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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 10-Q

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

For the quarterly period ended March 31, 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: 001-37350

InVivo Therapeutics Holdings Corp.

(Exact name of registrant as specified in its charter)

Nevada	**36-4528166**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
One Kendall Square, Suite B14402 Cambridge, MA	**02139**
(Address of principal executive offices)	(Zip code)

(617) 863-5500

(Registrant's telephone number, including area code)

N/A

(Former name, former address and former fiscal year, if changed since last report)

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, $0.00001 par value per share	NVIV	The Nasdaq Capital Market

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, a 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 Act). Yes ☐ No ☒

As of May 8, 2023 3,105,446 shares of the registrant's Common Stock, $0.00001 par value, were issued and outstanding.

INVIVO THERAPEUTICS HOLDINGS CORP.
Quarterly Report on Form 10-Q for the Quarter Ended March 31, 2023

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Risk Factors Summary

Our business is subject to a number of risks of which you should be aware before making an investment decision. Below we summarize what we believe are the principal risk factors but these risks are not the only ones we face, and you should carefully review and consider the full discussion of our risk factors in the section titled “Risk Factors”, together with the other information in this Quarterly Report.

- We have been wholly dependent on the success of one product candidate, the Neuro-Spinal Scaffold implant, a program for which we recently announced negative topline data due to the INSPIRE 2.0 Study not achieving its primary endpoints. As we evaluate the full data set of the study, we have stopped all further development activities of the Neuro-Spinal Scaffold and are currently exploring a range of strategic alternatives. These strategic alternatives may include a potential merger or sale of our company, a strategic partnership with one or more parties or the licensing, sale or divestiture of some of our assets or proprietary technologies, among other potential alternatives. We cannot provide any commitment regarding when or if this strategic evaluation process will result in any type of transaction, and there can be no assurance that such activities will result in any agreements or transactions that will enhance stockholder value.

- We will need additional funding before achieving potential profitability. If we are unable to raise capital when needed, we could be forced to delay, reduce, or eliminate our product development programs or commercialization efforts, engage in one or more potential transactions, or cease our operations entirely.

- There is substantial doubt about our ability to continue as a going concern, which may affect our ability to obtain future financing and may require us to curtail or cease our operations.

- We anticipate that we will continue to incur substantial losses for the foreseeable future and may never achieve or maintain profitability.

- If we cannot protect, maintain and, if necessary, enforce our intellectual property rights, our ability to develop and commercialize products will be adversely impacted.

- We will depend upon strategic relationships to develop and manufacture our products. If these relationships are not successful, we may not be able to capitalize on the market potential of these products.

- Our success depends on our ability to retain our management and other key personnel.

- We may face, and in the past have faced, lawsuits, which could divert management’s attention and harm our business.

- The price of our common stock has been and may continue to be volatile, which could lead to losses by investors and costly securities litigation.

PART I — FINANCIAL INFORMATION

Item 1. Financial Statements.

InVivo Therapeutics Holdings Corp.
Consolidated Balance Sheets
(In thousands, except share and per-share data)
(Unaudited)

	As of	
	March 31, 2023	December 31, 2022
ASSETS:		
Current assets:		
Cash and cash equivalents	$ 13,149	$ 16,351
Prepaid expenses	535	97
Other current assets	922	1,153
Total current assets	14,606	17,601
Property, equipment and leasehold improvements, net	152	227
Restricted cash - non-current	150	150
Operating lease right-of-use assets	744	844
Total assets	$ 15,652	$ 18,822
LIABILITIES AND STOCKHOLDERS' EQUITY:		
Current liabilities:		
Accounts payable	$ 642	$ 617
Operating lease liabilities	435	396
Accrued expenses	573	1,407
Total current liabilities	1,650	2,420
Other liabilities	109	103
Operating lease liabilities - non-current	417	553
Total liabilities	2,176	3,076
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock, $0.00001 par value, authorized 1,000,000 at March 31, 2023 and December 31, 2022. No Preferred Stock issued and outstanding at March 31, 2023 and December 31, 2022.	—	—
Common stock, $0.00001 par value, authorized 250,000,000 at March 31, 2023 and December 31, 2022. 3,105,446 and 2,429,446 shares issued and outstanding.	3	3
Additional paid-in capital	264,424	264,362
Accumulated deficit	(250,951)	(248,619)
Total stockholders' equity	13,476	15,746
Total liabilities and stockholders' equity	$ 15,652	$ 18,822

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Consolidated Statements of Operations
(In thousands, except share and per-share data)
(Unaudited)

	Three Months Ended March 31,	
	2023	2022
Operating expenses:		
Research and development	$ 1,381	$ 1,431
General and administrative	1,107	1,234
Total operating expenses	2,488	2,665
Operating loss	(2,488)	(2,665)
Other income:		
Interest income	156	1
Other income	—	9
Interest and other income, net	156	10
Net loss	$ (2,332)	$ (2,655)
Net loss per share, basic and diluted	$ (0.85)	$ (1.94)
Weighted average number of common shares outstanding, basic and diluted	2,735,767	1,370,347

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Consolidated Statements of Changes in Stockholders' Equity
(In thousands, except share and per-share data)
(Unaudited)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
Balance as of December 31, 2022	2,429,446	$ 3	$ 264,362	$ (248,619)	$ 15,746
Share-based compensation expense	—	—	62	—	62
Issuance of common stock upon exercise of warrants	676,000	—	—	—	—
Net loss	—	—	—	(2,332)	(2,332)
Balance as of March 31, 2023	3,105,446	$ 3	$ 264,424	$ (250,951)	$ 13,476

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
Balance as of December 31, 2021	1,370,595	$ 3	$ 256,241	$ (238,129)	$ 18,115
Share-based compensation expense	—	—	56	—	56
Net loss	—	—	—	(2,655)	(2,655)
Balance as of March 31, 2022	1,370,595	$ 3	$ 256,297	$ (240,784)	$ 15,516

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Consolidated Statements of Cash Flows
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2023	2022
Cash flows from operating activities:		
Net loss	$ (2,332)	$ (2,655)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	19	13
Amortization of operating lease right-of-use assets	100	95
Loss on sale of fixed assets	53	—
Share-based compensation expense	62	56
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(207)	(707)
Accounts payable	25	294
Operating lease liability	(96)	(87)
Accrued expenses and other liabilities	(828)	(838)
Net cash used in operating activities	(3,204)	(3,829)
Cash flows from investing activities:		
Purchases of property and equipment	(21)	(26)
Proceeds from the sale of property and equipment	23	—
Net cash provided by / (used in) investing activities	2	(26)
Decrease in cash and cash equivalents and restricted cash	(3,202)	(3,855)
Cash, cash equivalents and restricted cash at beginning of period	16,501	19,181
Cash, cash equivalents and restricted cash at end of period	$ 13,299	$ 15,326

See notes to the unaudited consolidated financial statements.

InVivo Therapeutics Holdings Corp.
Notes to Consolidated Financial Statements for the Quarter Ended March 31, 2023 (Unaudited)

1. NATURE OF OPERATIONS AND GOING CONCERN, BASIS OF PRESENTATION AND RECENT ACCOUNTING PRONOUNCEMENTS

Business

InVivo Therapeutics Holdings Corp., including its subsidiary (the "Company") is a biomaterials and biotechnology company with a focus on the treatment of spinal cord injuries ("SCIs"). The Company's proprietary technologies incorporate intellectual property that is licensed under an exclusive, worldwide license from Boston Children's Hospital ("BCH") and the Massachusetts Institute of Technology ("MIT"), as well as intellectual property that has been developed internally in collaboration with its advisors and partners.

Since its inception, the Company has devoted substantially all of its efforts to business planning, research and development, recruiting management and technical staff, acquiring operating assets, and raising capital. The Company has historically financed its operations primarily through the sale of equity-related securities. The Company has not achieved profitability and may not be able to realize sufficient revenue to achieve or sustain profitability in the future. The Company does not expect to be profitable in the next several years, but rather expects to incur additional operating losses. The Company has limited liquidity and capital resources and must obtain significant additional capital resources in order to sustain its product development efforts, for acquisition of technologies and intellectual property rights, for preclinical and clinical testing of its anticipated products, pursuit of regulatory approvals, acquisition of capital equipment, laboratory and office facilities, establishment of production capabilities, for selling, general and administrative expenses, and other working capital requirements.

In light of the Company's decision to stop future development of the *Neuro-Spinal Scaffold*, and based on a review of the status of our internal programs, resources and capabilities, the Company is exploring a wide range of strategic alternatives that may include a potential merger or sale of the Company, a strategic partnership with one or more parties or the licensing, sale or divestiture of some of our assets or proprietary technologies. There can be no assurance that the Company will be able to enter into such a transaction or transactions on a timely basis, on terms that are favorable to it, or at all. If the Company is unable to successfully conclude a strategic transaction, it may decide to dissolve and liquidate its assets or seek protection under the bankruptcy laws. If the Company decides to dissolve and liquidate its assets or to seek protection under the bankruptcy laws, it is unclear to what extent it will be able to pay its obligations, and, accordingly, it is further unclear whether and to what extent any resources will be available for distributions to stockholders.

Going Concern

The Company's consolidated financial statements as of March 31, 2023 were prepared under the assumption that the Company will continue as a going concern. The going concern assumption contemplates the realization of assets and satisfaction of liabilities in the normal course of business. However, as of March 31, 2023, substantial doubt exists about the Company's ability to continue as a going concern. Since its inception, the Company has suffered recurring losses and negative cash flows from operations and will need additional funding to continue as a going concern. As of March 31, 2023, the Company had unrestricted cash and cash equivalents of $13.1 million, working capital of $13.0 million and recorded a net loss of $2.3 million during the three months ended March 31, 2023. The Company will require additional liquidity to continue operations beyond the next 9 months.

The Company is evaluating strategies to obtain the required additional funding for future operations. These strategies may include but are not limited to equity offerings, debt financings, other third-party funding, marketing and distribution arrangements, and other collaborations, strategic alliances, and licensing arrangements. However, given a variety of external factors including the impact of the recent economic downturn in the U.S. and global financial markets, the Company may be unable to access further equity or debt financing when needed. Lack of necessary funds may require the Company to, among other things, delay, scale back or eliminate some or all of its research and product development programs, and capital expenditures or to license its potential products or technologies to third parties. The Company may alternatively engage in cost-cutting measures in an attempt to extend its cash resources as long as possible. As such, there can be no assurance that the Company will be able to

obtain additional liquidity when needed or under acceptable terms, if at all. The Company believes that it can be successful in obtaining additional capital; however, no assurance can be provided that it will be able to do so. There is no assurance, moreover, that any funds raised will be sufficient to enable the Company to attain profitable operations or continue as a going concern.

The Company's consolidated financial statements as of March 31, 2023, do not include any adjustments to the carrying amounts and classification of assets, liabilities, and reported expenses that may be necessary if the Company were unable to continue as a going concern. If the Company is unable to raise additional capital and is therefore unable to continue as a going concern, it may have to liquidate its assets and may receive less than the value at which those assets are carried on its consolidated financial statements, and it is likely that investors will lose all or part of their investment.

Reverse Stock Split

On April 26, 2022, the Company effected a reverse stock split of its common stock, par value $0.00001 per share, at a ratio of 1-for-25 (the "2022 Reverse Stock Split"). As a result of the 2022 Reverse Stock Split, (i) every 25 shares of the issued and outstanding common stock were automatically converted into one newly issued and outstanding share of common stock, without any change in the par value per share; (ii) the number of shares of common stock into which each outstanding warrant or option to purchase common stock is exercisable was proportionally decreased, and (iii) the number of authorized shares of common stock outstanding was proportionally decreased. Shares of common stock underlying outstanding stock options and other equity instruments convertible into common stock were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities.

The 2022 Reverse Stock Split became effective at 5:00 pm New York time on April 26, 2022, with the common stock trading on a post-split basis under the Company's existing trading symbol, "NVIV," at the market open on April 27, 2022. Fractional shares resulting from the 2022 Reverse Stock Split were rounded up to the nearest whole share, and all shares of common stock (including fractions thereof) issuable upon the 2022 Reverse Stock Split to a given stockholder were aggregated for the purpose of determining whether the 2022 Reverse Stock Split would result in the issuance of a fractional share. Pursuant to Section 78.209 of the Nevada Revised Statutes, the Company's Board of Directors was able take action to effect the 2022 Reverse Stock Split by filing a Certificate of Change with the Secretary of State of the State of Nevada without the consent of the Company's stockholders.

All of the Company's historical share and per share information related to issued and outstanding common stock and outstanding options and warrants exercisable for common stock in these consolidated financial statements have been adjusted, on a retroactive basis, to reflect the 2022 Reverse Stock Split.

Basis of Presentation

The accompanying unaudited consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States ("U.S. GAAP") consistent with those applied in, and should be read in conjunction with, the Company's audited consolidated financial statements and related footnotes for the year ended December 31, 2022 included in the Company's Annual Report on Form 10-K as filed with the United States Securities and Exchange Commission ("SEC") on March 1, 2023. The unaudited consolidated financial statements reflect all adjustments, consisting only of normal recurring adjustments, which are, in the opinion of management, necessary for a fair presentation of the Company's financial position as of March 31, 2023 and its results of operations and cash flows for the interim periods presented, and are not necessarily indicative of results for subsequent interim periods or for the full year. The interim consolidated financial statements do not include all of the information and footnotes required by U.S. GAAP for complete financial statements, as allowed by the relevant SEC rules and regulations; however, the Company believes that its disclosures are adequate to ensure that the information presented is not misleading.

Certain reclassifications have been made to the prior year financial statements to conform to the presentation used in the current year. In the current year the Company reclassified certain current accrued expenses to Other

liabilities on the Consolidated Balance Sheets. These reclassifications did not have an impact on total assets or total liabilities of the Consolidated Balance Sheets or cash flows as previously reported.

2. CASH AND CASH EQUIVALENTS

The Company considers only those investments that are highly liquid, readily convertible to cash, and that mature within three months from date of purchase to be cash equivalents. From time to time, the Company may have cash balances in financial institutions in excess of insurance limits. The Company has not experienced any losses related to these balances. Management believes it is not exposed to significant credit risk.

Cash and cash equivalents consisted of the following:

(In thousands)	March 31, 2023	December 31, 2022
Cash	$ 336	$ 55
Money market funds	12,813	16,296
Total cash and cash equivalents	$ 13,149	$ 16,351

The following table provides a reconciliation of cash, cash equivalents, and restricted cash within the statement of financial position that sum to the total of the same such amounts shown in the statement of cash flows.

(In thousands)	March 31, 2023	December 31, 2022
Cash and cash equivalents	$ 13,149	$ 16,351
Restricted cash included in other non-current assets (Note 3)	150	150
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$ 13,299	$ 16,501

3. RESTRICTED CASH

Restricted cash at each of March 31, 2023 and December 31, 2022 was $150 thousand. Restricted cash as of March 31, 2023 and December 31, 2022 included a $50 thousand security deposit related to the Company's credit card account and a $100 thousand standby letter of credit in favor of a landlord (see Note 5).

4. FAIR VALUES OF ASSETS AND LIABILITIES

The Company groups its assets and liabilities generally measured at fair value into three levels based on the markets in which the assets and liabilities are traded and the reliability of the assumptions used to determine fair value.

Level 1 — Valuation is based on quoted prices in active markets for identical assets or liabilities. Level 1 assets and liabilities generally include debt and equity securities that are traded in an active exchange market. Valuations are obtained from readily available pricing sources for market transactions involving identical assets or liabilities.

Level 2 — Valuation is based on observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 — Valuation is based on unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques, as

well as instruments for which the determination of fair value requires significant management judgment or estimation.

Assets and liabilities measured at fair value on a recurring basis are summarized below:

	As of March 31, 2023			
(In thousands)	Level 1	Level 2	Level 3	Fair Value
Cash equivalents	$ 12,813	$ —	$ —	$ 12,813

	As of December 31, 2022			
(In thousands)	Level 1	Level 2	Level 3	Fair Value
Cash equivalents	$ 16,296	$ —	$ —	$ 16,296

During the three months ended March 31, 2023 and 2022, there were no transfers between levels. The fair value of the Company's cash equivalents, consisting of a money market fund, is based on quoted market prices in active markets with no valuation adjustment.

The Company believes the carrying amounts of its prepaid expenses and other current assets, restricted cash, accounts payable and accrued expenses approximate their fair value due to the short-term nature of these amounts.

5. COMMITMENTS AND CONTINGENCIES

Operating Leases

The Company leases 5,104 square feet of space in Cambridge, Massachusetts, which is used primarily for corporate, manufacturing, and research and development functions (the "Cambridge Lease"). The lease commenced in June 2021, was amended in November 2021, and expires on December 31, 2024. The Cambridge Lease contains rent escalation clauses. In connection with the Cambridge Lease, a standby letter of credit was established for $100 thousand. Under the Cambridge Lease, the Company will be required to pay its proportionate share of certain operating costs and property taxes applicable to the leased premises in excess of new base year amounts. These costs are considered to be variable lease payments and are not included in the determination of the lease's right-of-use asset or lease liability.

On November 23, 2021, the Company amended the Cambridge Lease to extend the term through December 31, 2024. No other terms within the Cambridge Lease were amended. The amendment of the Cambridge Lease was determined to be a lease modification that qualified as a change of accounting on the existing lease and not a separate contract. As such, the right-of-use assets and operating lease liabilities were remeasured using an incremental borrowing rate at the date of modification of 5.97%, which resulted in an increase of $486 thousand in both the right-of-use asset and operating lease liabilities.

The Company identified and assessed the following significant assumptions in recognizing its right-of-use assets and corresponding lease liabilities:

- As the Cambridge Lease does not provide an implicit rate, the Company estimated the incremental borrowing rate in calculating the present value of the lease payments.
- Since the Company elected to account for each lease component and its associated non-lease components as a single combined component, all contract consideration was allocated to the combined lease component.
- The expected lease terms include noncancelable lease periods.

The elements of lease expense are as follows:

Lease cost (In thousands)	Three Months Ended March 31, 2023	2022
Operating lease cost	$ 113	$ 113
Short-term lease cost	5	—
Variable lease cost	45	65
Total lease cost	$ 163	$ 178

Other information (In thousands)		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from short term leases	$ 5	$ —
Operating cash flows from operating leases	109	106
Total cash paid for leases	$ 114	$ 106
Weighted-average remaining lease term - operating leases	1.76 Years	2.75 Years
Weighted-average discount rate - operating leases	6.0%	6.0%

Maturities of the lease liability due under the Cambridge Lease as of March 31, 2023 are as follows:

Leases (In thousands)	As of March 31, 2023
2023 (excluding the three months ended March 31, 2023)	$ 330
2024	568
Total lease payments	898
Less: imputed interest	(46)
Present value of lease liabilities	$ 852

Right-of-use lease assets and lease liabilities are reported in the Company's consolidated balance sheets as follows:

Leases (In thousands)	Classification	March 31, 2023	December 31, 2022
Assets			
Lease asset, net	Operating	$ 744	$ 844
Total lease assets		$ 744	$ 844
Liabilities			
Current	Operating	$ 435	$ 396
Non-current	Operating	417	553
Total lease liabilities		$ 852	$ 949

Clinical Trial Commitments

The Company has engaged and executed contracts with contract research organizations ("CROs") to assist with the administration of its ongoing INSPIRE 1.0 and INSPIRE 2.0 clinical trials. As of March 31, 2023, approximately $3.7 million is expected to be paid on these contracts.

6. FIXED ASSETS

Property, equipment, and leasehold improvements, net consisted of the following:

(In thousands)	March 31, 2023	December 31, 2022
Computer software	$ 7	$ 7
Computer hardware	67	67
Leasehold improvements	66	66
Research and lab equipment	498	723
Office equipment	9	—
Property and equipment	647	863
Less accumulated depreciation	(495)	(636)
Property and equipment, net	$ 152	$ 227

Depreciation expense for the three months ended March 31, 2023 and 2022 was $19 thousand and $13 thousand, respectively. Maintenance and repairs are charged to expense as incurred and any additions or improvements are capitalized.

7. ACCRUED EXPENSES

Accrued expenses consisted of the following:

(In thousands)	March 31, 2023	December 31, 2022
Compensation	$ 126	$ 852
Clinical	262	385
Legal	41	—
Other accrued expenses	144	170
Total accrued expenses	$ 573	$ 1,407

8. EMPLOYEE BENEFIT PLAN

In November 2006, the Company adopted a 401(k) plan (the “401k Plan”) covering all employees. Employees must be 21 years of age in order to participate in the 401k Plan. Under the 401k Plan, the Company has the option to make matching contributions. During the three months ended March 31, 2023 and 2022 the Company contributed $23 thousand and $24 thousand, respectively, in cash as a matching contribution to employee 401(k) accounts which is included in the accrued expenses balances on the balance sheet.

9. STOCKHOLDERS EQUITY

Preferred Stock

As of March 31, 2023, the Company has 1,000,000 authorized shares of undesignated preferred stock, $0.00001 par value per share, the rights, preferences and privileges of which may be designated from time to time by our board of directors. No shares of preferred stock have been issued or are outstanding.

Common Stock

The Company has authorized 250,000,000 shares of common stock, $0.00001 par value per share, as of March 31, 2023 and December 31, 2022, respectively, of which 3,105,446 and 2,429,446, shares were issued and outstanding as of March 31, 2023 and December 31, 2022 respectively.

In October 2022, the Company closed a registered offering of shares of its common stock and pre-funded warrants to purchase common stock (the “October 2022 Registered Direct Offering”) and a concurrent private placement of

pre-funded warrants and preferred investment options (the “October 2022 Private Placement”), with an institutional investor (together, the “October 2022 Financing”). In the October 2022 Registered Direct Offering, the Company issued (i) an aggregate of 154,000 common shares (“Shares”); and (ii) 369,810 pre-funded warrants (the “October 2022 Pre-Funded Warrants”). In the concurrent October 2022 Private Placement, the Company issued additional October 2022 Pre-Funded Warrants to purchase an aggregate of 1,190,476 shares of its common stock, and (ii) Preferred Investment Options to purchase an aggregate of 1,714,286 shares of its common stock (the “October 2022 Preferred Investment Options”). The purchase price of each Share and associated October 2022 Preferred Investment Option sold in the October 2022 Registered Direct Offering was $5.25 and the purchase price of each October 2022 Pre-Funded Warrant and associated October 2022 Preferred Investment Option sold in each of the October 2022 Registered Direct Offering and October 2022 Private Placement was $5.2499.
In connection with the October 2022 Financing, the Company issued to designees of H.C. Wainwright & Co., LLC (“Wainwright”), the placement agent for the October 2022 Financing, Preferred Investment Options to purchase an aggregate of 111,429 shares of its common stock (the “October 2022 Placement Agent Warrants”). The net proceeds to the Company after deducting Wainwright's placement agent fees and other offering expenses payable by the Company, were approximately $8.0 million. The Company assessed whether the October 2022 Pre-Funded Warrants, October 2022 Placement Agent Warrants and the October 2022 Preferred Investment Options required accounting as derivatives and determined that they were (1) indexed to the Company’s own stock and (2) classified in stockholders’ equity in accordance with Accounting Standards Codification Topic 815, Derivatives and Hedging. As such, the Company concluded that the October 2022 Pre-Funded Warrants, October 2022 Placement Agent Warrants and the October 2022 Preferred Investment Options meet the scope exception for determining whether the instruments require accounting as derivatives and accordingly are classified in stockholders’ equity. The fair value of the October 2022 Placement Agent Warrants was estimated at $0.3 million using a Black-Scholes model with the following assumptions: expected volatility of 129.96%, risk free interest rate of 4.14%, expected life of five years and no dividends. The fair value of the October 2022 Preferred Investment Options was estimated at $4.9 million using a Black-Scholes model with the following assumptions: expected volatility of 128.87%, risk free interest rate of 4.12%, expected life of five and a half years and no dividends. The October 2022 Pre-Funded Warrants had an intrinsic value of approximately $8.2 million. During the three months ended March 31, 2023, the Company issued an aggregate of 676,000 shares of common stock upon the exercise of the October 2022 Pre-Funded Warrants for an immaterial amount, as they were substantially pre-funded.

Concurrent with the October 2022 Financing, the Company modified certain outstanding warrants, consisting of 29,091 Series A Warrants issued in March 2020, 19,048 Series C Warrants issued in April 2020 and 32,000 Series A Warrants issued in October 2020 (collectively the “Existing Warrants”) held by the institutional investor that participated in the October 2022 Financing to lower the exercise price of these warrants to $5.05 and extend the term through April 2028. The change in the term and exercise price of the Existing Warrants was accounted for as modification of an equity instrument. The Company remeasured the Existing Warrants Fair Value both immediately before and after the modification and the remeasurement resulted in an incremental fair value of $0.1 million. As the modification was executed in an effort to induce the investor to participate in the October 2022 Registered Direct Offering and concurrent October 2022 Private Placement, the incremental fair value was accounted for as an issuance cost.

During the three months ended March 31, 2023 and 2022, there was no exercise activity related to any warrants that were issued in 2018, 2019 and 2020.

10. STOCK-BASED COMPENSATION

In October 2010, the Company’s Board of Directors adopted, and the Company’s shareholders subsequently approved, the 2010 Equity Incentive Plan (as subsequently amended, the “2010 Plan”). The 2010 Plan provided for grants of incentive stock options to employees, and nonqualified stock options and restricted common stock to employees, consultants, and non-employee directors of the Company.

In April 2015, the Company’s Board of Directors adopted, and the Company’s shareholders subsequently approved, the 2015 Equity Incentive Plan (the “2015 Plan”). The 2015 Plan provides for grants of incentive stock options to employees, and nonqualified stock options, restricted common stock, restricted stock units (“RSUs”), and stock appreciation rights to employees, consultants, and non-employee directors of the Company.

As of March 31, 2023, the total number of shares available for issuance under the 2015 Plan was 792,797 shares.

Options issued under the 2010 Plan, and 2015 Plan (collectively, the "Plans") are exercisable for up to 10 years from the date of issuance.

Stock-based compensation

The following table summarizes stock-based compensation expense by financial statement line item in the Company's condensed consolidated statements of operation for each of the three months ended March 31, 2023 and 2022:

	Three Months Ended March 31,	
(In thousands)	2023	2022
Research and development	$ 1	$ 6
General and administrative	61	50
Total	$ 62	$ 56

The fair value of each option award is estimated on the date of grant using the Black-Scholes option pricing model, which uses the following assumptions; (i) Risk-free interest rate, (ii) Expected dividend yield, (iii) Expected term and (iv) Expected volatility. The Company uses historical data, as well as subsequent events occurring prior to the issuance of the financial statements, to estimate option exercises within the valuation model. The expected term of options granted under the Plans, all of which qualify as "plain vanilla," is based on the average of the contractual term (10 years) and the vesting period (generally, 48 months). For non-employee options, the expected term is the contractual term. The risk-free rate is based on the yield of a U.S. Treasury security with a term consistent with the option. The impact of forfeitures on compensation expense is recorded as they occur.

The Company grants RSUs and restricted stock awards ("RSAs"), collectively referred to as Restricted Securities under the 2015 Equity Incentive Plan. These Restricted Securities generally vest over a three-year period, contingent on the recipient's continued employment. Prior to vesting, all RSAs have the right to vote and receive dividends under the 2015 Equity Incentive Plan; however, the Company's form of Restricted Stock Agreement provides that the payment of dividends on unvested RSAs shall be deferred until such time as the shares vest. The grant date fair value of these awards is based on the fair market value of our common stock on the date of grant.

The Company granted 1,300 options during the three months ended March 31, 2023 all of which were forfeited in the first quarter of the current fiscal year.

Stock options

The following table summarizes the stock option activity for the three months ended March 31, 2023:

Options	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term in Years	Aggregate Intrinsic Value
Outstanding at December 31, 2022	136,568	$ 36.46	9.72	$ —
Granted	1,300	$ 2.30		
Cancelled/Forfeited	(5,400)	$ 2.45		
Outstanding as of March 31, 2023	132,468	$ 37.51	9.46	$ —
Vested and Exercisable as of March 31, 2023	13,368	$ 349.39	7.93	$ —
Vested and expected to vest as of March 31, 2023	132,468	$ 37.51	9.46	$ —

The total fair value of options that vested in the three months ended March 31, 2023 and 2022 was $118 thousand and $239 thousand, respectively. During the three months ended March 31, 2023 and 2022, the Company recorded

stock-based compensation expense of $62 thousand and $48 thousand, respectively, related to stock options. As of March 31, 2023, total unrecognized compensation expense related to non-vested share-based option compensation arrangements amounted to $206 thousand and is estimated to be recognized over a period of 1.33 years.

11. WARRANTS

The following table presents information about warrants to purchase common stock issued and outstanding as of March 31, 2023:

Year Issued	Defined Name	Classification	Number of Warrants	Exercise Price as of March 31, 2023	Date of Expiration
2018	2018 Series A Warrants	Equity	8,483	$ 174.53	6/25/2023
2019	2019 Placement Agent Warrants	Equity	610	$ 112.50	11/21/2024
2020	March 2020 Series A Warrants	Equity	72,738	$ 68.75	3/10/2025
2020	Amended March 2020 Series A Warrants	Equity	29,091	$ 5.05	4/11/2028
2020	March 2020 Placement Agent Warrants	Equity	6,620	$ 85.9400	3/5/2025
2020	March 2020 Series B Warrants	Equity	510	$ 0.00025	Until Fully Exercised
2020	April 2020 Series C Warrants	Equity	48,163	$ 40.50	10/17/2025
2020	Amended April 2020 Series C Warrants	Equity	19,048	$ 5.05	4/11/2028
2020	April 2020 Placement Agent Warrants	Equity	4,461	$ 54.6900	4/15/2025
2020	October 2020 Placement Agent Warrants	Equity	48,264	$ 25.00	10/22/2025
2020	October 2020 Series A Warrants	Equity	293,174	$ 20.00	10/27/2025
2020	Amended October 2020 Series A Warrants	Equity	32,000	$ 5.05	4/11/2028
2022	October 2022 Preferred Investment Options	Equity	1,714,286	$ 5.05	4/11/2028
2022	October 2022 Placement Agent Warrants	Equity	111,429	$ 6.56	10/7/2027
Total			2,388,877		
Weighted average exercise price				$ 10.96	
Weighted average life in years					4.44

12. NET LOSS PER COMMON SHARE

Basic and diluted net loss per share of common stock has been computed by dividing net loss by the weighted average number of shares outstanding during the period. Diluted net loss per share of common stock is computed by dividing net income by the weighted average number of shares outstanding plus the dilutive effect, if any, of outstanding stock options, warrants and convertible securities. In a net loss period, options, warrants, unvested Restricted Securities and convertible securities are anti-dilutive and, therefore, excluded from diluted loss per share calculations.

For the three months ended March 31, 2023 and 2022 the following potentially dilutive securities were not included in the computation of net loss per share because the effect would be anti-dilutive:

	March 31,	
	2023	2022
Warrants	2,388,877	563,162
Stock options	132,468	14,582
Unvested RSAs	—	254
Total potentially dilutive securities	2,521,345	577,998

13. INCOME TAXES

The Company did not record a federal or state income tax provision or benefit for each of the three months ended March 31, 2023 and 2022 due to the expected loss before income taxes to be incurred for the years ended December 31, 2023 and 2022, as well as the Company’s continued maintenance of a full valuation allowance against its net deferred tax assets.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

The following management's discussion and analysis should be read in conjunction with the unaudited consolidated financial statements included elsewhere in this Quarterly Report and with our historical consolidated financial statements, and the related notes thereto, included in our Annual Report on Form 10-K for the year ended December 31, 2022 (the "2022 Annual Report"). The management's discussion and analysis contains forward-looking statements within the meaning of the safe harbor provisions under Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements include statements made regarding our commercialization strategy, future operations, cash requirements and liquidity, capital requirements, and other statements on our business plans and strategy, financial position, and market trends. In some cases, you can identify forward-looking statements by terms such as "may," "might," "will," "should," "believe," "plan," "intend," "anticipate," "target," "estimate," "expect," and other similar expressions. These forward-looking statements are subject to risks and uncertainties that could cause actual results or events to differ materially from those expressed or implied by the forward-looking statements in this Quarterly Report, including factors such as our ability to raise substantial additional capital to finance our planned operations and to continue as a going concern; our ability to execute our strategy and business plan; our ability to identify and execute on potential strategic alternatives that we are currently exploring; our ability to retain management and other key personnel; and other factors detailed under "Risk Factors" in Part II, Item 1A of this Quarterly Report. These forward-looking statements speak only as of the date hereof. We do not undertake any obligation to update forward-looking statements to reflect events or circumstances occurring after the date of this Quarterly Report, except as required by law.

The discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which we have prepared in accordance with U.S. generally accepted accounting principles. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, as well as the reported revenues and expenses during the reporting periods. On an ongoing basis, we evaluate such estimates and judgments, including those described in greater detail below. 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 may differ from these estimates under different assumptions or conditions.

All share amounts presented in this Item 2 give effect to the 1-for-25 reverse stock split of our outstanding shares of common stock, par value $0.00001 per share ("common stock"), that occurred on April 26, 2022.

Overview

We are a research and clinical-stage biomaterials and biotechnology company with a focus on treatment of spinal cord injuries. We have been developing our *Neuro-Spinal Scaffold* implant, which is an investigational bioresorbable polymer scaffold that is designed for implantation at the site of injury within a spinal cord. In March 2023, we announced that our INSPIRE 2.0 Study of our *Neuro-Spinal Scaffold* had failed to meet its primary endpoint. We are continuing to conduct a full assessment of the study data and subjects in the INSPIRE 2.0 Study continue to be assessed in accordance with the clinical trial protocol. However, we have stopped other activities related to the development of the *Neuro-Spinal Scaffold* and do not plan future development of the *Neuro-Spinal Scaffold.* We are currently exploring a range of strategic alternatives that may include a potential merger or sale of the Company, a strategic partnership with one or more parties or the licensing, sale or divestiture of some of our assets or proprietary technologies, among other potential alternatives. There can be no assurance that we will be able to enter into such a transaction or transactions on a timely basis, on terms that are favorable to us, or at all. If we are unable to successfully conclude a strategic transaction, we may decide to dissolve and liquidate our assets or seek protection under the bankruptcy laws. If we decide to dissolve and liquidate our assets or to seek protection under the bankruptcy laws, it is unclear to what extent we will be able to pay our obligations, and, accordingly, it is further unclear whether and to what extent any resources will be available for distributions to stockholders.

Critical Accounting Policies and Estimates

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements requires management to make estimates and assumptions and, in connection therewith, adopt certain accounting policies that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period.

On an ongoing basis, we evaluate our estimates and judgments for all assets and liabilities and stock-based compensation expense. We base our estimates and judgments on historical experience, current economic and industry conditions, and on various other factors that we believe to be reasonable under the circumstances. Such factors form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. There have been no changes in our critical accounting policies and estimates from the disclosure provided in our 2022 Annual Report.

We believe that the consolidated financial statements accurately reflect our best estimate of the results of operations, financial position, and cash flows for the periods presented.

Results of Operations

Comparison of the Three Months Ended March 31, 2023 and 2022

Research and Development Expenses

Research and development expenses consisted primarily of expenses related to contract research organizations and clinical sites, professional services, and payroll. Research and development expenses for the three months ended March 31, 2023 were $1.4 million, a decrease of $0.1 million compared to the three months ended March 31, 2022. The decrease in research and development expenses for the three months ended March 31, 2023 is primarily due to a decrease in clinical trial costs of $0.2 million and a decrease of $0.1 million in other net immaterial accounts. These decreases were offset by an increase in manufacturing consulting costs of $0.2 million.

General and Administrative Expenses

General and administrative expenses consisted primarily of payroll, rent, and professional services. General and administrative expenses for the three months ended March 31, 2023 were $1.1 million, a decrease of $0.1 million compared to the three months ended March 31, 2022. The decrease in general and administrative expenses for the three months ended March 31, 2023 is primarily due to a decrease in compensation related expenses.

Other Income and Expense, net

Other income for the three months ended March 31, 2023, was comprised of interest income of $156 thousand. Other income for the three months ended March 31, 2022 was immaterial.

Liquidity, Capital Resources and Going Concern

Liquidity is a measure of our ability to meet potential cash requirements, including planned capital expenditures. Since inception, we have devoted substantially all of our efforts to business planning, research and development, recruiting management and technical staff, acquiring operating assets, and raising capital. We have historically financed our operations primarily through the sale of equity-related securities. We have not achieved profitability and may not be able to realize sufficient revenue to achieve or sustain profitability in the future. We do not expect to be profitable in the next several years, but rather expect to incur additional operating losses.

As of March 31, 2023, we had approximately $13.0 million in working capital, our accumulated deficit was $251.0 million, we had total assets of $15.7 million, total liabilities of $2.2 million, and total stockholders' equity of

$13.5 million. During the three months ended March 31, 2023, we recorded a net loss of $2.3 million. We have not achieved profitability and may not be able to realize sufficient revenue to achieve or sustain profitability in the future.

In light of our decision to stop future development of the *Neuro-Spinal Scaffold*, and based on a review of the status of our internal programs, resources and capabilities, we are exploring a wide range of strategic alternatives that may include a potential merger or sale of the Company, a strategic partnership with one or more parties or the licensing, sale or divestiture of some of our assets or proprietary technologies. There can be no assurance that we will be able to enter into such a transaction or transactions on a timely basis, on terms that are favorable to us, or at all. If we are unable to successfully conclude a strategic transaction, we may decide to dissolve and liquidate our assets or seek protection under the bankruptcy laws. If we decide to dissolve and liquidate our assets or to seek protection under the bankruptcy laws, it is unclear to what extent we will be able to pay our obligations, and, accordingly, it is further unclear whether and to what extent any resources will be available for distributions to stockholders.

We have limited liquidity and capital resources and must obtain significant additional capital resources in order to fund our operations. We may pursue various other dilutive and non-dilutive funding alternatives depending upon our strategic path forward. Funding may not be available when needed, at all, or on terms acceptable to us. We anticipate that we will continue to incur significant expenses and operating losses as we implement our review of strategic options, and we may incur increased expenses if and to the extent we are unable to stop activities or eliminate expenses related to the *Neuro-Spinal Scaffold* program on our anticipated timelines or we incur unexpected material expenses during this process; need to respond to any investigations or inquiries, or defend against any litigation, that may result from the announcement of the results of our INSPIRE 2.0 Study; are unable to successfully complete our exploration and evaluation of strategic options and implement any such options; or are unable to limit our ongoing operating costs as we work to explore and evaluate strategic options.

Our consolidated financial statements as of March 31, 2023 were prepared under the assumption that we will continue as a going concern. The going concern assumption contemplates the realization of assets and satisfaction of liabilities in the normal course of business. However, substantial doubt exists about our ability to continue as a going concern exists and we will require additional liquidity to continue operations beyond the next 9 months.

Our consolidated financial statements as of March 31, 2023, do not include any adjustments to the carrying amounts and classification of assets, liabilities, and reported expenses that may be necessary if we were unable to continue as a going concern. If we are unable to continue as a going concern, we may have to liquidate its assets and may receive less than the value at which those assets are carried on our financial statements, and it is likely that investors will lose all or part of their investment.

Cashflows

Net cash used in operating activities for the three months ended March 31, 2023, consisted of net loss of $2.3 million, non-cash items of $0.2 million and cash used by working capital of $1.1 million. Adjustments for non-cash items consisted primarily of $0.1 million in amortization of operating lease right-of-use assets and $0.1 million in stock-based compensation expense. The change in cash from working capital included a $0.8 million decrease in accrued expenses, and a $0.1 million decrease in the operating lease liability. These changes were offset by a $0.2 million increase in prepaid expenses and other assets.

Net cash used in operating activities for the three months ended March 31, 2022 consisted of net loss of $2.7 million, non-cash items of $0.2 million and cash used by working capital of $1.3 million. The change in cash from working capital included a $0.8 million decrease in accrued expenses, a $0.7 million increase in prepaid expenses and other assets and a $0.1 million decrease in the operating lease liability. These changes were offset by a $0.3 million increase in accounts payable.

Net cash provided by investing activities for the three months ended March 31, 2023 was immaterial. Net cash used in investing activities for the three months ended March 31, 2022 was $26 thousand related to the purchase of manufacturing and lab equipment.

The Company did not generate or use cash in financing activities during either of the three months ended March 31, 2023 and 2022.

Inflation and Changing Prices

We do not believe that inflation has had, or will have, a material impact on our operating costs and earnings.

Material Cash Requirements from Contractual Obligations

Leases

As of March 31, 2023, we reported current and long-term operating lease liabilities of $0.4 million and $0.4 million, respectively. These balances represent our contractual obligation to make future payments on our Cambridge Lease, discounted to reflect our cost of borrowing. In the event that we were to vacate the Cambridge facility, we may be obliged to continue making payments under the Cambridge Lease (as described in Note 5 in the Notes to Consolidated Financial Statements).

Clinical Trial Commitments

We have engaged and executed contracts with contract research organizations to assist with the administration of our ongoing INSPIRE 1.0 and INSPIRE 2.0 clinical trials. As of March 31, 2023, approximately $3.7 million remained to be paid on these contracts.

See Note 5, “Commitments and Contingencies,” in the Notes to Consolidated Financial Statements for information regarding our commitments.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

As a “smaller reporting company” as defined by Item 10 of Regulation S-K, we are not required to provide information required by this item.

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, evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2023. 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 rules and forms promulgated by the Securities and Exchange Commission. 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 of the Company’s disclosure controls and procedures as of March 31, 2023, the Company’s chief executive officer and chief financial officer concluded that, as of such date, the Company’s disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the quarter ended March 31, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1A. Risk Factors.

Certain factors may have a material adverse effect on our business, financial condition, and results of operations. You should consider carefully the risks and uncertainties described below, in addition to other information contained in this Quarterly Report on Form 10-Q, including our consolidated financial statements and related notes. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business. If any of the following risks actually occurs, our business, financial condition, results of operations, and future prospects could be materially and adversely affected.

Risks Related to Our Business

Our business has been entirely dependent on the success of our Neuro-Spinal implant as a potential treatment for spinal cord injuries, a program for which we recently stopped all further development activities due to the fact that the INSPIRE 2.0 Study did not meet its primary endpoints.

In March 2023, we announced that topline results from our INSPIRE 2.0 Study, which was designed to evaluate the safety and probable benefit of our investigational *Neuro-Spinal Scaffold* in development for patients with acute spinal cord injuries, did not meet the study's primary endpoint. We are continuing to conduct a full assessment of the study data and subjects in the INSPIRE 2.0 Study continue to be assessed in accordance with the clinical trial protocol. However, we have stopped other activities related to the development of the *Neuro-Spinal Scaffold* and do not plan future development of the *Neuro-Spinal Scaffold.* We are currently exploring a range of strategic alternatives. These strategic alternatives may include a potential merger or sale of the Company, a strategic partnership with one or more parties or the licensing, sale or divestiture of some of our assets or proprietary technologies, among other potential alternatives. We do not have a defined timeline for the exploration and evaluation of strategic options and cannot confirm that the process will result in any strategic option being announced or consummated. We cannot provide any commitment regarding when or if this strategic evaluation process will result in any type of transaction, and there can be no assurance that such activities will result in any agreements or transactions that will enhance stockholder value. If we determine to engage in a transaction as a result of our exploration and evaluation of strategic options, our future business, prospects, financial position and operating results could be significantly different than those in historical periods or projected by our management. Because of the significant uncertainty regarding our future plans, we are not able to accurately predict the impact of a potential change in our existing business strategy. We do not intend to discuss or disclose further developments during this process unless and until our board of directors has approved a specific action or we otherwise determined that further disclosure is appropriate. Pending the results of our exploration and evaluation of strategic options, our current operating plan provides for stopping all activities related to the *Neuro-Spinal Implant* program and focusing on activities necessary to explore and evaluate strategic options.

Risks Related to Our Financial Position and Need for Additional Capital

We will need additional funding. If we are unable to raise capital when needed, we could be forced to delay, reduce, or eliminate our product development programs or commercialization efforts, engage in one or more potential transactions, or cease our operations entirely.

We estimate that our existing cash resources will be sufficient to fund our operations into the first quarter of 2024. We currently do not have sufficient cash resources to continue our business operations beyond that time. While we are stopping future development related to the *Neuro-Spinal Implant* program, we still expect to continue to incur significant expenses and operating losses for the foreseeable future. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations.

If we are unable to raise additional capital, we may seek to engage in one or more potential transactions, such as the sale of our company, a strategic partnership with one or more parties or the licensing, sale or divestiture of some of our assets or proprietary technologies, or we may be forced to cease our operation entirely. There can be no assurance that we will be able to enter into such a transaction or transactions on a timely basis or on terms that are favorable to us. If we are unable to raise capital when needed or on attractive terms, or should we engage in one or more potential

strategic transactions, we could be forced to delay, reduce, or eliminate our research and development programs or any future commercialization efforts or to cease operations entirely. If we determine to change our business strategy or to seek to engage in a strategic transaction, our future business, prospects, financial position and operating results could be significantly different than those in historical periods or projected by our management. Because of the significant uncertainty regarding these events, we are not able to accurately predict the impact of any potential changes in our existing business strategy.

Our future funding requirements, both near and long term, will depend on many factors, including, but not limited to:

- the time and expense required to stop development of the *Neuro-Spinal Scaffold* and wind down the INSPIRE 2.0 study;
- the cost and timing of future commercialization activities for our products if any of our product candidates are approved for marketing, including product manufacturing, marketing, sales, and distribution costs;
- the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;
- the cost of having our product candidates manufactured for clinical trials in preparation for regulatory approval and in preparation for commercialization;
- the cost and delays in product development as a result of any changes in regulatory oversight applicable to our product candidates;
- our ability to establish and maintain strategic collaborations, licensing, or other arrangements and the financial terms of such agreements;
- the cost and timing of establishing sales, marketing, and distribution capabilities;
- the costs involved in preparing, filing, prosecuting, maintaining, defending, and enforcing our intellectual property portfolio;
- the efforts and activities of competitors and potential competitors;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in businesses, products, and technologies.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive, and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for several years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all, and if we are not successful in raising additional capital, we may not be able to continue as a going concern.

There is substantial doubt about our ability to continue as a going concern, which may affect our ability to obtain future financing and may require us to curtail or cease our operations.

Our consolidated financial statements as of March 31, 2023 were prepared under the assumption that we will continue as a going concern. As of March 31, 2023, we had unrestricted cash and cash equivalents of $13.1 million. Our ability to continue as a going concern will depend on our ability to obtain additional equity or debt financing, attain further operating efficiencies, reduce or contain expenditures, and, ultimately, to generate revenue. Based on these factors, management determined that there is substantial doubt regarding our ability to continue as a going concern. Our independent registered public accounting firm expressed substantial doubt as to our ability to continue as a going

concern in its report dated March 1, 2023 included in the Company's Annual Report on Form 10-K as filed with the United States Securities and Exchange Commission ("SEC") on March 1, 2023.

If we are unable to continue as a going concern, we may have to liquidate our assets and may receive less than the value at which those assets are carried on our audited financial statements, and it is likely that investors will lose all or part of their investment. When we seek additional financing to fund our business activities as a result of the substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding to us on commercially reasonable terms or at all.

We have a limited operating history and have incurred significant losses since our inception.

We have incurred net losses each year since our inception, including net losses of $2.3 million for the three months ended March 31, 2023, and net losses of $10.5 million for the year ended December 31, 2022 and $9.9 million for the year ended December 31, 2021. As of March 31, 2023, we had an accumulated deficit of $251.0 million. We have a limited operating history on which to base an evaluation of our business and investors should consider the risks and difficulties frequently encountered by early-stage companies in new and rapidly evolving markets, particularly biotechnology companies. To date, we have not commercialized any products or generated any revenues from the sale of products, and we do not expect to generate any product revenues in the foreseeable future. We do not know whether or when we will generate revenue or become profitable. Moreover, we may allocate significant amounts of capital towards products and technologies for which market demand is lower than anticipated and, as a result, may not achieve expectations or may elect to abandon such efforts.

We anticipate that we will continue to incur substantial losses for the foreseeable future and may never achieve or maintain profitability.

We expect to continue to incur significant expenses and increasing net losses. To become and remain profitable, we must succeed in identifying, developing and commercializing our product candidates with significant market potential. This will require us to be successful in a range of challenging activities, including completing preclinical testing and clinical trials of our current and future product candidates, developing additional product candidates, obtaining regulatory approval for these product candidates, and manufacturing, marketing, and selling any products for which we may obtain regulatory approval. We are only in the initial stages of most of these activities. We may never succeed in these activities and, even if we do, may never generate revenues that are significant enough to achieve profitability.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable could depress the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product offerings, or even continue our operations. A decline in the value of our company could cause an investor to lose all or part of their investment.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations, or require us to relinquish rights to our product candidates on unfavorable terms to us.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, and other third party funding alternatives including license and collaboration agreements. To raise additional capital or pursue strategic transactions, we may in the future sell additional shares of our common stock, or other securities convertible into or exchangeable for our common stock, which will dilute the ownership interest of our current stockholders, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our current stockholders. If we raise additional funds through collaborations, strategic alliances, or marketing, distribution, or licensing arrangements with third parties, we may have to relinquish valuable rights to our product candidates, future revenue streams or research programs, or grant licenses on terms that may not be favorable to us or that may reduce the value of our common stock. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce, or terminate our product development or commercialization efforts for any product candidates that we develop or acquire or to cease operations entirely.

Although we recently increased the number of authorized shares available, future increases in authorized shares may be required for future financings or other strategic transactions. We have previously experienced difficulties obtaining quorum for our annual meetings of stockholders and achieving the number of votes required for increases in authorized shares. If we continue to experience such difficulties, we will be limited in our efforts to raise additional capital, and our operations, financial condition and our ability to continue as a going concern may be materially and adversely affected.

We will need to seek the additional capital necessary to fund our operations through public or private equity offerings, debt financings, and collaborative and licensing arrangements. We have limited capital and in order for us to execute on our business plan and remain viable as a going concern, we must have the flexibility to engage in capital raising transactions until we are able to generate sufficient revenue and cash flow. Investors in prior transactions have purchased our common stock or our derivative securities, such as warrants, for which we must reserve unissued common stock. We therefore may need to increase the number of authorized shares of our common stock in order to issue common stock or securities convertible or exercisable into common stock to investors and other strategic partners, and as a result enable us to engage in capital raising transactions and other strategic transactions involving the issuance of equity securities.

Such increases to our authorized common stock require shareholder approval. Our 2021 Annual Meeting of stockholders was held in July 2021, and we were able to achieve quorum but we were not able to obtain the number of necessary votes to approve an increase in our authorized common stock. In connection with our 2022 Annual Meeting of stockholders, which took place on September 9, 2022, our Board adopted and applied a voting rights plan, which allowed certain shareholders exercise additional voting rights with respect to their shares of common stock to which the voting rights are applied or the Voting Rights Plan. The Voting Rights Plan was of limited scope of and purpose and was designed to facilitate the approval of an amendment to the Company's Articles of Incorporation to increase the number of authorized shares of common stock and another amendment to the Company's Articles of Incorporation to authorize shares of "blank-check" preferred stock at the 2022 Annual Meeting. Although the implementation of the Voting Rights Plan allowed us to successfully pass both proposals at the 2022 Annual Meeting, we cannot be sure that we will not experience future difficulties in obtaining quorum for our annual meetings or difficulties in obtaining the necessary votes required to pass proposals such as increases in authorized shares, as we experienced at the 2021 Annual Meeting and prior meetings. In such events, we will be limited in our efforts to raise additional capital, and our operations, financial condition and our ability to continue as a going concern may be materially and adversely affected.

Changes in tax laws or in their implementation or interpretation may adversely affect our business and financial condition.

As part of Congress' response to the COVID-19 pandemic, the Families First Coronavirus Response Act, or the FFCR Act, was enacted on March 18, 2020, and the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, was enacted on March 27, 2020. Both contain numerous tax provisions. Effective for tax years beginning after December 31, 2021, the Tax Cuts and Jobs Act of 2017, or the Tax Act, or Section 174 of the Internal Revenue Code, or the Code, will no longer permit an immediate deduction for R&D expenditures in the tax year that such costs are incurred. For expenses that are incurred for R&D in the U.S., such amounts will be amortized over five years (this is currently approximately 90% of the Company's relevant spend), and expenses that are incurred for R&D expenditures outside the U.S. will be amortized over 15 years.

Regulatory guidance under the Tax Act, the FFCR Act and the CARES Act is and continues to be forthcoming, and such guidance could ultimately increase or lessen the impact of these laws on our business and financial condition. Congress is also considering and may enact further tax law changes in connection with the COVID-19 pandemic, some of which could have an impact on our company. In addition, state tax legislation or administration guidance conforming to or decoupling from particular provisions of the Tax Act, the FFCR Act and the CARES Act could affect our business or financial condition.

Our ability to use our net operating loss, or NOLs, carryforwards and tax credit carryforwards may be limited.

We have generated significant NOLs and research and development tax credits, or R&D credits, as a result of our incurrence of losses and our conduct of research activities since inception. We generally are able to carry NOLs and R&D credits forward to reduce our tax liability in future years but certain NOL carryforwards could expire unused and

be unavailable to offset our future income tax liabilities. As described above in "Changes in tax laws or in their implementation or interpretation may adversely affect our business and financial condition," the Tax Act, as amended by the CARES Act, includes changes to U.S. federal tax rates and the rules governing NOLs that may significantly impact our ability to utilize our NOLs to offset taxable income in the future. Nor is it clear how various states will respond to the Tax Act, the FFCR Act or the CARES Act. In addition, state NOLs generated in one state cannot be used to offset income generated in another state. For these reasons, even if we attain profitability, we may be unable to use a material portion of our NOLs and other tax attributes.

In addition, our ability to utilize the NOLs and R&D credits is subject to the rules of Sections 382 and 383, respectively, of the Code. Those sections generally restrict the use of NOLs and R&D credits after an "ownership change." An ownership change occurs if, among other things, the stockholders (or specified groups of stockholders) who own or have owned, directly or indirectly, 5% or more of a corporation's common stock or are otherwise treated as 5% stockholders under Section 382 of the Code and the United States Treasury Department regulations promulgated thereunder increase their aggregate percentage ownership of that corporation's stock by more than 50 percentage points over the lowest percentage of the stock owned by these stockholders over the applicable testing period. In the event of an ownership change, Section 382 imposes an annual limitation on the amount of taxable income a corporation may offset with NOL carryforwards and Section 383 imposes an annual limitation on the amount of tax a corporation may offset with business credit (including the R&D credit) carryforwards. Any unused annual limitation may be carried over to later years until the applicable expiration date for the respective NOL or R&D credit carryforwards. We have completed several financings since our inception, which may have resulted in an ownership change as defined by Sections 382 and 383 of the Code, or could result in an ownership change in the future, but we have not completed an analysis of whether a limitation as noted above exists. As of March 31, 2023, we have not performed a Section 382 study yet, but we will complete an appropriate analysis before our tax attributes are utilized.

Acquisitions of companies, businesses, or technologies may substantially dilute our stockholders and increase our operating losses.

We continue to actively evaluate business partnerships and acquisitions of businesses, technologies, or intellectual property rights that we believe would be necessary, useful, or complementary to our current business. Any such acquisition may require assimilation of the operations, products or product candidates, and personnel of the acquired business and the training and integration of its employees, and could substantially increase our operating costs, without any offsetting increase in revenue. We may also acquire the right to use certain intellectual property through licensing agreements, which could substantially increase our operating costs. Acquisitions and licensing agreements may not provide the intended technological, scientific or business benefits and could disrupt our operations and divert our limited resources and management's attention from our current operations, which could harm our existing product development efforts. While we may use cash or equity to finance a future acquisition or licensing agreement, it is likely we would issue equity securities as a significant portion or all of the consideration in any acquisition. The issuance of equity securities for an acquisition could be substantially dilutive to our stockholders. Any investment made in, or funds advanced to, a potential acquisition target could also significantly, adversely affect our results of operations and could further reduce our limited capital resources. Any acquisition or action taken in anticipation of a potential acquisition or other change in business activities could substantially depress the price of our stock. In addition, our results of operations may suffer because of acquisition related costs, or the post-acquisition costs of funding the development of an acquired technology or product candidates or operations of the acquired business, or due to amortization or impairment costs for acquired goodwill and other intangible assets.

Risks Related to the Development, Regulatory Approval, and Commercialization of Our Product Candidates

Clinical trials for future product candidates may experience delays or may not be able to commence.

Before we can obtain regulatory approval for the sale of any of our product candidates, we must complete the clinical studies that are required. We previously experienced delays in our clinical development of the Neuro-Spinal Scaffold implant, and we cannot be certain that we will not experience future delays in or not successfully complete the clinical development of other product candidates. Future clinical studies and clinical development may take longer than anticipated because of any number of factors, including potential delays in the enrollment of subjects in the study, the availability of scaffold implants or other investigational products to supply to our clinical sites, failure to demonstrate clinical success, the lack of adequate funding to continue any clinical trials, or unforeseen safety issues. Further,

enrolling patients into any clinical trial will continue to require the approval of the institutional review boards, or IRBs, at each clinical site.

In addition, clinical trials can be delayed or aborted for a variety of reasons, including delay or failure to:

- obtain regulatory approval to commence future clinical trials;
- reach agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtain IRB approval at each site;
- recruit, enroll, and retain patients through the completion of clinical trials;
- maintain clinical sites in compliance with trial protocols through the completion of clinical trials;
- address patient safety concerns that arise during the course of the trial;
- initiate or add a sufficient number of clinical trial sites; or
- manufacture sufficient quantities of our product candidate for use in clinical trials.

We could encounter delays if a clinical trial is suspended or terminated by us, by the relevant IRB at the sites at which such trials are being conducted, by the Data Safety Monitoring Board for such trial, or by the FDA or other regulatory authorities. Such authorities may suspend or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, a problematic inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse events, or changes in laws or regulations. In addition, regulatory agencies may require an audit with respect to the conduct of a clinical trial, which could cause further delays or increase costs. For example, in December 2017, we and several of our clinical sites and our CRO were subject to an FDA inspection in association with The INSPIRE Study. At the close of the inspection at the Company, the FDA issued a Form 483 with two observations relating to our oversight of clinical trial sites in The INSPIRE Study. We sought input from the FDA regarding the scope and timing of our proposed remediation efforts and the FDA has indicated that our corrective actions appear adequate. We cannot be certain that we will not be subject to additional regulatory action by the FDA. Our remediation efforts have added, and may continue to add, costs to our clinical development plans. Any delays in completing our clinical trials will increase our costs, slow down our product candidate development and regulatory review process, and jeopardize our ability to obtain approval and commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition, and prospects significantly.

Clinical trials involve a lengthy and expensive process with an uncertain outcome, and results of earlier nonclinical studies and clinical trials may not be predictive of future trial results.

The results of preclinical studies and early clinical trials do not necessarily predict the results of later-stage clinical trials. The design of our clinical trials is based on many assumptions about the expected effects of our product candidates, and if those assumptions are incorrect, the trials may not produce results to support regulatory approval. Preliminary results may not be confirmed upon full analysis of the detailed results of an early clinical trial. Product candidates in later stages of clinical development may fail to show safety and probable benefit sufficient to support intended use claims despite having progressed through initial clinical testing. The data collected from clinical trials of our product candidates may not be sufficient to obtain regulatory approval in the United States or elsewhere. It is also possible that patients enrolled in clinical trials will experience adverse events or unpleasant side effects that are not currently part of the product candidate's profile. Because of the uncertainties associated with clinical development and regulatory approval, we cannot determine if or when we will have an approved product ready for commercialization or achieve sales or profits.

Risks Related to Government Regulation

Our Products and our operations are subject to extensive government regulation and oversight in the United States and overseas. We must obtain FDA approval before we can sell any of our products in the United States and approval of similar regulatory authorities in countries outside the United States before we can sell our products in such countries. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our products if such approval is denied or delayed. If we fail to maintain regulatory approvals and clearances, or are unable to obtain, or experience significant delays in obtaining, FDA clearances or approvals for our future products or product enhancements, our ability to commercially distribute and market these products could suffer.

The development, manufacture, and marketing of our products are subject to government regulation in the United States and other countries. In the United States and most foreign countries, we must complete rigorous preclinical testing and extensive human clinical trials that demonstrate the safety and effectiveness of a product in order to apply for regulatory approval to market the product. If the FDA grants regulatory approval of a product, the approval may be limited to specific indications or limited with respect to its distribution. Expanded or additional indications may not be approved, which could limit our potential revenues. Foreign regulatory authorities may apply similar or additional limitations or may refuse to grant any approval. Consequently, even if we believe that preclinical and clinical data are sufficient to support regulatory approval for our products, the FDA and foreign regulatory authorities may not ultimately grant approval for commercial sale in any jurisdiction. If our product candidates are not approved, our ability to generate revenues will be limited and our business will be adversely affected.

Some of our future products may be viewed by the FDA as combination products and the review of combination products is often more complex and more time consuming than the review of other types of products.

Our future products may be regulated by the FDA as combination products. For a combination product, the FDA must determine which center or centers within the FDA will review the product candidate and under what legal authority the product candidate will be reviewed. The process of obtaining FDA marketing clearance or approval is lengthy, expensive, and uncertain, and we cannot be sure that any of our combination products, or any other products, will be cleared or approved in a timely fashion, or at all. In addition, the review of combination products is often more complex and more time consuming than the review of a product candidate under the jurisdiction of only one center within the FDA. We cannot be sure that the FDA will not select to have our combination products reviewed and regulated by only one FDA center and/or different legal authority, in which case the path to regulatory approval would be different and could be lengthier and more costly. If the FDA does not approve or clear our products in a timely fashion, or at all, our business and financial condition will be adversely affected.

We may face substantial competition, which may result in others discovering, developing, or commercializing products before or more successfully than we do.

In general, the biotechnology industry is subject to intense competition and rapid and significant technological change. We have many potential competitors, including major drug companies, specialized biotechnology firms, academic institutions, government agencies, and private and public research institutions. Many of these competitors have significantly greater financial and technical resources than us, and superior experience and expertise in research and development, preclinical testing, design and implementation of clinical trials, regulatory processes and approval for products, production and manufacturing, and sales and marketing of approved products. Large and established companies compete in the biotechnology market. In particular, these companies have greater experience and expertise in securing government contracts and grants to support their research and development efforts, conducting testing and clinical trials, obtaining regulatory approvals to market products, manufacturing such products on a broad scale, and marketing approved products. Smaller or early-stage companies and research institutions may also prove to be significant competitors, particularly if they have collaborative arrangements with larger and more established biotechnology companies. We will also face competition from these parties in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites, and registering subjects for clinical trials.

In order to effectively compete, we will have to make substantial investments in development, clinical testing, manufacturing, and sales and marketing, or partner with one or more established companies. There is no assurance that we will be successful in having our products approved or gaining significant market share for any of our products. Our technologies and products also may be rendered obsolete or noncompetitive as a result of products introduced by our competitors.

The results of our clinical trials may not support our product candidate claims or may result in the discovery of adverse side effects.

Our ongoing research and development, preclinical testing, and clinical trial activities are subject to extensive regulation and review by numerous governmental authorities both in the United States and abroad. Clinical studies must be conducted in compliance with FDA regulations or the FDA may take enforcement action. The data collected from these clinical studies may ultimately be used to support market clearance for these products. Even if our clinical trials are completed as planned, we cannot be certain that their results will support our product candidate claims or that the FDA will agree with our conclusions regarding them. Success in preclinical studies and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the later trials will replicate the results of prior trials and preclinical studies. The clinical trial process may fail to demonstrate that our product candidates are safe and effective for the proposed indicated uses, which could cause us to abandon a product candidate and may delay development of others. Any delay or termination of our clinical trials will delay the filing of our product submissions and, ultimately, our ability to commercialize our product candidates and generate revenues. It is also possible that patients enrolled in clinical trials will experience adverse side effects that are not currently part of the product candidate's profile.

If approved, our products will require market acceptance to be successful. Failure to gain market acceptance would impact our revenues and may materially impair our ability to continue our business.

Even if we receive regulatory approvals for the commercial sale of our product candidates, the commercial success of our products will depend on, among other things, their acceptance by physicians, patients, third-party payers such as health insurance companies, and other members of the medical community as a therapeutic and cost-effective alternative to competing products and treatments. Market acceptance of, and demand for, any product that we may develop and commercialize will depend on many factors, both within and outside of our control. Payers may view new products or products that have only recently been launched or with limited clinical data available, as investigational, unproven, or experimental, and on that basis may deny coverage of procedures involving the use of our products. If our product candidates fail to gain market acceptance, we may be unable to earn sufficient revenue to continue our business.

If we or our suppliers fail to comply with FDA regulatory requirements, or if we experience unanticipated problems with any approved products, these products could be subject to restrictions or withdrawal from the market.

Any product for which we obtain regulatory approval, and the manufacturing processes, reporting requirements, post-approval clinical data, and promotional activities for such product, will be subject to continued regulatory review and oversight by the FDA. In particular, we and our third-party suppliers will be required to comply with the FDA's Quality System Regulations, or QSRs. These FDA regulations cover the methods and documentation of the design, testing, production, control, quality assurance, labeling, packaging, sterilization, storage, and shipping of products. Compliance with applicable regulatory requirements is subject to continual review and is monitored rigorously through periodic inspections by the FDA. If we, or our manufacturers, fail to adhere to QSR requirements, this could delay production of our product candidates and lead to fines, difficulties in obtaining regulatory clearances, recalls, enforcement actions, including injunctive relief or consent decrees, or other consequences, which could, in turn, have a material adverse effect on our financial condition and results of operations.

In addition, we and our suppliers are required to comply with Good Manufacturing Practices and Good Tissue Practices with respect to any human cells and biologic products we may develop, and International Standards Organization regulations for the manufacture of our products, and other regulations which cover the methods and documentation of the design, testing, production, control, quality assurance, labeling, packaging, storage, and shipping of any product for which we obtain clearance or approval. Manufacturing may also be subject to controls by the FDA for parts of the combination products that the FDA may find are controlled by the biologics regulations.

The FDA audits compliance with the QSR and other similar regulatory requirements through periodic announced and unannounced inspections of manufacturing and other facilities. The failure by us or one of our suppliers to comply with applicable statutes and regulations administered by the FDA, or the failure to timely and adequately respond to any adverse inspectional observations or product safety issues, could result in any of the following enforcement actions:

- untitled letters, warning letters, fines, injunctions, consent decrees, and civil penalties;
- unanticipated expenditures to address or defend such actions;
- customer notifications or repair, replacement, refunds, recall, detention, or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying our requests for premarket approval of new products or modified products;
- withdrawing regulatory approvals that have already been granted;
- refusal to grant export approval for our products; or
- criminal prosecution.

Any of these sanctions could have a material adverse effect on our reputation, business, results of operations, and financial condition.

Our products and operations are subject to extensive governmental regulation both in the United States and abroad, and our failure to comply with applicable requirements could cause our business to suffer.

We are subject to extensive regulation by the FDA and various other federal, state, and foreign governmental authorities. Government regulation of medical devices and biologic products is meant to assure their safety and effectiveness, and includes regulation of, among other things:

- design, development, and manufacturing;
- testing, labeling, content, and language of instructions for use and storage;
- clinical trials;
- product safety;
- marketing, sales, and distribution;
- regulatory clearances and approvals including premarket clearance and approval;
- conformity assessment procedures;
- product traceability and record keeping procedures;

- advertising and promotion;
- product complaints, complaint reporting, recalls, and field safety corrective actions;
- post-market surveillance, including reporting of deaths or serious injuries, and malfunctions that, if they were to recur, could lead to death or serious injury;
- post-market studies; and
- product import and export.

The regulations to which we are subject are complex and have tended to become more stringent over time. Regulatory changes could impede our ability to carry on or expand our operations and could result in higher than anticipated costs or lower than anticipated sales.

Biological products must satisfy the requirements of the Public Health Services Act and its implementing regulations. In order for a biologic product to be legally marketed in the U.S., the product must have a biologics license applicable approved by the FDA. The testing and approval process requires substantial time, effort, and financial resources, and each may take several years to complete.

The FDA can delay, limit, or deny clearance or approval of a product for many reasons, including:

- we may not be able to demonstrate to the FDA's satisfaction that our products are safe and effective for their intended uses;
- the data from our preclinical studies and clinical trials may be insufficient to support clearance or approval, where required; and
- the manufacturing process or facilities we use may not meet applicable requirements.

In addition, the FDA may change its clearance and approval policies, adopt additional regulations or revise existing regulations, or take other actions that may prevent or delay approval or clearance of our products under development or impact our ability to modify our currently approved or cleared products on a timely basis.

Further, even after we have obtained the proper regulatory clearance or approval to market a product, the FDA may require us to conduct post-marketing studies. Failure to conduct required studies in a timely manner could result in the revocation of approval for the product that is subject to such a requirement and could also result in the recall or withdrawal of the product, which would prevent us from generating sales from that product in the United States.

Our failure to comply with U.S. federal, state and foreign governmental regulations could lead to the issuance of warning letters or untitled letters, the imposition of injunctions, suspensions or loss of regulatory clearance or approvals, product recalls, termination of distribution, product seizures or civil penalties. In the most extreme cases, criminal sanctions or closure of our manufacturing facility are possible.

Failure to comply with applicable laws and regulations could jeopardize our ability to sell our products and result in enforcement actions such as:

- warning letters;
- fines;
- injunctions;
- civil penalties;

- termination of distribution;
- recalls or seizures of products;
- delays in the introduction of products into the market;
- total or partial suspension of production;
- refusal of the FDA or other regulators to grant future clearances or approvals;
- withdrawals or suspensions of current clearances or approvals, resulting in prohibitions on sales of our products; and/or
- in the most serious cases, criminal penalties.

Any of these sanctions could result in higher than anticipated costs or lower than anticipated sales and have a material adverse effect on our reputation, business, results of operations, and financial condition.

If we are able to develop and gain approval for any product, it may in the future be subject to product recalls. A recall of our products, either voluntarily or at the direction of the FDA, or the discovery of serious safety issues with our products, could have a significant adverse impact on us.

If our products are approved for commercialization, the FDA and similar foreign governmental authorities have the authority to require the recall of commercialized products in the event of material deficiencies or defects in design or manufacture. For example, in the case of the FDA, the decision to require a recall must be based on an FDA finding that there is reasonable probability that a medical device would cause serious injury or death. A government-mandated or voluntary recall by us or one of our partners could occur as a result of an unacceptable risk to health, component failures, malfunctions, manufacturing errors, design or labeling defects, or other deficiencies and issues. Recalls of any of our commercialized products would divert managerial and financial resources and have an adverse effect on our reputation, results of operations, and financial condition, which could impair our ability to manufacture our products in a cost-effective and timely manner in order to meet our customers' demands. We may also be subject to liability claims, be required to bear other costs, or take other actions that may have a negative impact on our future sales and our ability to generate profits.

If we obtain approval for our products, we may be subject to enforcement action if we engage in improper marketing or promotion of our products.

We are not permitted to promote or market our investigational products. After approval, our promotional materials and training methods must comply with FDA and other applicable laws and regulations, including the prohibition of the promotion of unapproved, or off-label, use. Surgeons may use our products off-label, as the FDA does not restrict or regulate a surgeon's choice of treatment within the practice of medicine. However, if the FDA determines that our promotional materials or training constitutes promotion of an off-label use, it could request that we modify our training or promotional materials or subject us to regulatory or enforcement actions, including the issuance of an untitled letter, a warning letter, injunction, seizure, civil fine, or criminal penalties. It is also possible that other federal, state, or foreign enforcement authorities might take action if they consider our promotional or training materials to constitute promotion of an off-label use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false claims for reimbursement. In that event, our reputation could be damaged and adoption of the products could be impaired. In addition, the off-label use of our products may increase the risk of product liability claims. Product liability claims are expensive to defend and could divert our management's attention, result in substantial damage awards against us, and harm our reputation.

It is also possible that other federal, state or foreign enforcement authorities might take action if they consider our educational and promotional activities or training methods to constitute promotion of an off-label use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false claims for reimbursement. In that event, our reputation could be damaged, and adoption of the products could be impaired. Although our policy is to refrain from statements that could be considered off-label promotion, the FDA or another

regulatory agency could disagree and conclude that we have engaged in off-label promotion. It is also possible that other federal, state or foreign enforcement authorities might take action, including, but not limited to, through a whistleblower action under the False Claims Act, if they consider our business activities constitute promotion of an off-label use, which could result in significant penalties, including, but not limited to, criminal, civil or administrative penalties, treble damages, fines, disgorgement, exclusion from participation in government healthcare programs, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and the curtailment or restructuring of our operations. In addition, the off-label use of our products may increase the risk of product liability claims. Product liability claims are expensive to defend and could divert our management's attention, result in substantial damage awards against us, and harm our reputation.

If we obtain approval for our products, their commercial success will depend in part upon the level of reimbursement we receive from third parties for the cost of our products to users.

The commercial success of any product will depend, in part, on the extent to which reimbursement for the costs of our products and related treatments will be available from third-party payers such as government health administration authorities, private health insurers, managed care programs, and other organizations. Adequate third-party insurance coverage may not be available for us to establish and maintain price levels that are sufficient for us to continue our business or for realization of an appropriate return on investment in product development.

Legislative or regulatory reform of the healthcare systems in which we operate may affect our ability to commercialize our product candidates and could adversely affect our business.

The government and regulatory authorities in the United States, the European Union, and other markets in which we plan to commercialize our product candidates may propose and adopt new legislation and regulatory requirements relating to the approval, Conformité Européenne or European Union marking, manufacturing, promotion, or reimbursement of medical device and biologic products. It is impossible to predict whether legislative changes will be enacted or applicable regulations, guidance, or interpretations changed, and what the impact of such changes, if any, may be. Such legislation or regulatory requirements, or the failure to comply with such, could adversely impact our operations and could have a material adverse effect on our business, financial condition, and results of operations.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be promulgated that could prevent, limit or delay regulatory clearance or approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. Certain policies of the current or future administrations may impact our business and industry. It is difficult to predict how any executive actions will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If executive actions impose restrictions on FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

Risks Related to Our Intellectual Property

If we cannot protect, maintain and, if necessary, enforce our intellectual property rights, our ability to develop and commercialize products will be adversely impacted.

Our success, in large part, depends on our ability to protect and maintain the proprietary nature of our technology. We and our licensors must prosecute and maintain our existing patents and obtain new patents. Some of our proprietary information may not be patentable, and there can be no assurance that others will not utilize similar or superior solutions to compete with us. We cannot guarantee that we will develop proprietary products that are patentable, and that, if issued, any patent will give a competitive advantage or that such patent will not be challenged by third parties. The process of obtaining patents can be time consuming with no certainty of success, as a patent may not issue or may not have sufficient scope or strength to protect the intellectual property it was intended to protect. We cannot assure you that our means of protecting our proprietary rights will suffice or that others will not independently develop competitive technology or design around patents or other intellectual property rights issued to us. Even if a patent is

issued, it does not guarantee that it is valid or enforceable. Any patents that we or our licensors have obtained or obtain in the future may be challenged, invalidated, or unenforceable. If necessary, we may initiate actions to protect our intellectual property, which can be costly and time consuming.

If third parties successfully claim that we infringe their intellectual property rights, our ability to continue to develop and commercialize products could be delayed or prevented.

Third parties may claim that we or our licensors are infringing on or misappropriating their proprietary information. Other organizations are engaged in research and product development efforts that may overlap with our products. Such third parties may currently have, or may obtain in the future, legally blocking proprietary rights, including patent rights, in one or more products or methods under development or consideration by us. These rights may prevent us from commercializing products, or may require us to obtain a license from the organizations to use the technology. We may not be able to obtain any such licenses that may be required on reasonable financial terms, if at all, and cannot be sure that the patents underlying any such licenses will be valid or enforceable. There may be rights that we are not aware of, including applications that have been filed but not published that, when issued, could be asserted against us. These third parties could bring claims against us that would cause us to incur substantial expenses and, if successful, could cause us to pay substantial damages. Further, if a patent infringement suit were brought against us, we could be forced to stop or delay research and development of the product that is the subject of the suit. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our trade secrets or other confidential information could be compromised by disclosure during this type of litigation.

Risks Related to our Dependence on Third Parties

We will depend upon strategic relationships to develop and manufacture our products. If these relationships are not successful, we may not be able to capitalize on the market potential of these products.

The near and long-term viability of our products will depend, in part, on our ability to successfully establish new strategic collaborations with biotechnology companies, hospitals, insurance companies, and government agencies. Establishing strategic collaborations is difficult and time-consuming. Potential collaborators may reject collaborations based upon their assessment of our financial, regulatory, or intellectual property position. If we fail to establish a sufficient number of collaborations on acceptable terms, we may not be able to commercialize our products or generate sufficient revenue to fund further research and development efforts.

Even if we establish new collaborations, these relationships may never result in the successful development or commercialization of any of our product candidates for reasons both within and outside of our control.

There are a limited number of suppliers that can provide materials to us. Any problems encountered by such suppliers may detrimentally impact us.

We rely on third-party suppliers and vendors for certain of the materials used in the manufacture of our products or other of our product candidates. Any significant problem experienced by one of our suppliers could result in a delay or interruption in the supply of materials to us until such supplier resolves the problem or an alternative source of supply is located. Any delay or interruption could negatively affect our operations.

If the third parties on which we rely to conduct our laboratory testing, animal, and human clinical trials do not perform as contractually required or expected, we may not be able to obtain regulatory approval for or commercialize our products.

We have been, and will continue to be, dependent on third-party CROs, medical institutions, investigators, and contract laboratories to conduct certain activities related to our laboratory testing and animal and human clinical studies. We are responsible for confirming that each of our clinical trials is conducted in accordance with our approved plan and protocol. Moreover, the FDA and foreign regulatory agencies require us to comply with regulations and standards, commonly referred to as good clinical practices, for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the trial participants are adequately protected. Our reliance on these third parties does not relieve us of these responsibilities and requirements. If these third parties do not

successfully carry out their contractual duties or regulatory obligations or meet expected deadlines, if the third parties need to be replaced, or if the quality or accuracy of the data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our preclinical development activities or clinical trials may be extended, delayed, suspended, or terminated, and we may not be able to obtain regulatory approval or successfully commercialize our products on a timely basis, if at all, and our business, operating results, and prospects may be adversely affected.

Risks Related to Employee Matters and Managing Growth

Our success depends on our ability to retain our management and other key personnel.

We depend on our senior management as well as key scientific personnel. We have implemented restructurings that have significantly reduced our workforce, leaving only key positions filled. The loss of any members of senior management or key scientific personnel could harm our business and significantly delay or prevent the achievement of research, development, or business objectives. Competition for qualified employees is intense among biotechnology companies, and the loss of qualified employees, or an inability to attract, retain, and motivate additional highly skilled employees could hinder our ability to successfully develop marketable products.

We may be subject to claims that our employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from collaborators, prospective licensees, and other third parties. In addition, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies. We may be subject to claims that we or our employees, consultants, or independent contractors have inadvertently or otherwise used or disclosed confidential information of these third parties or our employees' former employers. We may also be subject to claims that former employees, collaborators, or other third parties have an ownership interest in our patents or other intellectual property. We may be subject to ownership disputes in the future arising, for example, from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management and employees.

Risks Related to Litigation and Legal Compliance

We may face, and in the past have faced, lawsuits, which could divert management's attention and harm our business.

We may face, and in the past have faced, lawsuits, including class action or securities derivative lawsuits. The amount of time that is required to resolve these lawsuits is unpredictable and any lawsuits may divert management's attention from the day-to-day operations of our business, which could adversely affect our business, results of operations, and cash flows. Any litigation or claim against us, even those without merit, may cause us to incur substantial costs, and could place a significant strain on our financial resources, divert the attention of management from our core business and harm our reputation.

We face potential product liability claims, and, if successful claims are brought against us, we may incur substantial liability and costs.

We will have exposure to claims for product liability. Product liability coverage for the healthcare industry is expensive and sometimes difficult to obtain. We may not be able to maintain such insurance on acceptable terms or be able to secure increased coverage if the commercialization of our products progresses, nor can we be sure that existing or future claims against us will be covered by our product liability insurance. Moreover, the existing coverage of our insurance policy or any rights of indemnification and contribution that we may have may not be sufficient to offset existing or future claims. A successful claim may prevent us from obtaining adequate product liability insurance in the future on commercially desirable terms, if at all. Even if a claim is not successful, defending such a claim would be time-

consuming and expensive, may damage our reputation in the marketplace, and would likely divert our management's attention.

We are subject to environmental, health, and safety laws. Failure to comply with such environmental, health, and safety laws could cause us to become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We are subject to various environmental, health, and safety laws and regulations, including those relating to safe working conditions, laboratory, and manufacturing practices, the experimental use of animals and humans, emissions and wastewater discharges, and the use and disposal of hazardous or potentially hazardous substances used in connection with our research. Any of these laws or regulations could cause us to incur additional expense or restrict our operations. Compliance with environmental laws and regulations may be expensive, and current or future environmental regulations may impair our research and development efforts.

Our relationships with customers and third party payers will be subject to applicable anti-kickback, fraud and abuse, and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, program exclusion, contractual damages, reputational harm, and diminished profits and future earnings.

Healthcare providers, physicians, and third-party payers will play a primary role in the recommendation and use of our products and any other product candidates for which we obtain marketing approval. Our future arrangements with healthcare providers, physicians, and third-party payers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell, and distribute any products for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- the federal Anti-Kickback Statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving, or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order, or recommendation or arranging of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;

- the federal False Claims Act imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented, false or fraudulent claims for payment by a federal healthcare program or making a false statement or record material to payment of a false claim or avoiding, decreasing, or concealing an obligation to pay money to the federal government, with potential liability including mandatory treble damages and significant per-claim penalties;

- the federal Health Insurance Portability and Accountability Act of 1996 or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information;

- the federal Physician Payments Sunshine Act requires applicable manufacturers of covered products to report payments and other transfers of value to physicians and teaching hospitals; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws and transparency statutes, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payers, including private insurers.

Some state laws require companies to comply with the industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require product manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing

expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

If our operations are found to be in violation of any of the laws described above or any governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment, or restructuring of our operations could adversely affect our financial results. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations, or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal, and administrative penalties, damages, fines, imprisonment, exclusion of products from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil, or administrative sanctions, including exclusions from government funded healthcare programs.

Our operations and reputation may be impaired if our information technology systems fail to perform adequately or if we are the subject of a data breach or cyber-attack.

Our information technology systems are important to operating our business. We rely on our information technology systems, some of which are or may be managed or hosted by or out-sourced to third party service providers, to manage our business data and other business processes. If we do not allocate and effectively manage the resources necessary to build, sustain, and protect appropriate information technology systems and infrastructure, or we do not effectively implement system upgrades or oversee third party service providers, our business or financial results could be negatively impacted. The failure of our information technology systems to perform as we anticipate could disrupt our business and could result in transaction or reporting errors and processing inefficiencies causing our business and results of operations to suffer.

Furthermore, our information technology systems may be vulnerable to cyber-attacks or other security incidents, service disruptions, or other system or process failures. Such incidents could result in unauthorized access to information including vendor, consumer or other company confidential data as well as disruptions to operations. We have experienced in the past, and expect to continue to experience, cybersecurity threats and incidents. To address the risks to our information technology systems and data, we maintain an information security program that includes updating technology, developing security policies and procedures, implementing and assessing the effectiveness of controls, conducting risk assessments of third-party service providers and designing business processes to mitigate the risk of such breaches. There can be no assurance that these measures will prevent or limit the impact of a future incident. Moreover, the development and maintenance of these measures requires continuous monitoring as technologies change and efforts to overcome security measures evolve. In addition, if a ransomware attack or other cybersecurity incident occurs, either internally or at our vendors or third-party technology service providers, or if we are unable to adequately respond to and resolve a cyber security incident, it may have a material, negative impact on our operations, including the inability to access our data and systems, or our business reputation, and we may experience other adverse consequences such as loss of assets, remediation costs, demands to pay a ransom, litigation, regulatory investigations, and the failure by us to retain or attract customers following such an event. Additionally, we rely on services provided by third-party vendors for certain information technology processes and functions, which makes our operations vulnerable to a failure by any one of these vendors to perform adequately or maintain effective internal controls. If we are unable to prevent or adequately respond to and resolve an incident, it may have a material, negative impact on our operations or business reputation, and we may experience other adverse consequences such as loss of assets, remediation costs, litigation, regulatory investigations, and the failure by us to retain or attract customers following such an event. Additionally, we rely on services provided by third-party vendors for certain information technology processes and

functions, which makes our operations vulnerable to a failure by any one of these vendors to perform adequately or maintain effective internal controls.

Risks Related to Investment in Our Securities

The price of our common stock has been and may continue to be volatile, which could lead to losses by investors and costly securities litigation.

The trading price of our common stock is likely to be highly volatile and could fluctuate in response to factors such as:

- the status, completion, and/or results of our clinical trials;
- actual or anticipated variations in our operating results;
- announcement of the commencement or completion of securities offerings by us;
- announcements of developments by us or our competitors;
- regulatory actions regarding our products;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, or capital commitments;
- adoption of new accounting standards affecting our industry;
- additions or departures of key personnel;
- sales of our common stock or other securities in the open market; and
- other events or factors, many of which are beyond our control.

The stock market is subject to significant price and volume fluctuations. In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been initiated against such a company. Litigation initiated against us, whether or not successful, could result in substantial costs and diversion of our management's attention and resources, which could harm our business and financial condition.

In the foreseeable future, we do not intend to pay cash dividends on shares of our common stock so any investor gains will be limited to the value of our shares.

We currently anticipate that we will retain future earnings for the development, operation, and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any gains to stockholders will therefore be limited to the increase, if any, in our share price.

In the event that we fail to satisfy any of the listing requirements of the Nasdaq Capital Market, our common stock may be delisted, which could affect our market price and liquidity.

Our common stock is listed on the Nasdaq Capital Market. For continued listing on the Nasdaq Capital Market, we will be required to comply with the continued listing requirements, including the minimum market capitalization standard, the corporate governance requirements and the minimum closing bid price requirement, among other requirements. For example, we have received deficiency letters due to the failure to maintain the minimum bid price and the failure to meet stockholder equity requirements, including the deficiency letter from the Listings Qualifications Department of the Nasdaq Stock Market letter we received on May 19, 2021 notifying us of a failure to comply with the minimum bid requirement. To regain compliance, on April 26, 2022, we implemented a 1:25 reverse stock split. Previously, in response to other deficiency letters, we needed to implement reverse stock splits and take other actions

including transferring to the Nasdaq Capital Market (from the Nasdaq Global Market) and implementing a warrant amendment.

There can be no assurance that we will maintain compliance with the bid price requirement in the future, or that we will continue to be in compliance with the other continued listing requirements of the Nasdaq Capital Market.

In the event that we fail to regain compliance, or we fail to obtain a second compliance period from Nasdaq, or fail to satisfy any of the listing requirements of the Nasdaq Capital Market, our common stock may be delisted. If our securities are delisted from trading on the Nasdaq Capital Market, and we are not able to list our securities on another exchange our securities could be quoted on the OTC Bulletin Board or on the "pink sheets." As a result, we could face significant adverse consequences including:

- a limited availability of market quotations for our securities;
- a determination that our common stock is a "penny stock," which would require brokers trading in our common stock to adhere to more stringent rules and possibly result in a reduced level of trading activity in the secondary trading market for our securities;
- a limited amount of news and analyst coverage
- a limited ability to raise capital to continue to fund our operations by selling shares; and
- a limited ability to acquire other companies or technologies by using our shares as consideration.

Anti-takeover effects of certain provisions of our articles of incorporation and Nevada state law may discourage or prevent a takeover.

Our articles of incorporation divide our Board of Directors into three classes, with three-year staggered terms. The classified board provision could increase the likelihood that, in the event an outside party acquired a controlling block of our stock, incumbent directors nevertheless would retain their positions for a substantial period, which may have the effect of discouraging, delaying, or preventing a change in control. In addition, Nevada has a business combination law, which prohibits certain business combinations between Nevada publicly traded corporations, or Nevada corporations that elect to be subject to the law, and "interested stockholders" for two years after the interested stockholder first becomes an interested stockholder, unless the corporation's board of directors approves the transaction by which the stockholder becomes an interested stockholder in advance, or the proposed combination in advance of the stockholder becoming an interested stockholder.

The proposed combination may be approved after the stockholder becomes an interested stockholder with preapproval by the board of directors and a vote at a special or annual meeting of stockholders holding at least 60% of the voting power not owned by the interested stockholder or his/her/its affiliates or associates. After the two year moratorium period, additional stockholder approvals or fair value requirements must be met by the interested shareholder up to four years after the stockholder became an interested stockholder. In addition, we may become subject to Nevada's control share laws. A corporation is subject to Nevada's control share law if it has more than 200 stockholders, at least 100 of whom are stockholders of record and residents of Nevada, and if the corporation does business in Nevada, including through an affiliated corporation. This control share law may have the effect of discouraging corporate takeovers. Currently, we believe that we have less than 100 stockholders of record who are residents of Nevada, and are therefore not subject to the control share laws.

The provisions of our articles of incorporation and Nevada's business combination and control share laws make it more difficult for a third party to acquire us and make a takeover more difficult to complete, even if such a transaction were in our stockholders' interest or might result in a premium over the market price for our common stock.

Failure to maintain an effective system of internal controls could result in material misstatements of our financial statements or cause us to fail to meet our reporting obligations or fail to prevent fraud in which case, our stockholders could lose confidence in our financial reporting, which would harm our business and could negatively impact the price of our stock.

We are required to comply with the internal control evaluation and certification requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or SOX, and management is required to report annually on our internal control over financial reporting. Our independent registered public accounting firm will not be required to formally attest to the effectiveness of our internal control over financial reporting pursuant to Section 404 of SOX until the date we have a public float of $75 million or greater and $100 million or greater in revenue.

If we fail to maintain effective internal controls and procedures for financial reporting, it could result in material misstatements in the annual or interim financial statements that would not be prevented or detected in a timely manner. We cannot assure you that material weaknesses or significant deficiencies will not occur in the future and that we will be able to remediate such weaknesses or deficiencies in a timely manner, which could impair our ability to accurately and timely report our financial position, results of operations or cash flows.

We are a "smaller reporting company," and the reduced disclosure requirements applicable to smaller reporting companies may make our common stock less attractive to investors.

We are considered a "smaller reporting company" under Rule 12b-2 of the Exchange Act of 1934 as amended. We are therefore entitled to rely on certain reduced disclosure requirements, such as an exemption from providing selected financial data and executive compensation information. These exemptions and reduced disclosures in our Securities and Exchange Commission filings due to our status as a smaller reporting company also mean our auditors are not required to review our internal control over financial reporting and may make it harder for investors to analyze our results of operations and financial prospects. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our common stock prices may be more volatile. We will remain a smaller reporting company until our public float exceeds $250 million or our annual revenues exceed $100 million with a public float greater than $700 million.

Item 6. Exhibits

Exhibit Number	Description
3.1	Articles of Incorporation of InVivo Therapeutics Holdings Corp. as amended (incorporated by reference from Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 as filed with the SEC on August 4, 2016.)
3.2	Certificate of Amendment to Articles of Incorporation of InVivo Therapeutics Holdings Corp. (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC on June 1, 2017.)
3.3	Certificate of Amendment to Articles of Incorporation of InVivo Therapeutics Holdings Corp. (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC June 1, 2018.)
3.4	Certificate of Change Pursuant to NRS 78.209 filed with Nevada Secretary of State, dated April 13, 2018 (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC on April 16, 2018.)
3.5	Certificate of Amendment to Articles of Incorporation of InVivo Therapeutics Holdings Corp. (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC January 21, 2020.)
3.6	Certificate of Change Pursuant to NRS 78.209 filed with Nevada Secretary of State, dated February 10, 2020 (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC on February 11, 2020.)
3.7	Certificate of Amendment to Articles of Incorporation of InVivo Therapeutics Holdings Corp. (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC August 5, 2020).
3.8	Certificate of change pursuant NRS78.207 filed with the Nevada Secretary of State, dated April 25, 2022 (incorporated by reference from exhibit 3.1 to the Company's current report on Form 8-K, as filed with the SEC on April 26, 2022.
3.9	Amended and Restated Bylaws of InVivo Therapeutics Holdings Corp, as amended (incorporated by reference from Exhibit 3.2 to the Company's Current Report on Form 8-K, as filed with the SEC on June 5, 2020.)
3.10	Certificate of Amendment to Articles of Incorporation of InVivo Therapeutics Holdings Corp. (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC September 13, 2022).
31.1+	Certification of the Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2+	Certification of the Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1+	Certification of the Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2+	Certification of the Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS+	Inline XBRL Instance Document

101.SCH+	Inline XBRL Taxonomy Extension Schema Document
101.CAL+	Inline XBRL Taxonomy Calculation Linkbase Document
101.DEF+	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB+	Inline XBRL Taxonomy Label Linkbase Document
101.PRE+	Inline XBRL Taxonomy Presentation Linkbase Document
104+	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

+ Filed herewith

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

INVIVO THERAPEUTICS HOLDINGS CORP.

Date: May 12 2022	By:	/s/ Richard Toselli
	Name:	Richard Toselli
	Title:	Chief Executive Officer, Principal Executive Officer
Date: May 12, 2022	By:	/s/ Richard Christopher
	Name:	Richard Christopher
	Title:	Principal Financial Officer, Principal Accounting Officer, Treasurer

Exhibit 31.1

SARBANES-OXLEY SECTION 302(a) CERTIFICATION

I, Richard Toselli, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of InVivo Therapeutics Holdings Corp.;

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

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

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

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

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

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

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

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

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

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

Date: May 12, 2023

/s/ Richard Toselli
Richard Toselli
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

SARBANES-OXLEY SECTION 302(a) CERTIFICATION

I, Richard Christopher, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of InVivo Therapeutics Holdings Corp.;

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

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

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

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

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

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

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

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

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

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

Date: May 12, 2023

/s/ Richard Christopher
Richard Christopher
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 on Form 10-Q of InVivo Therapeutics Holdings Corp. (the "Company") for the quarter ended March 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Richard Toselli, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 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.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Date: May 12, 2023

/s/ Richard Toselli
Richard Toselli
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 on Form 10-Q of InVivo Therapeutics Holdings Corp. (the "Company") for the quarter ended March 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Richard Christopher, Chief Financial Officer and Principal Financial and Accounting Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 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.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Date: May 12, 2023

/s/ Richard Christopher
Richard Christopher
Chief Financial Officer
(Principal Financial and Accounting Officer)