilities	5,300,442	9,917,981
Total current liabilities	9,210,943	14,993,344
Operating lease liabilities, noncurrent	—	361,225
Finance lease liabilities, noncurrent	3,452,442	3,629,642
Warrant liabilities	417,102	320,930
Notes payable, noncurrent	—	541,644
Total liabilities	13,080,487	19,846,785
Commitments and contingencies (Note 16)		
Stockholders' equity		
Preferred stock; $0.0001 par value; 10,000,000 shares authorized, 0 shares issued and outstanding at September 30, 2023 and December 31, 2022, respectively	—	—
Common stock; $0.0001 par value; 490,000,000 shares authorized at September 30, 2023 and December 31, 2022; 52,865,814 and 50,940,920 shares issued, respectively, and 52,319,156 and 50,394,262 outstanding at September 30, 2023 and December 31, 2022, respectively	5,286	5,094
Treasury stock, at cost; 546,658 shares held at September 30, 2023 and December 31, 2022	(5,521,246)	(5,521,246)
Additional paid-in capital	87,978,548	84,444,049
Accumulated deficit	(67,206,778)	(47,869,755)
Total stockholders' equity	15,255,810	31,058,142
Total liabilities and stockholders' equity	**$ 28,336,297**	**$ 50,904,927**

See accompanying notes to the condensed financial statements

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	**2022**	**2023**	**2022**
Revenue				
Grant revenue	$ 1,267,361	$ 3,589,708	$ 1,933,980	$ 21,743,309
Total revenue	1,267,361	3,589,708	1,933,980	21,743,309
Operating expenses				
Research and development	4,019,718	7,352,978	12,217,569	29,300,405
General and administrative	2,570,565	4,044,046	8,917,960	13,500,512
Total operating expenses	6,590,283	11,397,024	21,135,529	42,800,917
Loss from operations	(5,322,922)	(7,807,316)	(19,201,549)	(21,057,608)
Other income (expense)				
Changes in fair value of warrant liabilities	178,758	782,962	(96,172)	10,362,614
Interest expense	(69,700)	(70,626)	(237,405)	(213,885)
Interest income	14,364	17,385	100,920	41,143
Other income	97,183	1,527	97,183	1,527
Total other income (expense)	220,605	731,248	(135,474)	10,191,399
Loss before income taxes	(5,102,317)	(7,076,068)	(19,337,023)	(10,866,209)
Net loss	$ (5,102,317)	$ (7,076,068)	$ (19,337,023)	$ (10,866,209)
Loss per common share attributable to the Company's shareholders				
Basic and diluted loss per common share	$ (0.10)	$ (0.16)	$ (0.38)	$ (0.25)
Weighted-average common shares outstanding – basic and diluted	52,406,002	43,030,885	51,084,636	43,042,379

See accompanying notes to the condensed financial statements.

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

	Common stock			Treasury Stock			
	Shares	Amount	Additional Paid-In Capital	Shares	Amount	Accumulated Deficit	Total Stockholders' Equity
Balance at December 31, 2022	**50,940,920**	**$ 5,094**	**$ 84,444,049**	**(546,658)**	**$ (5,521,246)**	**$ (47,869,755)**	**$ 31,058,142**
Issuance of common stock for exercise of stock options	3,500	—	1,890	—	—	—	1,890
Professional fees settled with warrants	—	—	93,530	—	—	—	93,530
Stock-based compensation	—	—	602,780	—	—	—	602,780
Net loss	—	—	—	—	—	(7,353,820)	(7,353,820)
Balance at March 31, 2023	**50,944,420**	**$ 5,094**	**$ 85,142,249**	**(546,658)**	**$ (5,521,246)**	**$ (55,223,575)**	**$ 24,402,522**
Issuance of common stock for settlement of accrued liabilities	1,916,894	192	1,549,808	—	—	—	1,550,000
Stock-based compensation	—	—	644,815	—	—	—	644,815
Net loss	—	—	—	—	—	(6,880,886)	(6,880,886)
Balance at June 30, 2023	**52,861,314**	**$ 5,286**	**$ 87,336,872**	**(546,658)**	**$ (5,521,246)**	**$ (62,104,461)**	**$ 19,716,451**
Issuance of common stock for exercise of stock options	4,500	—	2,430	—	—	—	2,430
Stock-based compensation	—	—	639,246	—	—	—	639,246
Net loss	—	—	—	—	—	(5,102,317)	(5,102,317)
Balance at September 30, 2023	**52,865,814**	**$ 5,286**	**$ 87,978,548**	**(546,658)**	**$ (5,521,246)**	**$ (67,206,778)**	**$ 15,255,810**

See accompanying notes to the condensed financial statements.

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

	Common stock			Treasury Stock			
	Shares	Amount	Additional Paid-In Capital	Shares	Amount	Accumulated Deficit	Total Stockholders' Equity
Balance at December 31, 2021	**43,487,279**	**$ 4,349**	**$ 67,674,515**	**—**	**$ —**	**$ (29,128,951)**	**$ 38,549,913**
Issuance of common stock for exercise of stock options	14,500	1	7,829	—	—	—	7,830
Forward Share Purchase Agreement, final settlement	—	—	817,060	—	—	—	817,060
Repurchase of common stock pursuant to the Forward Share Purchase Agreement	—	—	5,521,246	(546,658)	(5,521,246)	—	—
Stock-based compensation	—	—	897,600	—	—	—	897,600
Net income	—	—	—	—	—	985,863	985,863
Balance at March 31, 2022	**43,501,779**	**$ 4,350**	**$ 74,918,250**	**(546,658)**	**$ (5,521,246)**	**$ (28,143,088)**	**$ 41,258,266**
Issuance of common stock for exercise of stock options	75,764	8	69,133	—	—	—	69,141
Stock-based compensation	—	—	569,861	—	—	—	569,861
Net loss	—	—	—	—	—	(4,775,996)	(4,775,996)
Balance at June 30, 2022	**43,577,543**	**$ 4,358**	**$ 75,557,244**	**(546,658)**	**$ (5,521,246)**	**$ (32,919,084)**	**$ 37,121,272**
Stock-based compensation	—	—	578,203	—	—	—	578,203
Net loss	—	—	—	—	—	(7,076,068)	(7,076,068)
Balance at September 30, 2022	**43,577,543**	**$ 4,358**	**$ 76,135,447**	**(546,658)**	**$ (5,521,246)**	**$ (39,995,152)**	**$ 30,623,407**

See accompanying notes to the condensed financial statements.

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

	Nine Months Ended September 30,	
	2023	**2022**
Cash flows from operating activities:		
Net loss	$ (19,337,023)	$ (10,866,209)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	2,730,660	2,270,621
Amortization of right-of-use assets	70,221	97,733
Stock-based compensation expense	1,886,841	2,045,664
Gain on sale of equipment	(16,715)	(15,793)
Changes in fair value of warrant liabilities	96,172	(10,362,614)
Professional fees settled with equity instruments	143,530	—
Changes in operating assets and liabilities		
Accounts receivable	5,556,577	(4,931,330)
Prepaid expenses	888,251	1,227,009
Operating lease right-of-use assets	394,862	(75,276)
Accounts payable	(2,595,947)	1,025,751
Due to related party	—	(2,367)
Deferred grant income	1,627,421	(100,000)
Accrued expense and other current liabilities	(3,117,538)	(2,217,676)
Net cash used in operating activities	**(11,672,688)**	**(21,904,487)**
Cash flows from investing activities:		
Proceeds from the sale of equipment	44,450	76,390
Purchases of equipment	(129,290)	(2,048,660)
Net cash used in investing activities	**(84,840)**	**(1,972,270)**
Cash flows from financing activities:		
Payments of notes payable	(772,665)	(1,771,746)
Payments related to the Forward Share Purchase Agreement	—	(5,521,246)
Principal payments on finance leases	(95,541)	(120,053)
Proceeds from exercise of stock options	4,320	76,972
Net cash used in financing activities	**(863,886)**	**(7,336,073)**
Net decrease in cash and cash equivalents	(12,621,414)	(31,212,830)
Cash and cash equivalents		
Beginning of year	15,046,894	39,545,018
End of period	$ 2,425,480	$ 8,332,188
Supplemental disclosures:		
Cash paid for interest	$ 179,222	$ 143,259
Supplemental information on non-cash investing and finance activities:		
Settlement of accrued liabilities through the issuance of common stock	$ 1,500,000	$ —

See accompanying notes to the condensed 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 and commercialization of a portfolio of products from its proprietary immunotherapy platform to produce fully targeted human polyclonal antibodies, without using human plasma or serum. SAB's novel DiversitAb platform enables the rapid production of large amounts of targeted human polyclonal antibodies, leveraging transchromosomic cattle (Tc Bovine™) that have been genetically designed to produce human antibodies (immunoglobulin G) rather than bovine in response to an antigen. Animal antibodies have been made in rabbits, sheep and horses. However, SAB's platform is the first to produce fully human antibodies in large animals.

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. The Company expects to commence a Phase 1 trial in the fourth quarter of 2023.

Liquidity

The accompanying unaudited condensed 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 September 30, 2023, had an accumulated deficit of $67.2 million. The Company anticipates to 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.

On September 29, 2023, the Company entered into a securities purchase agreement with certain accredited investors (the "September 2023 Purchase Agreement"), pursuant to which the Company agreed to issue and sell shares of preferred stock and warrants, in a private placement which provides for up to $110 million in proceeds across multiple tranches. Between October 2023 and November 2023, the Company received an aggregate of approximately $67.1 million for shares of preferred stock issued in this private placement offering. See Note 17, *Subsequent Events* for further information about the private placement offering.

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. The Company plans to 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.

(2) Summary of Significant Accounting Policies

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

Basis of presentation

The financial statements have been prepared in conformity with U.S. Generally Accepted Accounting Principles ("GAAP") and include all adjustments necessary for the fair presentation of the Company's financial position for the periods presented.

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 financial statements include the results of the Company and its wholly owned subsidiaries, SAB Sciences, Inc., 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. Additional funding may be needed to cover operational costs as the Company moves forward with the Company's efforts to develop a commercially approved product.

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 Company's common stock prior to becoming a public company, determination of the fair value of the Company's warrants, determination of the incremental borrowing rate ("IBR") used in the calculation of the Company's right of use assets and lease liabilities, the valuation allowance on deferred tax assets, and research and development expenses related to clinical trial accruals. 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, accounts receivable, accounts payable and accrued expenses.

The Company accounts for warrants to purchase its common stock pursuant to ASC Topic 470, *Debt*, and ASC Topic 480, *Distinguishing Liabilities from Equity*, and classifies warrants for common stock as liabilities or equity. The warrants classified as liabilities are reported at their estimated fair value (see Note 12, *Fair Value Measurements*) and any changes in fair value are reflected in other income and 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, *Fair Value Measurements*.

Cash, cash equivalents, and restricted cash

Cash equivalents include short-term, highly liquid instruments, consisting of money market accounts and short-term investments with original maturities at the date of purchase of 90 days or less.

Accounts receivable

Accounts receivable are carried at original invoice amount, less an allowance for doubtful accounts. The Company estimates an allowance for doubtful accounts for potential credit losses that are expected to be incurred, based on management's assessment of the collectability of specific accounts, the aging of the accounts receivable, historical information and other currently available evidence. Receivables are written off when deemed uncollectible. To date, no receivables have been written off. The Company had no allowance for doubtful accounts as of September 30, 2023 and December 31, 2022.

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 nine months ended September 30, 2023 and 2022.

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") Accounting Standards Codification ("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 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

Costs 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 and nine months ended September 30, 2023 and 2022, 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 be a material change in the Company's clinical study accrual, which could also materially affect reported results of operations. For the three and nine months ended September 30, 2023 and 2022, 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 and nine months ended September 30, 2023 and 2022.

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 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 balance sheet. Accruals are maintained for uncertain tax positions, as necessary.

Income tax expense includes the current tax liability from operations and the change in deferred income taxes during the year. Current tax liabilities or receivables are recognized for estimated income tax payable and/or refundable for the current year.

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. 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.

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 received 100% of its total revenue through grants from government organizations during three and nine months ended September 30, 2023 and 2022.

Comprehensive income (loss)

The Company had no items of comprehensive income (loss) during the three and nine months ended September 30, 2023 and 2022, other than its net loss.

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 statements of operations.

(3) New accounting standards

Recently-adopted standards

In July 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"), which requires the measurement of all expected credit losses of financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. Financial institutions and other organizations will now use forward-looking information to better inform their credit loss estimates. In addition, the ASU amends the accounting for credit losses on available-for-sale debt securities and purchased financial assets with credit deterioration. ASU 2016-13 is effective for periods beginning after December 15, 2022, and interim periods within those fiscal years. The Company

adopted ASU 2016-13 at January 1, 2023, and the adoption did not have a material impact on its condensed financial statements.

(4) Revenue

During the three and nine months ended September 30, 2023 and 2022, the Company recognized revenue from the following grants:

Government grants

The total revenue for government grants was approximately $1.3 million and $3.6 million, respectively, for the three months ended September 30, 2023 and 2022, and $1.9 million and $21.7 million, respectively, for the nine months ended September 30, 2023 and 2022.

National Institute of Health – National Institute of Allergy and Infectious Disease ("NIH-NIAID") (Federal Award #1R44AI117976-01A1) – this grant was for $1.4 million and the original term was started in September 2019 through August 2021. This grant was subsequently amended to extend the end date to August 2022. No grant income was recognized for this grant for the three and nine months ended September 30, 2023. No grant income was recognized for this grant for the three months ended September 30, 2022, and approximately $30 thousand of grant income was recognized for the nine months ended September 30, 2022. This grant was completed in 2022.

NIH-NIAID (Federal Award #1R41AI131823-02) – this grant was for approximately $1.5 million and had an original term of April 2019 through March 2021. The grant was subsequently amended to extend the end date to March 2023. No grant income was recognized for this grant for the three months ended September 30, 2023 and approximately $192 thousand of grant income was recognized for the nine months ended September 30, 2023, and approximately $150 thousand and $281 thousand of grant income was recognized for the three and nine months ended September 30, 2022, respectively. This grant was completed as of June 30, 2023.

NIH-NIAID through Geneva Foundation (Federal Award #1R01AI132313-01, Subaward #S-10511-01) – this grant was for approximately $2.7 million and had an original term of August 2017 through July 2021. The grant was subsequently amended to extend the end date to July 2023. No grant income was recognized for the three months ended September 30, 2023 and approximately $273 thousand of grant income was recognized for nine months ended September 30, 2023, and approximately $39 thousand and $88 thousand of grant income was recognized for the three and nine months ended September 30, 2022, respectively. This grant was completed as of June 30, 2023.

US Department of Defense ("DoD"), Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense Enabling Biotechnologies ("JPEO") through Advanced Technology International – this grant was for a potential of $25 million, awarded in stages starting in August 2019 and with potential stages running through February 2023. Additional contract modifications were added to this contract in 2020 and 2021 for work on a COVID therapeutic, bringing the contract total to $203.6 million. Grant income recognized was approximately $1.3 million and $1.5 million for the three and nine months ended September 30, 2023, respectively, and $3.4 million and $21.3 million for the three and nine months ended September 30, 2022, respectively. This grant was terminated in 2022.

The grants for the JPEO Rapid Response contract are cost reimbursement agreements, with reimbursement of qualified direct research and development expense (labor and consumables) with an overhead charge (based on actual, reviewed quarterly) and a fixed fee (9%).

On August 3, 2022, the Company received notice from the DoD terminating the JPEO Rapid Response contract (the "JPEO Rapid Response Contract Termination"). The Company engaged in negotiations with the DoD to compensate the Company for services provided prior to the JPEO Rapid Response Contract Termination and costs the Company would be expected to bear in future periods. A termination and settlement proposal was submitted to the DoD on September 9, 2022; the Company submitted a final invoice on December 15, 2022; and received payment from the DoD on or about January 12, 2023. The terms of the arrangement provide for a cost-reimbursable structure, and state that the parties will work in good faith equitable reimbursement for work performed toward accomplishment of the tasks provided in the agreement. At this time, other than certain deferred obligations (presented within deferred grant income within the Company's condensed unaudited balance sheet) potentially payable to the DoD solely due to subsequent negotiations with third-party vendors, the Company believes and has been advised there is a reasonable, good faith basis for the position that no present or future obligations exist. Revenue recognized subsequent to the JPEO Rapid Response Contract Termination relates to satisfaction of residual obligations under the termination and settlement agreement—see Note 2, *Summary of Significant Accounting Policies* for further information about the Company's established revenue recognition process.

(5) Earnings per share

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 and nine months ended September 30, 2023 and 2022:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Calculation of basic and diluted loss per share attributable to the Company's shareholders				
Net loss attributable to the Company's shareholders	$ (5,102,317)	$ (7,076,068)	$ (19,337,023)	$ (10,866,209)
Weighted-average common shares outstanding – basic and diluted	52,406,002	43,030,885	51,084,636	43,042,379
Net loss per share, basic and diluted	$ (0.10)	$ (0.16)	$ (0.38)	$ (0.25)

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:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Stock options and awards	704,231	1,004,845	652,111	2,181,361
Convertible Debt	389,904	—	389,904	—
Common Stock Warrants (1)	13,832,890	5,958,600	13,832,890	5,958,600
Earnout Shares (2)	10,491,937	10,491,937	10,491,937	10,491,937
Contingently issuable Earnout Shares from unexercised Rollover Options	1,508,063	1,508,063	1,508,063	1,508,063
Total	26,927,025	18,963,445	26,874,905	20,139,961

(1) Included in Common Stock Warrants are the 5,750,000 publicly-traded warrants (the "Public Warrants"), 208,600 warrants held by assignees of Big Cypress Holdings, LLC (the "Private Placement Warrants"), 300,000 warrants held by Ladenburg Thalmann & Co. Inc. (the "Ladenburg Warrants"), 7,363,377 warrants issued to the investors in the December Private Placement (the "the PIPE Warrants"), and 210,913 warrants issued to the placement agent in the December Private Placement (the "PIPE Placement Agent Warrants"). See Note 12, *Fair Value Measurements* for further details on the Company's outstanding warrants.

(2) As the Earnout Shares are subject to certain vesting requirements not satisfied as of the three and nine months ended September 30, 2023 and 2022, the Earnout Shares held in escrow are excluded from calculating both basic and diluted earnings per share. See Note 10, *Stockholders Equity* for further details on the Company's outstanding equity instruments.

(6) Property, plant and equipment

As of September 30, 2023 and December 31, 2022, the Company's property, plant and equipment was as follows:

	September 30, 2023	December 31, 2022
Laboratory equipment	$ 9,979,077	$ 9,000,114
Animal facility leasehold improvements	8,357,667	8,357,667
Animal facility equipment	1,137,666	1,141,213
Construction-in-progress	—	308,317
Leasehold improvements	9,296,344	9,296,343
Vehicles	208,453	192,683
Office furniture and equipment	631,910	1,233,038
Total Property, plant and equipment, gross	29,611,117	29,529,375
Less: accumulated depreciation and amortization	(8,989,368)	(6,278,522)
Property, plant and equipment, net	$ 20,621,749	$ 23,250,853

Depreciation and amortization expense was $0.96 million and $0.89 million, respectively, for the three months ended September 30, 2023 and 2022, and $2.73 million and $2.27 million, respectively, for the nine months ended September 30, 2023 and 2022.

All tangible personal property with a useful life of at least three years and a unit acquisition cost of $5 thousand or more will be capitalized and depreciated over its useful life using the straight-line method of depreciation. The Company will expense the full acquisition cost of tangible personal property below these thresholds in the year of purchase. The basis of accounting for depreciable fixed assets is acquisition cost and any additional expenditures required to make the asset ready for use. The carrying amount at the balance sheet date of long-lived assets under construction-in-progress includes assets purchased, constructed, or being developed internally that are not yet in service. Depreciation commences when the assets are placed in service.

As of September 30, 2023 and December 31, 2022, the Company's construction-in-progress was as follows:

	September 30, 2023	December 31, 2022
New office space at Headquarters	$ —	$ 85,767
IT equipment at Headquarters	—	84,739
Software	—	137,811
Total construction-in-progress	$ —	$ 308,317

(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 can be terminated with one-year advance written notice. This lease was amended again in October 2022 to reduce the Company's leased area to 21,014 square feet. Additionally, pursuant to the amendment in October 2022, the Company and Sanford Health agreed for the period of October 2022 to September 2023, the Company's obligation to pay the Annual Rent shall be abated and not required to be paid when normally due (the "Abated Rent"). In exchange for the Abated Rent, effective October 1, 2022, the Company issued Sanford Health an 8% unsecured, convertible promissory note (see Note 9, *Notes Payable* for further discussion). The October 2022 amendment was accounted for as a lease modification under ASC 842 - *Leases* and the right-of-use asset and lease liability were remeasured at the modification date of October 1, 2022. The October 2022 lease amendment reduced the lease payment to approximately $45 thousand per month for the remainder of 2023 and approximately $46 thousand per month through 2024. The lease does not provide an implicit rate, and, therefore, the Company used an IBR of 6.92% 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 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 is 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*. The lease costs are $36 thousand and $3 thousand per month for the original leased space on November 2020 and the amendment on July 2022, respectively. The Company used an IBR of 4.69% and 6.60% as the discount rate when measuring the operating lease liability for the original leased space on November 2022 and the amended on July 2022, 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 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 $33.5 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 September 30, 2023 are:

	Operating	Finance
Weighted-average remaining lease term	0.85	15.17
Weighted-average discount rate	6.77%	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 balance sheet as of September 30, 2023:

	Operating	Finance
2023 - remaining	$ 174,721	$ 100,374
2024	368,320	401,496
2025	—	401,496
2026	—	401,496
2027	—	401,496
Thereafter	—	4,382,998
Undiscounted future minimum lease payments	543,041	6,089,356
Less: Amount representing interest payments	(14,263)	(2,507,425)
Total lease liabilities	528,778	3,581,931
Less current portion	(528,778)	(129,489)
Noncurrent lease liabilities	$ —	$ 3,452,442

Operating lease expense was approximately $246 thousand and $304 thousand, respectively, for the three months ended September 30, 2023 and 2022, and $738 thousand and $889 thousand, respectively, for the nine months ended September 30, 2023 and 2022. Operating lease costs are included within research and development expenses on the condensed statements of operations.

Finance lease costs for the three months ended September 30, 2023 and 2022 included approximately $22 thousand and $25 thousand, respectively, in right-of-use asset amortization and approximately $70 thousand and $71 thousand, respectively, of interest expense. Finance lease costs for the nine months ended September 30, 2023 and 2022 included approximately $70 thousand and $98 thousand, respectively, in right-of-use asset amortization and approximately $210 thousand and $214 thousand, respectively, of interest expense. Finance lease costs are included within research and development expenses on the condensed statements of operations.

Cash payments under operating and finance leases were approximately $118 thousand and $100 thousand, respectively, for the three months ended September 30, 2023. Cash payments under operating and finance leases were approximately $354 thousand and $306 thousand, respectively, for the nine months ended September 30, 2023. Cash payments under operating and finance leases were approximately $309 thousand and $103 thousand, respectively, for the three months ended September 30, 2022. Cash payments under operating and finance leases were approximately $930 thousand and $334 thousand, respectively, for the nine months ended September 30, 2022.

Short-term lease expense recognized in the three and nine months ended September 30, 2023 and 2022, was not material.

(8) Accrued Expenses and Other Current Liabilities

As of September 30, 2023 and December 31, 2022, accrued expenses and other current liabilities consisted of the following:

	September 30, 2023	December 31, 2022
Accrued vacation	$ 694,236	$ 511,849
Accrued payroll	172,371	357,390
Accrued construction-in-progress	—	85,767
Accrued consulting	15,930	186,833
Accrued clinical trial expense	117,918	355,479
Accrued outside laboratory services	279,857	1,106,903
Accrued bonus & severance	—	950,324
Accrued contract manufacturing	—	25,129
Accrued legal	803,255	856,505
Accrued financing fees payable	2,910,500	4,910,500
Accrued franchise tax payable	30,000	50,000
Accrued interest	66,375	8,192
Other accrued expenses	210,000	513,110
	$ 5,300,442	$ 9,917,981

(9) Notes Payable

8% Unsecured Convertible Note

Pursuant to the Fourth Amendment to the Company's lease with Sanford Health, the Company and Sanford Health agreed to a period of Abated Rent from October 1, 2022 to September 30, 2023. In exchange for the Abated Rent, effective as of October 1, 2022, the Company issued to Sanford Health an 8% unsecured, convertible promissory note (the "8% Unsecured Convertible Note").

Pursuant to the 8% Unsecured Convertible Note, the Company shall pay the sum of approximately $542 thousand (the "Principal") plus accrued and unpaid interest thereon on September 30, 2024 (the "Maturity Date"). Simple interest shall accrue on the outstanding Principal from and after the date of the 8% Unsecured Convertible Note and shall be payable on the Maturity Date. Sanford Health shall have the right, but not the obligation, to convert all or any part of the outstanding Principal of the 8% Unsecured Convertible Note, together with any accrued and unpaid interest thereon to the date of such conversion, into such number of fully paid and non-assessable shares of the Company's common stock, at any time and from time to time, prior to the later of the Maturity Date and the date on which the 8% Unsecured Convertible Note is paid in full, subject to certain restrictions, at a conversion price per share of common stock equal to greater of (x) $1.50 and (y) the price at which the Company sells shares of common stock in any bona fide private or public equity financing prior to the Maturity Date.

The Company evaluated the treatment of the 8% Unsecured Convertible Note under ASC 470 and determined the Principal in its entirety would be allocated to debt. The Company's condensed balance sheet as of September 30, 2023, includes accrued interest relating to the 8% Unsecured Convertible Note of approximately $43 thousand.

Insurance Financing

The Company obtained financing for certain Director & Officer liability insurance policy premiums. The agreement assigns First Insurance Funding ("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 is approximately $1.2 million with an annual interest rate of 5.47%. In consideration of the premium payment by Lender to the insurance companies or the Agent or Broker, the Company unconditionally promises to pay Lender the amount Financed plus interest and other charges permitted under the Agreement. The Company paid the insurance financing through installment payments with the last payment for the current note being September 22, 2023. The Company recognized no insurance financing note payable in its condensed financial statements as of September 30, 2023 and recognized approximately $773 thousand of insurance financing note payable in its condensed financial statements as of December 31, 2022.

(10) Stockholder's Equity

Authorized and Outstanding Capital Stock

The total number of shares of the Company's authorized capital stock is 500,000,000. The total amount of authorized capital stock consists of 490,000,000 shares of common stock and 10,000,000 shares of preferred stock. As of September 30, 2023, no shares of preferred stock are issued or outstanding.

Earnout Shares

On October 22, 2021 (the "Closing Date"), the Company consummated 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"). 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 $15.00 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 $20.00 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 $25.00 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 $30.00 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 12,000,000 shares of common stock ("Earnout Shares"), of which 1,508,063 are contingently issuable based upon future satisfaction of the aforementioned VWAP thresholds. The remaining 10,491,937 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 12,000,000 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.

Warrants

For information pertaining to the Company's outstanding warrants to purchase shares of the Company's common stock, see Note 12, *Fair Value Measurements*.

(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 September 30, 2023 there

were 7,334,036 shares of common stock reserved for issuance under the 2014 Equity Incentive Plan, with 3,237,007 shares of common stock available for grant and 4,097,029 shares of common stock underlying outstanding grants.

The Company adopted the 2021 Omnibus Equity Incentive Plan (the "2021 Equity Incentive Plan", and collectively with the 2014 Equity Incentive Plan, the "Equity Compensation Plans"), which reserved 11,000,000 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 as of the end of the most recently completed fiscal year. As of September 30, 2023 there were 12,877,631 shares of common stock reserved for issuance under the 2021 Equity Incentive Plan, with 6,484,556 shares of common stock available for grant and 6,393,075 shares of common stock underlying outstanding grants.

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 nine months ended September 30, 2023 was as follows:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (years)	Aggregate Intrinsic Value
Outstanding options, December 31, 2022	7,095,462	$ 1.99	5.79	$ 109,891
Granted	2,911,750	$ 0.57		
Forfeited	(40,409)	$ 1.99		
Exercised	(8,000)	$ 0.54		
Expired	(137,574)	$ 2.06		
Outstanding options, September 30, 2023	9,821,229	$ 1.57	6.41	$ 437,894
Options vested and exercisable, September 30, 2023	5,049,015	$ 1.97	3.75	$ 193,470

Total unrecognized compensation cost related to non-vested stock options as of September 30, 2023 was approximately $3.6 million and is expected to be recognized within future operating results over a weighted-average period of 3.14 years.

No options were granted during three months ended September 30, 2023 and the weighted average grant date fair value of options granted during the three months ended September 30, 2022 was $0.57 per share . During the three months ended September 30, 2023 and 2022, 619,104 and 108,611 options vested, respectively.

The weighted average grant date fair value of options granted during the nine months ended September 30, 2023 and 2022, was $0.41 per share and $0.78 per share, respectively. During the nine months ended September 30, 2023 and 2022, 924,715 and 314,380 options vested, respectively.

The estimated fair value of stock options granted to employees and consultants during the three and nine months ended September 30, 2023 and 2022, were calculated using the Black-Scholes option-pricing model using the following assumptions:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Expected volatility	*	97.4 %	80.2 - 81.9 %	78.0 - 97.4 %
Weighted-average volatility	*	97.4 %	81.7 %	94.1 %
Expected dividends	*	— %	— %	— %
Expected term (in years)	*	5.77 - 6.08	5.77 - 6.08	5.50 - 6.08
Risk-free rate	*	3.55 - 3.56 %	3.50 - 3.90 %	1.38 - 3.56 %

***** No options were granted during the three months ended September 30, 2023.

Restricted Stock

Stock award activity for employees and non-employees under the Equity Compensation Plans for the nine months ended September 30, 2023 was as follows:

	Number of shares	Weighted Average Grant Date Fair Value
Unvested as of December 31, 2022	350,000	$ 1.72
Granted	318,875	$ 0.54
Vested	(106,250)	$ 1.72
Unvested as of September 30, 2023	562,625	$ 1.04

At September 30, 2023, the Company had an aggregate of $551,650 of unrecognized equity-based compensation related to restricted stock units outstanding. During the three months ended September 30, 2023, 31,250 shares with a fair value of $44,325 vested. During the nine months ended September 30, 2023 106,250 shares with a fair value of $186,075 vested. As of September 30, 2023, the Company had 106,250 restricted stock units vested but not issued. The unrecognized expense for restricted stock units is expected to be recognized within future operating results over a weighted average period of 3.11 years.

Stock-based compensation expense

Stock-based compensation expense for the three and nine months ended September 30, 2023 and 2022 was as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Research and development	$ 155,596	$ 165,607	$ 469,821	$ 683,646
General and administrative	483,650	412,596	1,417,020	1,362,018
Total	$ 639,246	$ 578,203	$ 1,886,841	$ 2,045,664

(12) 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 and indicate the fair value hierarchy of the valuation inputs the Company utilized to determine such fair value:

	As of September 30, 2023			
	Total	Quoted Prices In Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)
Liabilities:				
Public Warrant liability	$ 402,500	$ 402,500	$ —	$ —
Private Placement Warrant liability	14,602	—	—	14,602
Total	$ 417,102	$ 402,500	$ —	$ 14,602

	As of December 31, 2022			
	Total	Quoted Prices In Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)
Liabilities:				
Public Warrant liability	$ 310,500	$ 310,500	$ —	$ —
Private Placement Warrant liability	$ 10,430	—	—	10,430
Total	$ 320,930	$ 310,500	$ —	$ 10,430

Public Warrants

Each whole Public Warrant entitles the holder to purchase one share of the Company's common stock at a price of $11.50 per share, subject to adjustment as discussed herein. The Public Warrants became exercisable 30 days after Closing Date and will expire five years after the Closing Date, at 5:00 p.m., New York City time, or earlier upon redemption or liquidation.

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 $18.00 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, the management will have the option to require any holder that wishes to exercise its warrant to do so on a "cashless basis." If the 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.

As of September 30, 2023, an aggregate of 5,750,000 Public Warrants classified as liabilities were outstanding.

Private Placement Warrants

The private placement warrants (the "Private Placement Warrants") held by assignees of Big Cypress Holdings LLC, a Delaware limited liability company which acted as the Company's sponsor in connection with the IPO, 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 Business Combination. Additionally, the Private Placement Warrants will be exercisable on a cashless basis and be non-redeemable so 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.

As of September 30, 2023, an aggregate of 208,600 Private Placement Warrants classified as liabilities were outstanding.

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 7,363,377 shares of common stock and warrants to purchase up to 7,363,377 shares of common stock (the "PIPE Warrants"), and in a private placement offering. The combined purchase price per share and accompanying PIPE Warrant was $1.08 (the "December Private Placement"). Three directors of the Company participated in the December Private Placement, each paying a $0.125 premium per share and accompanying PIPE Warrant. The PIPE Warrants, including those purchased by the participating directors of the Company are exercisable beginning six months from the date of issuance at an exercise price equal to $1.08 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 Private Placement. The

Company also issued Brookline Capital Markets a warrant to purchase up to an aggregate of 210,913 shares of common stock (the "PIPE Placement Agent Warrants"), 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 $1.35 per share and are exercisable six months from the date of issuance and expires five years from the date of issuance.

As of September 30, 2023, 7,363,377 PIPE Warrants and 210,913 PIPE Placement Agent Warrants classified as equity were outstanding.

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", and the action brought by Ladenburg, the "Ladenburg Action"). In connection with the 2023 Ladenburg Agreement, on March 24, 2023, the Company (i) issued to Ladenburg a warrant (the "Ladenburg Warrants") to purchase up to 300,000 shares of common stock, exercisable for three years from the date of issuance at $0.5424 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 balance sheet as of December 31, 2022. On June 30, 2023, in accord with the terms of the agreement, the Company issued 1,916,894 shares of common stock to satisfy a portion of its obligations under the 2023 Ladenburg Agreement. As of September 30, 2023, there is $1.1 million of consideration remaining under the 2023 Ladenburg Agreement contained within accrued expenses and other current liabilities on the Company's condensed balance sheet as of September 30, 2023.

As of September 30, 2023, 300,000 Ladenburg Warrants classified as equity were outstanding.

Presentation and Valuation of the Warrants

Liability Classified 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 balance sheets as of September 30, 2023 and December 31, 2022. The initial fair value of the warrant liabilities were 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 statements of operations for the three and nine months ended September 30, 2023 and 2022.

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 ("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.

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

	September 30, 2023
Balance, December 31, 2022	$ 10,430
Change in fair value of Private Placement Warrant liability	(2,086)
Balance, March 31, 2023	$ 8,344
Change in fair value of Private Placement Warrant liability	12,516
Balance, June 30, 2023	$ 20,860
Change in fair value of Private Placement Warrant liability	$ (6,258)
Balance, September 30, 2023	$ 14,602

The key inputs into the valuations as of September 30, 2023 and December 31, 2022 were as follows:

	September 30, 2023	December 31, 2022
Risk-free interest rate	4.79%	4.00%
Expected term remaining (years)	3.06	3.81
Implied volatility	97.0%	82.0%
Closing common stock price on the measurement date	$ 0.63	$ 0.59

As of September 30, 2023 and December 31, 2022, 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, accounts receivable, and notes payable approximate their fair values due to their near-term maturities.

Equity Classified Warrants

The Company determined the Ladenburg Warrants, PIPE Warrants, and PIPE Placement Agent Warrants met all necessary criteria to be accounted for as equity in accordance with ASC 815-40, *Derivatives and Hedging—Contracts in Entity's Own Equity.* As such, they are presented within additional paid-in capital within Company's condensed statements of changes in stockholders' equity and condensed balance sheets.

Warrants classified as equity are initially measured at fair value. Subsequent changes in fair value are not recognized as long as the warrants continue to be classified as equity.

The initial fair value of each PIPE Warrant and PIPE Placement Agent Warrant issued was determined using the Black-Scholes option-pricing model. All relevant terms and conditions for the PIPE Warrant and PIPE Placement Agent Warrant are identical with the exception of the exercise prices of $1.08 and $1.35, respectively.

The key inputs into the valuations as of the initial measurement date, December 7, 2022, were as follows:

	Initial Measurement
Risk-free interest rate	3.62%
Expected term remaining (years)	5.00
Implied volatility	89.0%
Closing common stock price on the measurement date, less discount for lack of marketability (1)	$ 0.66

(1) As the underlying shares are restricted from sale for a period of 180 days from the date of the 2022 Private Placement, the fair value of the warrants was estimated using the Black-Scholes option pricing model that uses several inputs, including market price of the Company's common shares at the end of each reporting period (a level one input), less a discount for lack of marketability (a level two input). The discount for lack of marketability was estimated upon consideration of volatility and the length of the lock-up period.

Upon initial measurement, the fair value of the PIPE Warrants and PIPE Placement Agent Warrants were determined to be $0.42 and $0.39 per warrant, respectively, for aggregate values of approximately $3.1 million and $82 thousand, respectively. In the Private Placement, the Company recognized the PIPE Warrants and PIPE Placement Agent Warrants on a relative fair value basis with approximately $2.2 million and $58 thousand being allocated to each as a component of additional paid-in capital within the Company's condensed statements of changes in stockholders' equity and condensed balance sheets as of September 30, 2023 and December 31, 2022.

The initial fair value of each Ladenburg Warrant issued and exercisable at $0.5424 has been determined using the Black-Scholes option-pricing model.

The key inputs into the valuations as of the 2023 Ladenburg Agreement initial measurement date, March 21, 2023, were as follows:

	Initial Measurement
Risk-free interest rate	3.98%
Expected term remaining (years)	3.00
Implied volatility	94.0%
Closing common stock price on the measurement date	$ 0.52

Upon initial measurement, the fair value of each Ladenburg Warrant was determined to be $0.31, per warrant for a value of approximately $93 thousand. The total fair value of the Ladenburg Warrants was recognized by the company as a non-cash expense and allocated to additional paid-in capital within the Company's condensed statement of changes in stockholders' equity and condensed balance sheet.

(13) Income Taxes

The effective income tax rate for the third quarter of 2023 is 0.00%, compared with an effective tax rate of (0.20%) for the year ending December 31, 2022. The prior year tax rate reflects a tax provision on a pre-tax loss.

The Company continues to record a valuation allowance on its net deferred tax assets. The valuation increased by approximately $4.1 million for the nine months ended September 30, 2023. The Company has not recognized any reserves for uncertain tax positions.

(14) Related Party Transactions

For the three and nine months ended September 30, 2023 and 2022, under the Related Party Transaction Policy the Company adopted in the fourth quarter of 2021, 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.

(15) 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 $71 thousand and $91 thousand, respectively, during the three months ended September 30, 2023 and 2022, and approximately $211 thousand and $350 thousand, respectively, during the nine months ended September 30, 2023 and 2022.

(16) 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.

(17) Subsequent Events

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, for an aggregate offering price of $7.5 million (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, for an aggregate exercise price of $70.5 million (the "Series A-3 Preferred Stock"), (iii) tranche B warrants to acquire shares of Series A-3 Preferred Stock, par value $0.0001 per share, for an aggregate exercise price of $52.0 million (the "Preferred Tranche B Warrants"), and (iv) tranche C warrants to purchase Series A-3 Preferred Stock, par value $0.0001 per share, for an aggregate exercise price of $130.0 million (the "Preferred Tranche C Warrants" and together with the Preferred Tranche A Warrants, and Preferred Tranche B Warrants, the "Preferred Warrants" and the shares underlying the Preferred Warrants, the "Preferred Warrant Shares").

On October 3, 2023, the Company closed on the issuance of the 7,500 shares of Series A-1 Preferred Stock. In connection with the issuance of the 7,500 shares of Series A-1 Preferred Stock, gross proceeds were $7.5 million, before deducting fees to be paid to the placement agent and financial advisors of the Company and other offering expenses payable by the Company. The Company intends to use the net proceeds from the September 2023 Offering for working capital purposes and other general corporate purposes and to advance its SAB-142-101 clinical trial.

Pursuant to the Certificate of Designation of Preferences, Rights and Limitations of the Series A Convertible Voting Preferred Stock, (the "Certificate of Designation"), each share of Series A-1 Preferred Stock, subject to the Stockholder Approval (as defined below), converts automatically into shares of common stock, par value $0.0001 per share, of the Company and/or, if applicable, shares of Series A-2 Preferred Stock, par value $0.0001 per share, of the Company (the "Series A-2 Preferred Stock" and together with the Series A-1 Preferred Stock, the "Issued Preferred Stock"), in lieu of common stock.

Subject to the terms and limitations contained in the Certificate of Designation:

- The Series A-1 Preferred Stock issued in the September 2023 Offering will not become convertible until the Company's stockholders approve (i) the issuance of all common stock issuable upon conversion of the Issued Preferred Stock and the Preferred Warrant Shares, (ii) the issuance of the Preferred Warrant Shares upon exercise of the Preferred Warrants and (iii)

an amendment to the Company's Certificate of Incorporation to increase the number of authorized shares of common stock from 490,000,000 to 800,000,000 (collectively, the "Stockholder Approval").

- On the first trading day following the announcement of the Stockholder Approval, each share of Series A-1 Preferred Stock will automatically convert into common stock, at the conversion price of $0.63 per share (the "Conversion Price"), provided that to the extent such conversion would cause a holder of Series A-1 Preferred Stock to exceed the applicable beneficial ownership limitation, such holder will receive shares of Series A-2 Preferred Stock in lieu of common stock.
- At the option of the holder, each share of Series A-2 Preferred Stock and Series A-3 Preferred Stock will be convertible into common stock, at the Conversion Price.

The Preferred Tranche A Warrants are exercisable commencing on the Issuance Date (as defined in the Form of Preferred Tranche A Warrant) until the earlier of (i) fifteen (15) trading days following the date of public announcement of the fulsome data set from the Sanofi S.A. Protect trial and (ii) December 15, 2023. If any purchaser in the September 2023 Offering fails to exercise their Preferred Tranche A Warrant in full prior to its expiration date, such purchaser will forfeit all Preferred Tranche A Warrants, Preferred Tranche B Warrants and Preferred Tranche C Warrants issued to such purchaser.

The Preferred Tranche B Warrants are exercisable commencing on the Exercisability Date (as defined in the Form of Preferred Tranche B Warrant) until the later of (i) 15 days following the Company's announcement of data from its SAB-142-101 clinical trial and (ii) March 31, 2025.

The Preferred Tranche C Warrants are exercisable commencing on the Exercisability Date (as defined in the Form of Preferred Tranche C Warrant) until the five (5) year anniversary of the Exercisability Date.

Prior to the extended mandatory exercise time, certain investors informed the Company that they would not exercise their mandatorily exercisable Preferred Tranche A Warrants. Certain of the investors agreed to assume and exercise 16,269 of the 27,115 unexercised Preferred Tranche A Warrants and received 10,846 of the Preferred Tranche B Warrants and 27,115 of the Preferred Tranche C Warrants from the transferring Investors. The balance of the unexercised Preferred Tranche A Warrants and the remaining Tranche B Warrants and Tranche C Warrants issued to the Investors who failed to exercise their Tranche B Warrants were cancelled. Following these updates to the offering, the Company issued 59,654 shares of Series A-1 Preferred Stock for aggregate proceeds of approximately $59.65 million upon the exercise of the Tranche A Warrants. In addition, the Company now has outstanding 42,846 Tranche B Warrants to acquire shares of Series A-3 Preferred Stock for an aggregate exercise price of approximately $42.85 million, and 107,115 Tranche C Warrants to purchase Series A-3 Preferred Stock for an aggregate exercise price of approximately $107.1 million.

Between October 2023 and November 2023, an aggregate of 59,654 Preferred Tranche A Warrants were exercised for an aggregate of 59,654 shares of Series A-1 Preferred Stock for an aggregate of approximately $59.7 million in proceeds.

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 condensed 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"), as amended, 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; discovery data of SAB-195; Phase 1 & Phase 2a results of SAB-176; and Phase 1, 1b, 2, and 3 results for SAB-185 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.

Overview

We are a clinical-stage, biopharmaceutical company focused on the development of powerful and proprietary immunotherapeutic polyclonal human antibodies to treat and prevent infectious diseases and immune and autoimmune disorders, including infectious diseases resulting from outbreaks and pandemics as well as immunology, gastroenterology, and respiratory diseases that have significant mortality and health impacts on immunocompromised patients. We have applied advanced genetic engineering and antibody science to develop transchromosomic (Tc) Bovine™. Our versatile DiversitAb™ platform is applicable to a wide range of serious unmet needs in human diseases. It produces natural, specifically targeted, high-potency, fully-human polyclonal immunotherapies without the need for human donors. We currently have multiple drug development programs underway and collaborations with global pharmaceutical companies.

We are advancing clinical programs in two indications, and preclinical development in three indications. In addition, we are executing on two research collaborations with global pharmaceutical companies, including CSL Behring and an undisclosed collaboration.

We formed SAB Australia, in order to qualify for the Australian government's research and development tax credit for research and development dollars spend in Australia. The primary purpose of SAB Australia is to conduct clinical trials for SAB-142. We expect to commence a Phase 1 trial in the fourth quarter of 2023.

We generated total revenue of $1.3 million and $3.6 million for the three months ended September 30, 2023 and 2022, respectively, and $1.9 million and $21.7 million for the nine months ended September 30, 2023 and 2022, respectively. Our revenue to date has been primarily derived from government grants.

We plan to focus a substantial portion of our resources on continued research and development efforts towards deepening our technology and expertise with our platform and as well as indications in infectious disease and autoimmune indications. As a result, we expect to continue to make significant investments in these areas for the foreseeable future. We incurred research and development expenses of $4.0 million and $7.4 million, respectively, for the three months ended September 30, 2023 and 2022, and $12.2 million and $29.3 million, respectively, for the nine months ended September 30, 2023 and 2022. We incurred general and administrative

expenses of $2.6 million and $4.0 million for the three months ended September 30, 2023 and 2022, respectively, and $8.9 million and $13.5 million for the nine months ended September 30, 2023 and 2022. We expect to continue to incur significant expenses, and we expect such expenses to increase substantially in connection with our ongoing activities, including as we:

- invest in research and development activities to optimize and expand our DiversitAb platform;
- develop new and advance preclinical and clinical progress of pipeline programs;
- market to and secure partners to commercialize our products;
- expand and enhance operations to deliver products, including investments in manufacturing;
- acquire businesses or technologies to support the growth of our business;
- continue to establish, protect and defend our intellectual property and patent portfolio;
- operate as a public company.

To date, we have primarily financed our operations from government agreements and the issuance and sale of common stock.

We generated a net loss of $5.1 million and $7.1 million, respectively, for the three months ended September 30, 2023 and 2022, and a net loss of $19.3 million and $10.9 million for the nine months ended September 30, 2023 and 2022. As of September 30, 2023, we had an accumulated deficit of $67.2 million with cash and cash equivalents totaling $2.4 million.

Recent Developments

September 2023 Private Placement

On September 29, 2023, we entered into the September 2023 Purchase Agreement with certain accredited investors, pursuant to which we agreed to issue and sell, in the “September 2023 Offering, (i) 7,500 shares of Series A-1 Preferred Stock, for an aggregate offering price of $7.5 million, (ii) Preferred Tranche A Warrants to acquire shares of Series A-1 Preferred Stock or Series A-3 Preferred Stock, for an aggregate exercise price of $70.5 million, (iii) Preferred Tranche B Warrants to acquire shares of Series A-3 Preferred Stock, for an aggregate exercise price of $52.0 million, and (iv) Preferred Tranche C Warrants to purchase Series A-3 Preferred Stock, for an aggregate exercise price of $130.0 million.

On October 3, 2023, we closed on the issuance of the 7,500 shares of Series A-1 Preferred Stock. In connection with the issuance of the 7,500 shares of Series A-1 Preferred Stock, gross proceeds as of September 30, 2023 were $7.5 million, before deducting fees to be paid to the placement agent and our financial advisors and other offering expenses payable by us. We intend to use the net proceeds from the September 2023 Offering for working capital purposes and other general corporate purposes and to advance its SAB-142-101 clinical trial.

Pursuant to the Certificate of Designation, each share of Series A-1 Preferred Stock, subject to the Stockholder Approval, converts automatically into our shares of common stock, par value $0.0001 per share, and/or, if applicable, our shares of Series A-2 Preferred Stock, par value $0.0001 per share, in lieu of common stock.

Subject to the terms and limitations contained in the Certificate of Designation:

- The Series A-1 Preferred Stock issued in the September 2023 Offering will not become convertible until our stockholders approve (i) the issuance of all common stock issuable upon conversion of the Issued Preferred Stock and the Preferred Warrant Shares, (ii) the issuance of the Preferred Warrant Shares upon exercise of the Preferred Warrants and (iii) an amendment to our Certificate of Incorporation to increase the number of authorized shares of common stock from 490,000,000 to 800,000,000.
- On the first trading day following the announcement of the Stockholder Approval, each share of Series A-1 Preferred Stock will automatically convert into common stock, at the conversion price of $0.63 per share, provided that to the extent such conversion would cause a holder of Series A-1 Preferred Stock to exceed the applicable beneficial ownership limitation, such holder will receive shares of Series A-2 Preferred Stock in lieu of common stock.
- At the option of the holder, each share of Series A-2 Preferred Stock and Series A-3 Preferred Stock will be convertible into common stock, at the Conversion Price.

The Preferred Tranche A Warrants are exercisable commencing on the Issuance Date (as defined in the Form of Preferred Tranche A Warrant) until the earlier of (i) fifteen (15) trading days following the date of public announcement of the fulsome data set from the Sanofi S.A. Protect trial and (ii) December 15, 2023. If any purchaser in the September 2023 Offering fails to exercise their Preferred Tranche A Warrant in full prior to its expiration date, such purchaser will forfeit all Preferred Tranche A Warrants, Preferred Tranche B Warrants and Preferred Tranche C Warrants issued to such purchaser.

The Preferred Tranche B Warrants are exercisable commencing on the Exercisability Date (as defined in the Form of Preferred Tranche B Warrant) until the later of (i) 15 days following our announcement of data from its SAB-142-101 clinical trial and (ii) March 31, 2025.

The Preferred Tranche C Warrants are exercisable commencing on the Exercisability Date (as defined in the Form of Preferred Tranche C Warrant) until the five (5) year anniversary of the Exercisability Date.

Prior to the extended mandatory exercise time, certain investors informed us that they would not exercise their mandatorily exercisable Preferred Tranche A Warrants. Certain of the investors agreed to assume and exercise 16,269 of the 27,115 unexercised Preferred Tranche A Warrants and received 10,846 of the Preferred Tranche B Warrants and 27,115 of the Preferred Tranche C Warrants from the transferring Investors. The balance of the unexercised Preferred Tranche A Warrants and the remaining Tranche B Warrants and Tranche C Warrants issued to the Investors who failed to exercise their Tranche B Warrants were cancelled. Following these updates to the offering, we issued 59,654 shares of Series A-1 Preferred Stock for aggregate proceeds of $59.65 million upon the exercise of the Tranche A Warrants. In addition, we now have outstanding 42,846 Tranche B Warrants to acquire shares of Series A-3 Preferred Stock for an aggregate exercise price of $42.85 million, and 107,115 Tranche C Warrants to purchase Series A-3 Preferred Stock for an aggregate exercise price of approximately $107.1 million.

Between October 2023 and November 2023, an aggregate of 59,654 Preferred Tranche A Warrants were exercised for an aggregate of 59,654 shares of Series A-1 Preferred Stock for an aggregate of approximately $59.7 million in proceeds.

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, 2022, and supplemented with the following revised or additional risk factors in “Part II, Item 1A, Risk Factors.”

Components of Results of Operations

Revenue

Our revenue has historically been generated through grants from government and other (non-government) organizations. We currently have no commercially approved products.

Grant revenue is recognized for the period that the research and development services occur, as qualifying expenses are incurred or conditions of the grants are met. We 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.

The total revenue for government grants was approximately $1.3 million and $3.6 million, respectively, for the three months ended September 30, 2023 and 2022, and $1.9 million and $21.7 million, respectively, for the nine months ended September 30, 2023 and 2022.

NIH-NIAID (Federal Award #1R44AI117976-01A1) – this grant was for $1.4 million and the original term was September 2019 through August 2021. This grant was subsequently amended to extend the end date to August 2022. No grant income was recognized for this grant for the three and nine months ended September 30, 2023. No grant income was recognized for this grant for the three months ended September 30, 2022, and approximately $30 thousand of grant income was recognized for the nine months ended September 30, 2022.This grant was completed in 2022.

NIH-NIAID (Federal Award #1R41AI131823-02) – this grant was for approximately $1.5 million and had an original term of April 2019 through March 2021. The grant was subsequently amended to extend the end date to March 2023. No grant income was recognized for this grant for the three months ended September 30, 2023 and approximately $192 thousand of grant income was recognized for the nine months ended September 30, 2023, and approximately $150 thousand and $281 thousand of grant income was recognized for the three and nine months ended September 30, 2022, respectively. This grant was completed as of June 30, 2023.

NIH-NIAID through Geneva Foundation (Federal Award #1R01AI132313-01, Subaward #S-10511-01) – this grant was for approximately $2.7 million and had an original term of August 2017 through July 2021. The grant was subsequently amended to extend the end date to July 2023. No grant income was recognized for this grant for the three months ended September 30, 2023, and approximately $273 thousand for the nine months ended September 30, 2023, and approximately $39 thousand and $88 thousand of

grant income was recognized for the three and nine months ended September 30, 2022, respectively. This grant was completed as of June 30, 2023.

DoD JPEO through Advanced Technology International – this grant was for a potential of $25 million, awarded in stages starting in August 2019 and with potential stages running through February 2023. Additional contract modifications were added to this contract in 2020 and 2021 for work on a COVID therapeutic, bringing the contract total to $203.6 million. Grant income recognized was approximately $1.3 million and $1.5 million for the three months ended September 30, 2023 and 2022, respectively, and $1.5 million and $21.3 million for the nine months ended September 30, 2023 and 2022, respectively. This grant was terminated in 2022.

The grants for the JPEO Rapid Response contract are cost reimbursement agreements, with reimbursement of qualified direct research and development expense (labor and consumables) with an overhead charge (based on actual, reviewed quarterly) and a fixed fee (9%).

On August 3, 2022, we received notice from the DoD terminating the JPEO Rapid Response contract. We engaged in negotiations with the DoD to compensate us for services provided prior to the JPEO Rapid Response Contract Termination and costs we would be expected to bear in future periods. A termination and settlement proposal was submitted the DoD on September 9, 2022; we submitted a final invoice on December 15, 2022; and received payment from the DoD on or about January 12, 2023. The terms of the arrangement provide for a cost-reimbursable structure, and state that the parties will work in good faith equitable reimbursement for work performed toward accomplishment of the tasks provided in the agreement. At this time, other than certain deferred obligations (presented within deferred grant income within our condensed unaudited balance sheet) potentially payable to the DoD solely due to subsequent negotiations with third-party vendors, we believe and have been advised there is a reasonable, good faith basis for the position that no present or future obligations exist. Revenue recognized subsequent to the JPEO Rapid Response Contract Termination relates to satisfaction of residual obligations under the termination and settlement agreement—see Note 2, *Summary of Significant Accounting Policies* in our condensed financial statements for further information about our established revenue recognition process.

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 various indications we are working on. We have not historically tracked our research and development expenses on a product candidate-by-product candidate basis.

For the three and nine months ended September 30, 2023 and 2022, we had contracts with multiple CRO to conduct and complete clinical studies. In the case of SAB-185, the CRO has been contracted and paid by the US government. For SAB-176, PPD Development, LP, acting as CRO oversaw the Phase 1 safety study. The terms of that agreement are subject to confidentiality, and the status of the agreement is that it is current, in good standing and 100% of the contract has been paid as of September 30, 2023. SAB has also contracted with hVIVO Services Limited to conduct the Phase 2a influenza study on SAB-176. The terms of that agreement are subject to confidentiality, and the status of the agreement is that it is current, in good standing and 100% of the contract has been paid as of September 30, 2023.

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 as a percentage of revenue.

Major components within our research and development expenses are salaries and benefits (laboratory & farm), laboratory supplies, animal care, contract manufacturing, clinical trial expense, outside laboratory services, project consulting, and facility expense. Our platform allows us to work on multiple projects with the same resources, as the research and development process of each product is very similar (with minimal differences in the manufacturing process).

Research and development expenses by component for the three months ended September 30, 2023 and 2022:

	Three Months Ended September 30,	
	2023	2022
Salaries & benefits	$ 1,625,985	$ 2,761,918
Laboratory supplies	174,012	1,686,573
Animal care	112,421	183,756
Contract manufacturing	388,171	447,657
Clinical trial expense	210,265	—
Outside laboratory services	170,905	757,560
Project consulting	16,585	97,506
Facility expense	1,312,359	1,391,031
Other expenses	9,015	26,977
Total research and development expenses	$ 4,019,718	$ 7,352,978

Research and development expenses by component for the nine months ended September 30, 2023 and 2022:

	Nine Months Ended September 30,	
	2023	2022
Salaries & benefits	$ 4,995,096	$ 9,686,354
Laboratory supplies	741,375	5,520,683
Animal care	804,006	1,257,314
Contract manufacturing	388,171	5,231,389
Clinical trial expense	367,301	235,118
Outside laboratory services	539,279	2,644,950
Project consulting	307,210	650,684
Facility expense	3,975,518	3,951,024
Other expenses	99,613	122,889
Total research and development expenses	$ 12,217,569	$ 29,300,405

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 expect that our general and administrative expenses will continue to increase in future periods, primarily due to increased headcount to support anticipated growth in the business and due to incremental costs associated with operating as a public company, including costs to comply with the rules and regulations applicable to companies listed on a securities exchange and costs related to compliance and reporting obligations pursuant to the rules and regulations of the SEC and stock exchange listing standards, public relations, insurance and professional services. 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.

Interest income

Interest income consists of interest earned on cash balances in our bank accounts.

Interest expense

Interest expense consists primarily of interest related to borrowings under notes payable for equipment, abated rent, and insurance financing.

Results of Operations

The following tables set forth our results of operations for the three months ended September 30, 2023 and 2022:

	Three Months Ended September 30,	
	2023	2022
Revenue		
Grant revenue	$ 1,267,361	$ 3,589,708
Total revenue	1,267,361	3,589,708
Operating expenses		
Research and development	4,019,718	7,352,978
General and administrative	2,570,565	4,044,046
Total operating expenses	6,590,283	11,397,024
Loss from operations	(5,322,922)	(7,807,316)
Other income (expense)		
Changes in fair value of warrant liabilities	178,758	782,962
Interest expense	(69,700)	(70,626)
Interest income	14,364	17,385
Other income	97,183	1,527
Total other income (expense)	220,605	731,248
Loss before income taxes	(5,102,317)	(7,076,068)
Net loss	$ (5,102,317)	$ (7,076,068)

The following tables set forth our results of operations for the nine months ended September 30, 2023 and 2022:

	Nine Months Ended September 30,	
	2023	2022
Revenue		
Grant revenue	$ 1,933,980	$ 21,743,309
Total revenue	1,933,980	21,743,309
Operating expenses		
Research and development	12,217,569	29,300,405
General and administrative	8,917,960	13,500,512
Total operating expenses	21,135,529	42,800,917
Loss from operations	(19,201,549)	(21,057,608)
Other income (expense)		
Changes in fair value of warrant liabilities	(96,172)	10,362,614
Interest expense	(237,405)	(213,885)
Interest income	100,920	41,143
Other income	97,183	1,527
Total other income (expense)	(135,474)	10,191,399
Loss before income taxes	(19,337,023)	(10,866,209)
Net loss	$ (19,337,023)	$ (10,866,209)

Comparison of the three and nine months ended September 30, 2023 and 2022

Revenue

	Three Months Ended September 30,			
	2023	2022	Change	% Change
Revenue	$ 1,267,361	$ 3,589,708	$ (2,322,347)	(64.7)%
Total revenue	$ 1,267,361	$ 3,589,708		

Revenue decreased by $2.3 million, or 64.7% , in the three months ended September 30, 2023 as compared to the three months ended September 30, 2022, primarily due to the JPEO Rapid Response Contract Termination. Included in revenues for the three months ended September 30, 2023, are closeout activities and charges of $0.4 million for supplies, and $0.9 million for outside research manufacturing services, as compared to $0.6 million for labor, and $2.5 million for supplies, for the three months ended September 30, 2022.

	Nine Months Ended September 30,			
	2023	2022	Change	% Change
Revenue	$ 1,933,980	$ 21,743,309	$ (19,809,329)	(91.1)%
Total revenue	$ 1,933,980	$ 21,743,309		

Revenue decreased by $19.8 million, or 91.1%, in the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, primarily due to the JPEO Rapid Response Contract Termination. Included in revenues for the nine months ended September 30, 2023, are closeout activities and charges of $0.1 million for labor, $0.5 million for supplies, $1.4 million for outside research manufacturing services, as compared to $6.7 million for labor, $7.0 million for supplies, and $5.7 million for outside manufacturing services for the nine months ended September 30, 2022.

As a result of the JPEO Rapid Response Contract Termination, we expect future revenues to be lower as our primary pipeline development target of Type 1 diabetes remains independently financed as we explore potential partnerships, co-development opportunities, and licensing arrangements.

Research and Development

	Three Months Ended September 30,			
	2023	2022	Change	% Change
Research and development	$ 4,019,718	$ 7,352,978	$ (3,333,260)	(45.3)%
Total research and development expenses	$ 4,019,718	$ 7,352,978		

Research and development expenses decreased by $3.3 million, or 45.3% , for the three months ended September 30, 2023 as compared to the three months ended September 30, 2022, primarily due to decreases in laboratory supplies (year-over-year decrease of $1.6 million, 89.7%), contract manufacturing costs (year-over-year decrease of $0.04 million, 8%), salaries and benefits (year-over-year decrease of $1.1 million, 41.1%), outside lab services due to the JPEO Rapid Response Contract Termination (year-over-year decrease of $0.6 million, 77.4%), project consulting (year-over-year decrease of $0.1 million, 108.1%) and offset by overhead costs (year-over-year increase of $0.1 million, 8.7%).

	Nine Months Ended September 30,			
	2023	2022	Change	% Change
Research and development	$ 12,217,569	$ 29,300,405	$ (17,082,836)	(58.3)%
Total research and development expenses	$ 12,217,569	$ 29,300,405		

Research and development expenses decreased by $17.1 million, or 58.3%, for the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, primarily due to decreases in laboratory supplies (year-over-year decrease of $4.9 million, 79.9%), contract manufacturing costs (year-over-year decrease of $4.8 million, 92%), salaries and benefits (year-over-year decrease of $4.7 million, 48.4%), outside lab services due to the JPEO Rapid Response Contract Termination (year-over-year decrease of $2.1 million, 79.6%), project consulting (year-over-year decrease of $0.4 million, 56.5%) and overhead costs (year-over-year decrease of $0.2 million, 3.9%).

The overall decrease in research and development expense was primarily due to targeted cost reduction measures pausing certain unfunded research activities for SAB-185, and prioritizing our earlier stage lead therapeutic candidate in Type 1 diabetes. Future period research and development expenses will decrease relative to comparable prior periods as we no longer expect to incur costs of contract manufacturing, outside laboratory services, project consulting, and facilities costs related to the production of SAB-185.

General and Administrative

	Three Months Ended September 30,			
	2023	2022	Change	% Change
General and administrative	$ 2,570,565	$ 4,044,046	$ (1,473,481)	(36.4)%
Total general and administrative expenses	$ 2,570,565	$ 4,044,046		

General and administrative expenses decreased by $1.5 million, or 36.4%, in the three months ended September 30, 2023 as compared to the three months ended September 30, 2022, primarily due to salaries and benefits (year-over-year decrease of $0.3 million, 18.2%), project consulting (year-over-year decrease of $0.3 million, 82.2%), and other administrative support fees relating to IT, human resources, and legal (year-over-year decrease of $0.5 million, 34.5%. The decrease was primarily due to discretionary cost reduction measures and increased efficiencies as we continue to mature as a publicly traded company.

	Nine Months Ended September 30,			
	2023	2022	Change	% Change
General and administrative	$ 8,917,960	$ 13,500,512	$ (4,582,552)	(33.9)%
Total general and administrative expenses	$ 8,917,960	$ 13,500,512		

General and administrative expenses decreased by $4.6 million, or 33.9%, in the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, primarily due to insurance costs (year-over-year decrease of $1.2 million, 53.5%), salaries and benefits (year-over-year decrease of $2.0 million, 35.8%), project consulting (year-over-year decrease of $0.8 million, 63.0%), and other administrative support fees relating to IT, human resources, and legal (year-over-year decrease of $0.6 million, 13.2%). The decrease was primarily due to discretionary cost reduction measures and increased efficiencies as we continue to mature as a publicly traded company.

We anticipate that our general and administrative expenses will increase in the future as they relate to audit, legal, regulatory, and tax-related services associated with maintaining compliance with exchange listing and SEC requirements, director and officer liability insurance, investor relations costs and other costs associated with being a public company. Additionally, if and when we believe a regulatory approval of a product candidate appears likely, we anticipate an increase in staffing and related expenses as a result of our preparation for commercial operations, especially as it relates to the sales and marketing of our product candidates.

Non-operating Income

	Three Months Ended September 30,			
	2023	2022	Change	% Change
Changes in fair value of warrant liabilities	$ 178,758	$ 782,962	$ (604,204)	(77.2)%
Other income	97,183	1,527	95,656	6264%
Total non-operating income	$ 275,941	$ 784,489		

Total non-operating income decreased by $0.5 million, or 64.8% in the three months ended September 30, 2023 as compared to the three months ended September 30, 2022 primarily due to the change in fair value of warrant liabilities (year-over-year decrease of $0.6 million, 77.2%), and Australian research and development tax credit (year-over-year increase of $0.1 million, 6264.3%).

	Nine Months Ended September 30,			
	2023	2022	Change	% Change
Changes in fair value of warrant liabilities	$ (96,172)	$ 10,362,614	$ (10,458,786)	(100.9)%
Other income	97,183	1,527	95,656	6264%
Total non-operating income	$ 1,011	$ 10,364,141		

Total non-operating income decreased by $10.4 million or 100.0% in the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022 primarily due to changes in the fair value of the warrant liabilities (year-over-year decrease of $10.5 million, 100.9%) and Australian research and development tax credit (new in the current fiscal year).

Interest Expense

	Three Months Ended September 30,			
	2023	2022	Change	% Change
Interest expense	$ 69,700	$ 70,626	$ (926)	(1.3)%
Total interest expense	$ 69,700	$ 70,626		

Interest expense in the three months ended September 30, 2023 was consistent with interest expense in the three months ended September 30, 2022 with the added interest expense on the 8% Unsecured Convertible Note in the current fiscal period offset by higher interest expenses associated with our finance leases in the same period of the prior year.

	Nine Months Ended September 30,			
	2023	2022	Change	% Change
Interest expense	$ 237,405	$ 213,885	$ 23,520	11.0 %
Total interest expense	$ 237,405	$ 213,885		

Interest expense increased in the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, driven by adding the 8% Unsecured Convertible Note.

Interest Income

	Three Months Ended September 30,			
	2023	2022	Change	% Change
Interest income	$ 14,364	$ 17,385	$ (3,021)	(17.4)%
Total interest income	$ 14,364	$ 17,385		

Interest income decreased by $3 thousand, or 17.4%, during the three months ended September 30, 2023 as compared to the three months ended September 30, 2022, primarily due to lower interest earning cash balances.

	Nine Months Ended September 30,			
	2023	2022	Change	% Change
Interest income	$ 100,920	$ 41,143	$ 59,777	145.3 %
Total interest income	$ 100,920	$ 41,143		

Interest income increased by $60 thousand, or 145.3% during the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, primarily due to higher interest rates and interest earning cash balances.

Liquidity and Capital Resources

As of September 30, 2023 and December 31, 2022, we had $2.4 million and $15.0 million, respectively, of cash and cash equivalents.

Our standard repayment terms for accounts receivable are thirty days from the invoice date. As a majority of our accounts receivable is from work performed under government grants, we have not had an uncollectible accounts receivable amount in over 5 years.

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 be sufficient to cover operating cash needs through the twelve months following the date these financials are made available for issuance. 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.

Equity Financings and Option Exercises

As of September 30, 2023, we have raised approximately $90.2 million since our inception from the issuance and sale of convertible preferred shares, net of issuance costs associated with such financings, a Business Combination, proceeds from the Private Placement, and exercises of employee stock options.

On May 9, 2023, we filed a shelf registration statement on Form S-3 (the "Shelf Registration Statement"). Whereby from time to time, we may offer and sell up to an aggregate of $50,000,000 of any combination of Common Stock, Preferred Stock, Debt Securities, Warrants, Rights, and Units, either individually or in combination. We may also offer common stock or preferred stock upon conversion of debt securities, common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon the exercise of warrants. We may also issue units comprised of one or more shares of common stock, shares of preferred stock, debt securities, warrants and/or rights in any combination. The Shelf Registration Statement was declared effective by the SEC on May 17, 2023.

Notes payable

8% Unsecured Convertible Note

Pursuant to the Fourth Amendment to our lease with Sanford Health, we agreed to a period of Abated Rent from October 1, 2022 to September 30, 2023 pertaining to our leased laboratory bay at the Sanford Research Center. In exchange for the Abated Rent, effective as of October 1, 2022, we issued to Sanford Health an 8% unsecured, convertible promissory note.

Pursuant to the 8% Unsecured Convertible Note, we shall pay the sum of approximately $542 thousand plus accrued and unpaid interest thereon on September 31, 2024. Simple interest shall accrue on the outstanding Principal from and after the date of the 8% Unsecured Convertible Note and shall be payable on the Maturity Date. Sanford Health shall have the right, but not the obligation, to convert all or any part of the outstanding Principal of the 8% Unsecured Convertible Note, together with any accrued and unpaid interest thereon to the date of such conversion, into such number of fully paid and non-assessable shares of our common stock, at any time and from time to time, prior to the later of the Maturity Date and the date on which the 8% Unsecured Convertible Note is paid in full, subject to certain restrictions, at a conversion price per share of common stock equal to greater of (x) $1.50 and (y) the price at which the we sells shares of common stock in any bona fide private or public equity financing prior to the Maturity Date.

Insurance Financing

We obtained financing for certain Director & Officer liability insurance policy premiums. The agreement assigns First Insurance Funding 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 is approximately $1.2 million with an annual interest rate of 5.47%. In consideration of the premium payment by Lender to the insurance companies or the Agent or Broker, we unconditionally promise to pay Lender the amount Financed plus interest and other charges permitted under the Agreement. We paid the financing through installment payments with the last payment for the current note being September 22, 2023. We recognized no insurance financing note payable in our condensed financial statements as of September 30, 2023 and recognized approximately $773 thousand of insurance financing note payable in our condensed financial statements as of December 31, 2022.

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

Cash Flows

The following table summarizes our cash flows for the nine months ended September 30, 2023 and 2022:

	Nine Months Ended September 30,	
	2023	2022
Net cash used in operating activities	$ (11,672,688)	$ (21,904,487)
Net cash used in investing activities	(84,840)	(1,972,270)
Net cash used in financing activities	(863,886)	(7,336,073)
Net decrease in cash and cash equivalents	$ (12,621,414)	$ (31,212,830)

Operating Activities

Net cash used by operating activities decreased by $10.2 million in the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, primarily due to a decrease in cash used in operating activities related to change in our operating assets and liabilities of $7.8 million and a decrease in our net loss adjusted for non-cash items of $2.4 million. Y

ear-over-year changes in cash used by operating activities is explained by shifts in the non-cash working capital balances as we continue to advance our lead programs after the JPEO Rapid Response Contract Termination.

Investing Activities

Net cash used by investing activities decreased by $1.9 million in the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, primarily due to a decrease in purchases of equipment. Capital asset purchases completed in 2022 relate substantially to leasehold improvements at the Corporate Headquarters and completion of the clinical manufacturing facility at the Sanford Research Center

Financing Activities

Net cash used by financing activities decreased by $6.5 million in the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022, primarily due to the final settlement of the Forward Purchase Agreement whereby $5.5 million of restricted cash was utilized for a repurchase of 546,658 shares of our common stock in the nine months ended September 30, 2022.

Contractual Obligations and Commitments

We enter into contracts in the normal course of business with third parties, including CROs. These payments are not included in the table above, as the amount and timing of such payments are not known.

As of September 30, 2023, there were no material changes outside of the ordinary course of business to our commitments and contractual obligations.

Income Taxes

The effective income tax rate for the third quarter of 2023 is 0.00%, compared with an effective tax rate of (0.20%) for the year ending December 31, 2022. The prior year tax rate reflects a tax provision on a pre-tax loss.

We continue to record a valuation allowance on our net deferred tax assets. The valuation increased by approximately $4.1 million for the nine months ended September 30, 2023. We have not recognized any reserves for uncertain tax positions.

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 financial statements in accordance with U.S. GAAP. Our preparation of these condensed 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.

While our significant accounting policies are described in more detail in Note 2, *Summary of Significant Accounting Policies*, in our condensed financial statements we believe the following accounting policies to be critical to the judgments and estimates used in the preparation of our condensed financial statements.

Research and development expenses

Costs incurred in connection with research and development activities are expensed as incurred. These include 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 behalf of us, and expenses related to animal care, research-use equipment depreciation, salaries, benefits, and stock-based compensation granted to employees in research and development functions.

We had contracts with multiple CROs 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 we are 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 to us, we adjust our accrual; such changes in estimate may be a material change in our clinical study accrual, which could also materially affect our results of operations.

Revenue Recognition

Our revenue is primarily generated through grants from government and other (non-government) organizations.

Grant revenue is recognized for the period that the research and development services occur, as qualifying expenses are incurred, or conditions of the grants are met. We 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.

Stock-Based Compensation

We recognize 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 board of directors elected to determine the fair value of our common stock based on the closing market price at closing on the date of grant. In determining the fair value of our stock-based awards, we utilize 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, we estimate the probability of achievement of the performance criteria and recognize 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 our condensed statements of operations based on the function to which the related services are provided. We recognize stock-based compensation expense over the expected term.

In addition to considering the results of the independent third-party valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common shares as of each grant date, which may be a date other than the most recent independent third-party valuation date, including:

- the prices at which we most-recently sold preferred shares and the superior rights and preferences of the preferred shares relative to our common shares at the time of each grant;
- the lack of liquidity of our equity as a private company;
- our stage of development and business strategy and the material risks related to our business and industry;
- our financial condition and operating results, including our levels of available capital resources and forecasted results;
- developments in our business, including the achievement of milestones such as entering into partnering agreements;
- the valuation of publicly traded companies in the life sciences, biopharmaceutical and healthcare technology sectors, as well as recently completed mergers and acquisitions of peer companies;
- any external market conditions affecting our industry, and trends within our industry;
- the likelihood of achieving a liquidity event for the holders of our preferred shares and holders of our common shares, such as an initial public offering, or IPO, or a sale of our company, given prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in our industry.

The assumptions underlying these valuations represented management's best estimates, which involved inherent uncertainties and the application of management's judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, the fair value of our common shares and our stock-based compensation expense could be materially different.

See Note 11, *Stock Option Plan*, in our condensed financial statements for information concerning certain specific assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options granted for the three and nine months ended September 30, 2023 and 2022.

Stock-based compensation expense was $0.6 million and $0.6 million, respectively, for the three months ended September 30, 2023 and 2022, and $1.9 million and $2.0 million, respectively, for the nine months ended September 30, 2023 and 2022.

As of September 30, 2023, we had $3.6 million of total unrecognized stock-based compensation cost related to non-vested options, which we expect to recognize in future operating results over a weighted-average period of 3.14 years. Total unrecognized compensation cost related to non-vested stock awards as of September 30, 2023 was approximately $0.6 million and is expected to be recognized within future operating results over a weighted-average period of 3.11 years.

Warrant Liabilities Valuations

Liability Classified Warrants

We are required to periodically estimate the fair value of our Private Placement Warrant liabilities with the assistance of an independent third-party valuation firm. The assumptions underlying these valuations represented our best estimates, which involved inherent uncertainties and the application of significant levels of our judgment. The fair value of our Public Warrant liability is determined by reference to the quoted market price.

The 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 balance sheets as of September 30, 2023 and December 31, 2022. The initial fair value of the warrant liabilities were measured at fair value on 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 statements of operations for the three and nine months ended September 30, 2023 and 2022.

On the Closing Date, we established the fair value of the Private Placement Warrants utilizing both the Black-Scholes Merton formula and a MCS analysis. Specifically, we considered a MCS to derive the implied volatility in the publicly listed price of the Public Warrants. We then considered this implied volatility in selecting the volatility for the application of a Black-Scholes Merton model for the Private Placement Warrants. We 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.

The measurement as of September 30, 2023 and December 31, 2022 for the Private Placement Warrant liability was approximately $15 thousand and $10 thousand, respectively, and the change in fair value of the Private Placement Warrant liability was approximately $6 thousand and $4 thousand, respectively, the three and nine months ended September 30, 2023.

The key inputs into the valuations as of the September 30, 2023 and December 31, 2022 were as follows:

	September 30, 2023	December 31, 2022
Risk-free interest rate	4.79%	4.00%
Expected term remaining (years)	3.06	3.81
Implied volatility	97.0%	82.0%
Closing common stock price on the measurement date	$ 0.63	$ 0.59

Equity Classified Warrants

On December 7, 2022, as a part of our 2022 Private Placement, we issued PIPE Warrants to investors to purchase up to 7,363,377 shares of common stock. The PIPE Warrants, including those purchased by the participating directors of SAB are exercisable beginning six months from the date of issuance at an exercise price equal to $1.08 per share, and are exercisable for five years from the date of issuance. We also issued our placement agent, Brookline Capital Markets, PIPE Placement Agent Warrants to purchase up to an aggregate of 210,913 shares of common stock. The Placement Agent Warrants have an exercise price equal to $1.35 per share and are exercisable six months from the date of issuance and expires five years from the date of issuance.

On March 21, 2023, we entered into a settlement agreement with Ladenburg, effective March 23, 2023. In connection with the 2023 Ladenburg Agreement, on March 24, 2023, we issued to Ladenburg a warrant to purchase up to 300,000 shares of common stock, exercisable for three years from the date of issuance at $0.5424 per share.

We determined the Ladenburg Warrants, PIPE Warrants, and PIPE Placement Agent Warrants met all necessary criteria to be accounted for as equity in accordance with ASC 815-40, *Derivatives and Hedging—Contracts in Entity's Own Equity.* As such, they are presented within additional paid-in capital within our condensed statements of changes in stockholders' equity and condensed balance sheets.

Warrants classified as equity are initially measured at fair value. Subsequent changes in fair value are not recognized as long as the warrants continue to be classified as equity.

The initial fair value of each PIPE Warrant and PIPE Placement Agent Warrant issued was determined using the Black-Scholes option-pricing model. All relevant terms and conditions for the PIPE Warrant and PIPE Placement Agent Warrant are identical with the exception of the exercise prices of $1.08 and $1.35, respectively.

The key inputs into the valuations as of the initial measurement date were as follows:

	Initial Measurement
Risk-free interest rate	3.62 %
Expected term remaining (years)	5.00
Implied volatility	89.0 %
Closing common stock price on the measurement date, less discount for lack of marketability (1)	$ 0.66

(1) As the underlying shares are restricted from sale for a period of 180 days from the date of the 2022 Private Placement, the fair value of the warrants were estimated using the Black-Scholes option pricing model that uses several inputs, including market price of our common shares at the end of each reporting period (a level one input), less a discount for lack of marketability (a level two input). The discount for lack of marketability was estimated upon consideration of volatility and the length of the lock-up period.

Upon initial measurement, the fair value of the PIPE Warrants and PIPE Placement Agent Warrants were determined to be $0.42 and $0.39, respectively, per warrant for aggregate values of approximately $3.1 million and $82 thousand, respectively. In the Private Placement, we recognized the PIPE Warrants and PIPE Placement Agent Warrants on a relative fair value basis with approximately $2.2 million and $58 thousand being allocated to each as a component of additional paid-in capital within our condensed statements of changes in stockholders' equity and condensed balance sheets as of December 31, 2022.

The initial fair value of each Ladenburg Warrant issued has been determined using the Black-Scholes option-pricing model. The key inputs into the valuations as of the 2023 Ladenburg Agreement initial measurement date were as follows:

	Initial Measurement
Risk-free interest rate	3.98 %
Expected term remaining (years)	3.00
Implied volatility	94.0 %
Closing common stock price on the measurement date	$ 0.52

Upon initial measurement, the fair value of each Ladenburg Warrant was determined to be $0.31, per warrant for a total value of approximately $93 thousand. The total fair value of the Ladenburg Warrants was recognized as a non-cash expense and allocated to additional paid-in capital within our condensed statement of changes in stockholders' equity and condensed balance sheet.

See Note 12, *Fair Value Measurements*, in our condensed financial statements for information concerning certain specific assumptions we used in applying the Black-Scholes Merton formula and MCS to determine the estimated fair value of the Private Placement Warrants outstanding as of September 30, 2023.

Common Stock Valuations

Prior to becoming a public company, we were required to periodically estimate the fair value of our common stock with the assistance of an independent third-party valuation firm, as discussed above, when issuing stock options and computing our estimated stock-based compensation expense. The assumptions underlying these valuations represented our best estimates, which involved inherent uncertainties and the application of significant levels of our judgment. In order to determine the fair value of our common stock, we considered, among other items, previous transactions involving the sale of our securities, our business, financial condition and results of operations, economic and industry trends, the market performance of comparable publicly traded companies, and the lack of marketability of our common stock.

We determine the fair value of our common stock based on the closing market price at closing on the date of grant.

Compensation expense related to stock-based transactions is measured and recognized in the financial statements at fair value of our post-merger common stock based on the closing market price at closing on the date of grant. Stock-based compensation expense is measured at the grant date based on the fair value of the equity award and is recognized as expense over the requisite service period, which is generally the vesting period, on the straight-line method. We estimate the fair value of each stock option award on the date of grant using the Black-Scholes option-pricing model. Determining the fair value of stock option awards at the grant date requires judgment, including estimating the expected volatility, expected term, risk-free interest rate, and expected dividends.

Lease Liabilities and Right-of-Use Assets

We are party to certain contractual arrangements for equipment, lab space, and an animal facility, which meet the definition of leases under ASC 842. In accordance with ASC 842, we, as of January 1, 2018 (the date of adoption), recorded right-of-use assets and related lease liabilities for the present value of the lease payments over the lease terms. We utilized the practical expedient regarding lease and non-lease components and have combined such items into a single combined component. Our incremental borrowing rate was used in the calculation of our right-of-use assets and lease liabilities.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 3, *New Accounting Standards*, in our condensed financial statements.

JOBS Act Accounting Election

We qualify as an "emerging growth company" as defined in the JOBS Act. An emerging growth company may take advantage of reduced reporting requirements that are not otherwise applicable to public companies. These provisions include, but are not limited to:

- being permitted to present only two years of audited financial statements and only two years of related Management's Discussion and Analysis of Financial Condition and Results of Operations in this Form 10-Q;
- not being required to comply with the auditor attestation requirements on the effectiveness of our internal controls over financial reporting;
- not being required to comply with any requirement that may be adopted by the PCAOB regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (auditor discussion and analysis);
- reduced disclosure obligations regarding executive compensation arrangements; 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.

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 and nine months ended September 30, 2023 and 2022, respectively. To date, no receivables have been written off.

Interest Rate Risk

As of September 30, 2023 and December 31, 2022, we had a cash and cash equivalents of $2.4 million and $15.0 million, respectively, all of which was maintained in bank accounts and money market funds in the U.S. 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 and, thus, are not exposed to financial risks from exchange rate fluctuations between the U.S. dollar and other currencies.

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 September 30, 2023, our Chief Executive Officer and Chief Financial Officer have concluded that the Company’s disclosure controls and procedures were not effective as of September 30, 2023. Management has concluded that there is a material weakness in the design and operating effectiveness of the Company’s review controls surrounding technical accounting matters and significant and/or unusual transactions.

Plan for Remediation of Material Weakness

We continue to work to strengthen our internal control over financial reporting and are committed to ensuring that such controls are designed and operating effectively. We are implementing process and control improvements to address the above material weakness as follows:

- We have supplemented existing accounting resources with external advisors to assist with performing certain technical accounting activities. We have hired an additional full-time employee with technical accounting expertise and public company experience. Management will continue to supplement existing internal resources as needed. In addition, Management will continue to review the qualifications of our finance organization to ensure our personnel have the appropriate technical and SOX related expertise.
- We have begun the process of implementing a contract management platform that will integrate functions governing the initiation, authorization, and execution of contracts with enhancements for our existing contract review control. This tool will improve the ability of the finance organization to review new and renewed contracts for potential financial reporting implications.

We are committed to continuing to improve our internal control processes related to these matters and will continue to review our financial reporting controls and procedures. As we continue to evaluate and work to improve our internal control over financial reporting, we may take additional measures to address deficiencies or modify certain of the remediation measures described above. The elements of our remediation plan can only be accomplished over time, and we can offer no assurance that these initiatives will ultimately have the intended effects.

Changes in Internal Control Over Financial Reporting

There were no changes, except for the remediation effort described above, in our internal control over financial reporting that occurred during the three months ended September 30, 2023, 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.

The risk factors 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, 2022, are incorporated herein, and supplemented with the following revised or additional risk factors.

We are a clinical-stage biopharmaceutical company and have incurred significant losses since our inception. We realized net loss in the fiscal year ended December 31, 2022 and the interim period through September 30, 2023, we may incur losses for the foreseeable future and may not be able to generate sufficient revenue to maintain profitability.

We are a clinical-stage biopharmaceutical company. We expect to experience variability in revenue and expenses which makes it difficult to evaluate our business and prospects. As such, we have incurred and anticipate that we will continue to incur significant operating losses in the foreseeable future. Our historical losses resulted principally from costs incurred in research and development, preclinical testing, clinical development of product candidates as well as costs incurred for research programs and from general and administrative costs associated with these operations. In the future, we intend to continue to conduct research and development, preclinical testing, clinical trials, and regulatory compliance activities that, together with anticipated general and administrative expenses, will result in incurring further significant losses for the next several years. We expect that our operating expenses will continue to increase significantly, including as we:

- continue the research and development of our clinical- and preclinical-stage product candidates and discovery stage programs, including the clinical trials of SAB-142 and SAB-176;
- advance our preclinical-stage product candidates into clinical development;
- invest in our technology and platform;
- seek to identify, acquire and develop additional product candidates, including through business development efforts to invest in or in-license other technologies or product candidates;
- seek regulatory approvals for any product candidates that successfully complete clinical trials;
- market and sell our solutions to existing and new partners;
- hire additional clinical, quality control, medical, scientific and other technical personnel to support our operations;
- maintain, expand, enforce, protect, and defend our intellectual property portfolio;
- create additional infrastructure to support operations;
- add operational, financial, and management information systems and personnel to support operations as a public company;
- undertake any pre-commercialization activities to establish sales, marketing and distribution capabilities for any product candidates for which we may receive regulatory approval in regions where we choose to commercialize our products on our own or jointly with third parties; and
- experience any delays or encounter issues with any of the above.

Biopharmaceutical product development entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile, gain regulatory approval, secure market access and reimbursement and become commercially viable, and therefore any investment in us is highly speculative. Accordingly, before making an investment in us, you should consider our prospects, factoring in the costs, uncertainties, delays, and difficulties frequently encountered by companies in clinical development, especially clinical-stage biopharmaceutical companies such as ours. Any predictions you make about our future success or viability may not be as accurate as they would otherwise be if we had a longer operating history or a history of successfully developing and commercializing pharmaceutical products. We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives.

Our expenses could increase beyond expectations for a variety of reasons, including as a result of our growth strategy and the increase in the scope and complexity of our operations. In executing our strategy and plans to invest in enhancing and scaling our business, we will need to generate significant additional revenue to achieve and maintain future profitability. We may not be able to generate

sufficient revenue to achieve profitability and our recent and historical growth should not be considered indicative of future performance.

We conduct certain research and development operations through our Australian wholly-owned subsidiary. If we lose our ability to operate in Australia, or our subsidiary is unable to receive the research and development tax credit allowed by Australian regulations or are required to refund any research and development tax credit previously received or reserve for such credit in our financial statements, our business and result of operations could suffer.

We formed a new Australian subsidiary, SAB Australia, to conduct various preclinical and clinical activities for SAB-142 in Australia. Due to the geographical distance and lack of employees currently in Australia, as well as our lack of experience operating in Australia, we may not be able to efficiently or successfully monitor, develop and commercialize our lead products in Australia, including conducting clinical trials. Furthermore, we have no assurance that the results of any clinical trials that we conduct for our product candidates in Australia will be accepted by the FDA or applicable foreign authorities.

In addition, current Australian tax regulations provide for a refundable research and development tax credit equal to 43.5% of qualified expenditures. Although we have previously claimed a refundable research and development tax credit there is a possibility that we may not be able to claim such credit or we might qualify for a lesser credit. If we lose our ability to operate SAB Australia, or if in the future we are ineligible or unable to receive the research and development tax credit or are required to refund any research and development tax credit previously received or have to reserve for such credit in our financial statements, or if the Australian government significantly reduces or eliminates the tax credit, our business and results of operation may be adversely affected.

The sale of the securities registered for resale by the Company and future sales of substantial amounts of our securities in the public market (including the shares of common stock issuable upon conversion of shares of preferred stock), or the perception that such sales may occur, may cause the market price of our securities to decline significantly.

We are obligated to registered for sale up to 344,626,954 shares of common stock by certain selling stockholders, in connection with a private placement of securities consummated in October 2023. The shares of common stock offered for resale by these selling stockholders represent approximately 658.7% of total common stock outstanding as of October 30, 2023. The amount of common stock offered for resale by the selling stockholders exceeds the number of shares of common stock currently outstanding because a significant portion of the shares of common stock offered for resale are not currently outstanding and are issuable upon the conversion of shares of Series A-1 Convertible Preferred Stock or conversion of Series A-1 or Series A-3 Convertible Preferred Stock (collectively the “Preferred Stock”) issuable upon exercise of tranche A warrants, tranche B warrants, and tranche C warrants. The sale of these securities in the public market, or the perception that holders of a large number of securities intend to sell their securities, could reduce the market price of our common stock and public warrants.

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

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.

Not Applicable.

Item 6. Exhibits.

Exhibit Number	Description	Schedule/ Form	File No.	Exhibit	Filing Date
3.1	Certificate of Designation of Preferences, Rights and Limitations of the Series A Convertible Voting Preferred Stock	8-K	001-39871	3.1	October 2, 2023
4.1	Form of Preferred Tranche A Warrant	8-K	001-39871	4.1	October 2, 2023
4.2	Form of Preferred Tranche B Warrant	8-K	001-39871	4.2	October 2, 2023
4.3	Form of Preferred Tranche C Warrant	8-K	001-39871	4.3	October 2, 2023
10.1	Form of Securities Purchase Agreement, dated September 29, 2023 by and among SAB Biotherapeutics, Inc. and the purchasers named therein	8-K	001-39871	10.1	October 2, 2023
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.

¥ 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: November 13, 2023

By: */s/ Eddie J. Sullivan*

Eddie J. Sullivan
Chief Executive Officer
(Principal Executive Officer)

By: */s/ Michael G. King, Jr.*

Michael G. King, Jr.
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, Eddie J. Sullivan, 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 small business issuer 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 small business issuer, 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 small business issuer'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: November 13, 2023

By: */s/ Eddie J. Sullivan*

Eddie J. Sullivan
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, Michael G. King, Jr., 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 small business issuer 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 small business issuer, 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 small business issuer'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: November 13, 2023

By: /s/ *Michael G. King, Jr.*

Michael G. King, Jr.
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 September 30, 2023 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: November 13, 2023

By: */s/ Eddie J. Sullivan*

Eddie J. Sullivan
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 September 30, 2023 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: November 13, 2023

By: /s/ *Michael G. King, Jr.*

Michael G. King, Jr.
Chief Financial Officer
(Principal Financial and Accounting Officer)