

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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, 2025**

OR

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

For the transition period from to

Commission File Number: **001-38022**



MATINAS BIOPHARMA HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

No. 46-3011414
(I.R.S. Employer
Identification No.)

1545 Route 206 South, Suite 302
Bedminster, New Jersey 07921
(Address of principal executive offices) (Zip Code)

908-484-8805
(Registrant's telephone number, including area code)

(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	MTNB	NYSE American

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

As of May 15, 2025, there were 5,086,985 shares of the registrant's common stock, \$0.0001 par value, outstanding.

MATINAS BIOPHARMA HOLDINGS, INC.

Form 10-Q

Quarter Ended March 31, 2025

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PART - I FINANCIAL INFORMATION

Item 1. FINANCIAL STATEMENTS

Matinas BioPharma Holdings, Inc.
Condensed Consolidated Balance Sheets
(in thousands, except for share data)

	March 31, 2025	December 31, 2024
	(Unaudited)	(Audited)
ASSETS:		
Current assets:		
Cash and cash equivalents	\$ 6,924	\$ 7,284
Restricted cash – security deposit	50	50
Prepaid expenses and other current assets	573	691
Total current assets	7,547	8,025
Non-current assets:		
Leasehold improvements and equipment – net	450	468
Operating lease right-of-use assets – net	1,571	1,680
Finance lease right-of-use assets – net	7	8
In-process research and development	2,260	2,260
Restricted cash – security deposit	200	200
Total non-current assets	4,488	4,616
Total assets	<u>\$ 12,035</u>	<u>\$ 12,641</u>
LIABILITIES AND STOCKHOLDERS' EQUITY:		
Current liabilities:		
Accounts payable	\$ 282	\$ 95
Accrued expenses	1,179	1,805
Operating lease liabilities – current	788	761
Financing lease liabilities – current	6	5
Total current liabilities	2,255	2,666
Non-current liabilities:		
Deferred tax liability	257	257
Operating lease liabilities – net of current portion	1,909	2,116
Financing lease liabilities – net of current portion	11	12
Warrant liability	1,333	—
Total non-current liabilities	3,510	2,385
Total liabilities	5,765	5,051
Stockholders' equity:		
Series C Convertible preferred stock, stated value \$1,000 per share, par value \$0.001 per share, 10,000,000 shares authorized at March 31, 2025 and December 31, 2024; 1,650 and 0 issued and outstanding as of March 31, 2025 and December 31, 2024, respectively. Liquidation preference of \$1,650,000 as of March 31, 2025.	—	—
Common stock par value \$0.0001 per share, 250,000,000 shares authorized at March 31, 2025 and December 31, 2024; 5,086,985 issued and outstanding as of March 31, 2025 and December 31, 2024, respectively	1	1
Additional paid-in capital	207,749	207,413
Accumulated deficit	(201,480)	(199,824)
Total stockholders' equity	6,270	7,590
Total liabilities and stockholders' equity	<u>\$ 12,035</u>	<u>\$ 12,641</u>

The accompanying notes are an integral part of these condensed consolidated financial statements.

Matinas BioPharma Holdings, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except for share and per share data)
Unaudited

	Three Months Ended March 31,	
	2025	2024
Costs and Expenses:		
Research and development	\$ 85	\$ 3,446
General and administrative	1,861	2,456
Total costs and expenses	1,946	5,902
Loss from operations	(1,946)	(5,902)
Change in fair value of warrant liability	294	—
Other (expense)/income, net	(4)	78
Net loss	\$ (1,656)	\$ (5,824)
Net loss per share – basic and diluted	\$ (0.33)	\$ (1.34)
Weighted average common shares outstanding:		
Basic and diluted	5,086,985	4,347,162
Other comprehensive gain, net of tax		
Unrealized gain on securities available-for-sale	—	87
Other comprehensive gain, net of tax	—	87
Comprehensive loss	\$ (1,656)	\$ (5,737)

The accompanying notes are an integral part of these condensed consolidated financial statements.

Matinas BioPharma Holdings, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(in thousands, except for share data)
Unaudited

	Convertible Preferred Stock Series C		Common Stock		Additional Paid - in Capital	Accumulated Deficit	Accumulated Other Comprehensive (loss)/Income	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance, December 31, 2024	—	\$ —	5,086,985	\$ 1	\$ 207,413	\$ (199,824)	\$ —	\$ 7,590
Stock-based compensation	—	—	—	—	315	—	—	315
Issuance of preferred stock and warrants in public offering, net of stock issuance costs (\$2)	1,650	—	—	—	21	—	—	21
Net loss	—	—	—	—	—	(1,656)	—	(1,656)
Balance, March 31, 2025	<u>1,650</u>	<u>\$ —</u>	<u>5,086,985</u>	<u>\$ 1</u>	<u>\$ 207,749</u>	<u>\$ (201,480)</u>	<u>\$ —</u>	<u>\$ 6,270</u>

	Convertible Preferred Stock Series C		Common Stock		Additional Paid - in Capital	Accumulated Deficit	Accumulated Other Comprehensive (Loss)/Income	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance, December 31, 2023	—	\$ —	4,345,291	\$ —	\$ 195,040	\$ (175,573)	\$ (221)	\$ 19,246
Stock-based compensation	—	—	—	—	995	—	—	995
Issuance of common stock in public offering, net of stock issuance cost (\$2)	—	—	4,366	—	54	—	—	54
Other comprehensive loss	—	—	—	—	—	—	87	87
Net loss	—	—	—	—	—	(5,824)	—	(5,824)
Balance, March 31, 2024	<u>—</u>	<u>\$ —</u>	<u>4,349,657</u>	<u>\$ —</u>	<u>\$ 196,089</u>	<u>\$ (181,397)</u>	<u>\$ (134)</u>	<u>\$ 14,558</u>

The accompanying notes are an integral part of these condensed consolidated financial statements.

Matinas BioPharma Holdings, Inc.
Condensed Consolidated Statements of Cash Flow
(in thousands)
Unaudited

	Three Months Ended March 31,	
	2025	2024
Cash flows from operating activities:		
Net loss	\$ (1,656)	\$ (5,824)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	18	94
Stock based compensation expense	315	995
Amortization of operating lease right-of-use assets	109	145
Amortization of finance lease right-of-use assets	1	1
Amortization of bond discount	—	18
Change in fair value of warrant liability	(294)	—
Changes in operating assets and liabilities:		
Operating lease liabilities	(179)	(154)
Prepaid expenses and other current assets	119	(393)
Accounts payable	187	(41)
Accrued expenses and other liabilities	(627)	(610)
Net cash used in operating activities	(2,007)	(5,769)
Cash flows from investing activities:		
Proceeds from maturities of marketable debt securities	—	2,000
Net cash provided by investing activities	—	2,000
Cash flows from financing activities:		
Gross proceeds from private placement of preferred stock and common stock warrants	1,650	—
Transaction costs paid pursuant to private placement	(2)	—
Net proceeds from public offering of common stock	—	54
Payments of finance lease liability – principal	(1)	(1)
Net cash provided by financing activities	1,647	53
Net decrease in cash, cash equivalents and restricted cash	(360)	(3,716)
Cash, cash equivalents and restricted cash at beginning of period	7,534	5,037
Cash, cash equivalents and restricted cash at end of period	\$ 7,174	\$ 1,321
Supplemental non-cash financing and investing activities:		
Fair value at issuance of liability classified warrants	\$ 1,627	\$ —
Unrealized gain on marketable debt securities	\$ —	\$ 87

The accompanying notes are an integral part of these condensed consolidated financial statements.

MATINAS BIOPHARMA HOLDINGS, INC.
Notes to Unaudited Condensed Consolidated Financial Statements
(Tabular dollars and shares in thousands, except per share data)

Note 1 – Description of Business

Matinas BioPharma Holdings Inc. (“Holdings”) is a Delaware corporation formed in 2013. Holdings is the parent company of Matinas BioPharma, Inc. (“BioPharma”), and Matinas BioPharma Nanotechnologies, Inc. (“Nanotechnologies,” formerly known as Aquarius Biotechnologies, Inc.), its operating subsidiaries (“Nanotechnologies”, and together with “Holdings” and “BioPharma”, “the Company”). The Company is a clinical-stage biopharmaceutical company focused on delivering groundbreaking therapies using its lipid nanocrystal (LNC) platform delivery technology (LNC Platform).

Note 2 – Liquidity, Plan of Operations and Going Concern

The Company has experienced net losses and negative cash flows from operations each period since its inception. Through March 31, 2025, the Company had an accumulated deficit of \$201,480. The Company’s net loss for the three months ended March 31, 2025 and 2024 was \$1,656 and \$5,824, respectively.

The Company expects operating expenses to be lower in the near term compared to recent years until such time as additional funding is secured to support initiation of the Phase 3 registration trial for MAT2203 and advancement of the LNC platform delivery technology. The Company expects that its research and development expenses will increase if it moves forward with additional clinical studies for its current product candidates and development of additional product candidates. If the Company obtains U.S. Food and Drug Administration (“FDA”) approval for one or more of its product candidates, the Company expects that its expenses will continue to increase once the Company reaches commercial launch. As a result, the Company expects to continue to incur substantial losses for the foreseeable future, and that these losses will be increasing.

As of March 31, 2025, the Company had cash and cash equivalents of \$6,924 and restricted cash of \$250. In addition, on April 8, 2025, the Company generated net proceeds of \$1,520 from the Second Closing of the sale of Preferred Stock (see Note 12). The Company does not believe the cash and cash equivalents on hand are sufficient to fund planned operations beyond the next twelve months from the filing date of these financial statements. As a result, substantial doubt exists about the Company’s ability to continue as a going concern.

The ability of the Company to continue as a going concern is dependent upon securing one or more partners to monetize the value of MAT2203, the ability to control its operating expenses, future sales of common stock through the At-The-Market Sales Agreement (“Sales Agreement”) with BTIG, LLC and securing additional financing. While the Company believes in the viability of this strategy and believes the actions presently being taken by the Company provide the opportunity for it to continue as a going concern, there can be no assurance the Company will be successful in its implementation. In particular, utilization of the Sales Agreement may not be viable due to market conditions and new financing may not be available on acceptable terms, or at all. Moreover, under the terms of the Preferred Stock sales agreement, the Company is prohibited, subject to certain exceptions, from issuing, entering into any agreement to issue, or announcing the issuance or proposed issuance of any shares of common stock or common stock equivalents until November 2025. These consolidated financial statements do not include any adjustments related to the recoverability and classification of asset amounts or the amounts and classification of liabilities that might be necessary if the Company is unable to continue as a going concern.

Note 3 – Summary of Significant Accounting Policies

Basis of presentation and principles of consolidation

The accompanying unaudited condensed consolidated financial statements include the consolidated accounts of Holdings and its wholly owned subsidiaries, BioPharma, and Nanotechnologies. The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (“U.S. GAAP”) and reflect the operations of the Company and its wholly owned subsidiaries. All intercompany transactions have been eliminated in consolidation.

Other than the policies listed below, there have been no material changes to the Company’s significant accounting policies are described in Note 3 within the Company’s Notes to Consolidated Financial Statements included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2024.

In August 2020, the FASB issued Accounting Standard Update No. 2020-06 – *Debt: Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity*, which simplifies accounting for convertible instruments by removing major separation models required under current GAAP. The ASU removes certain settlement conditions that are required for equity contracts to qualify for the derivative scope exception, and it also simplifies the diluted earnings per share calculation in certain areas. This ASU is effective for annual reporting periods beginning after December 15, 2021, including interim periods within those fiscal years. The Company adopted the ASU on January 1, 2025. This update permits the use of either the modified retrospective or fully retrospective method of transition.

The Company’s management has considered all recent accounting pronouncements issued and believes that these recent pronouncements will not have a material effect on the Company’s financial statements.

Warrants

The Company accounts for warrants as either equity-classified or liability-classified instruments based on an assessment of the warrant’s specific terms and applicable authoritative guidance in ASC 480, Distinguishing Liabilities from Equity and ASC 815, Derivatives and Hedging. Warrants classified as equity are recorded at fair value as of the date of issuance on the Company’s condensed consolidated balance sheets and no further adjustments to their initial valuation are subsequently made. Warrants that require separate accounting as liabilities are recorded on the Company’s condensed consolidated balance sheets at their fair value on the date of issuance and are revalued on each subsequent balance sheet date until such instruments are exercised or expired, with any changes in the fair value between reporting periods recorded on the condensed consolidated statement of operations. The assessment of whether the warrants are accounted for as equity-classified or liability-classified instruments is re-evaluated on a periodic basis.

Note 4 – Cash, Cash Equivalents, Restricted Cash and Marketable Debt Securities

The Company considers all highly liquid financial instruments with original maturities of three months or less when purchased to be cash and cash equivalents and all investments with maturities of greater than three months from date of purchase are classified as marketable debt securities. Cash and cash equivalents consist of cash in bank checking and savings accounts, money market funds and short-term U.S. treasury bonds that mature within three months of settlement date.

Cash, Cash Equivalents and Restricted Cash

The Company presents restricted cash with cash and cash equivalents in the Condensed Consolidated Statements of Cash Flows. Restricted cash at both March 31, 2025 and December 31, 2024 of \$250 represents funds the Company is required to set aside as collateral, primarily for one of the Company's operating leases.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported in the Condensed Consolidated Balance Sheets to the total of the amounts in the Condensed Consolidated Statements of Cash Flows as of March 31, 2025, December 31, 2024, March 31, 2024 and December 31, 2023:

	March 31, 2025	December 31, 2024	March 31, 2024	December 31, 2023
Cash and cash equivalents	\$ 6,924	\$ 7,284	\$ 1,071	\$ 4,787
Restricted cash included in current/non-current assets	250	250	250	250
Cash, cash equivalents and restricted cash in the statement of cash flows	<u>\$ 7,174</u>	<u>\$ 7,534</u>	<u>\$ 1,321</u>	<u>\$ 5,037</u>

Marketable Debt Securities

The Company has classified its investments in marketable debt securities as available-for-sale and as a current asset. The Company's investments in marketable debt securities are carried at fair value, with unrealized gains and losses included as a separate component of stockholders' equity. Unrealized losses and gains are classified as other comprehensive (loss)/income and costs are determined on a specific identification basis. Realized gains and losses from our marketable debt securities are recorded in other income, net. The Company did not incur any realized gains and losses during the three months ended March 31, 2025 and 2024. For the three months ended March 31, 2025 and 2024, the Company recorded unrealized gains of \$0 and \$87, respectively.

Note 5 - Fair Value Measurements

The Company uses the fair value hierarchy to measure the value of its financial instruments. The fair value hierarchy is based on inputs to valuation techniques that are used to measure fair value that are either observable or unobservable. Observable inputs reflect assumptions market participants would use in pricing an asset or liability based on market data obtained from independent sources, while unobservable inputs reflect a reporting entity's pricing based upon its own market assumptions. The basis for fair value measurements for each level within the hierarchy is described below:

- Level 1 – Quoted prices for identical assets or liabilities in active markets.
- Level 2 – Quoted prices for identical or similar assets and liabilities in markets that are not active; or other model-derived valuations whose inputs are directly or indirectly observable or whose significant value drivers are observable.
- Level 3 – Valuations derived from valuation techniques in which one or more significant inputs to the valuation model are unobservable and for which assumptions are used based on management estimates.

The Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible as well as counterparty credit risk in its assessment of fair value.

The carrying amounts of cash equivalents, current portion of restricted cash, prepaid expenses and other current assets, accounts payable, current portion of lease liabilities and accrued expenses approximate fair value due to the short-term nature of these instruments.

A summary of the assets and liabilities carried at fair value in accordance with the hierarchy defined above is as follows:

March 31, 2025	Total	Fair Value Hierarchy		
		(Level 1)	(Level 2)	(Level 3)
Liabilities				
Warrant liability	1,333	—	—	1,333
Total	\$ 1,333	\$ —	\$ —	\$ 1,333

The Company did not have any financial assets or liabilities that were carried at fair value using the hierarchy as of December 31, 2024.

The table below presents a summary of changes in fair value of the Warrant liability that is measured at fair value on a recurring basis:

	Warrant Liability
Balance at January 31, 2025	—
Issuance of Warrants reported at fair value	1,627
Change in fair value	(294)
Balance at March 31, 2025	1,333

On February 13, 2025, the Company entered into a securities purchase agreement with certain investors and, pursuant to an initial closing of the agreement issued and sold the investors (i) 1,650 shares of convertible preferred stock and (ii) warrants to purchase up to an aggregate of 5,631,404 shares of the Company's common stock (see Note 9).

The Company determined that the warrants do not satisfy the conditions to be accounted for as equity instruments as the warrants are not considered indexed to the Company's own stock. The Company classified the warrants as a liability upon issuance. Accordingly, proceeds from the transaction are first allocated to the warrants which are recorded at fair value at issuance, and any residual value allocated to preferred stock. Subsequent changes in fair value of the warrants are recognized in the Company's condensed consolidated statements of operations and comprehensive loss until either exercised or expired.

The Company's warrant liability is measured at fair value each reporting period utilizing a Monte Carlo simulation model, which requires assumptions including the value of the stock on the measurement date, exercise price, expected term, expected volatility, and the risk-free interest rate. Certain assumptions, including the expected term and expected volatility, are subjective and require judgment to develop. As a result, if factors or expected outcomes change and the Company uses significantly different assumptions or estimates, the warrant liability could be materially different.

The warrant liability was valued on the date of issuance and March 31, 2025 using the following range of assumptions:

Expected volatility	54.0% - 56.0%
Risk-free interest rate	3.95% - 4.39%
Stock price on valuation date	\$ 0.52 - 0.60
Exercise price	\$ 0.64
Dividend yield	0.00%
Expected term	4.9 - 5.0 years

Note 6 – Leasehold Improvements and Equipment

Leasehold improvements and equipment, summarized by major category, consist of the following as of March 31, 2025 and December 31, 2024:

	March 31, 2025	December 31, 2024
Equipment	\$ 283	\$ 283
Leasehold improvements	218	218
Total	501	501
Less: accumulated depreciation and amortization	51	33
Leasehold improvements and equipment, net	\$ 450	\$ 468

Depreciation and amortization expense for the three months ended March 31, 2025 and 2024 was \$18 and \$94, respectively.

Note 7 – Accrued Expenses and Other Liabilities

Accrued expenses, summarized by major category, as of March 31, 2025 and December 31, 2024 consist of the following:

	March 31, 2025	December 31, 2024
Severance	\$ 922	\$ 1,509
General and administrative expenses	257	296
Total	\$ 1,179	\$ 1,805

Note 8 – Leases

The Company has various lease agreements, including leases of office space, a laboratory and manufacturing facility, and various equipment. Some leases include purchase, termination or extension options for one or more years. These options are included in the lease term when it is reasonably certain that the option will be exercised.

The assets and liabilities from operating and finance leases are recognized at the lease commencement date based on the present value of remaining lease payments over the lease term using the Company's incremental borrowing rates or implicit rates, when readily determinable. Short-term leases, which have an initial term of 12 months or less, are not recorded on the balance sheet. The Company's operating leases do not provide implicit rates, therefore the Company utilized a discount rate based on its incremental borrowing rate to record the lease obligations. The Company's finance leases provide readily determinable implicit rates.

Operating lease obligations

The Company incurred lease expense for its operating leases of \$174 and \$226 for the three months ended March 31, 2025 and 2024, respectively. The Company incurred amortization expense on its operating lease right-of-use assets of \$109 and \$145 for the three months ended March 31, 2025 and 2024, respectively.

Finance Leases

The Company incurred interest expense on its finance leases of \$0 and \$1 for the three months ended March 31, 2025 and 2024. The Company incurred amortization expense on its finance lease right-of-use assets of \$1 for the three months ended March 31, 2025 and 2024, respectively.

The following table presents information about the amount and timing of liabilities arising from the Company's operating leases and finance leases as of March 31, 2025:

Maturity of Lease Liabilities	Operating Lease Liabilities	Finance Lease Liabilities
Remainder of 2025	\$ 753	\$ 5
2026	1,040	7
2027	944	7
2028	273	—
2029	138	—
Total undiscounted operating lease payments	\$ 3,148	\$ 19
Less: Imputed interest	451	2
Present value of operating lease liabilities	<u>\$ 2,697</u>	<u>\$ 17</u>
Weighted average remaining lease term in years	3.1	2.7
Weighted average discount rate	9.3%	11.6%

The following table presents information about the amount and timing of liabilities arising from the Company's operating leases and finance leases as of December 31, 2024:

Maturity of Lease Liabilities	Operating Lease Liabilities	Finance Lease Liabilities
2025	\$ 998	\$ 7
2026	1,040	7
2027	944	7
2028	273	—
2029	138	—
Total undiscounted operating lease payments	\$ 3,393	\$ 21
Less: Imputed interest	516	4
Present value of operating lease liabilities	<u>\$ 2,877</u>	<u>\$ 17</u>
Weighted average remaining lease term in years	3.3	2.9
Weighted average discount rate	9.3%	11.6%

Note 9 – Stockholders’ Equity

In accordance with the Certificate of Incorporation, the Company is authorized to issue 250,000,000 shares of common stock and 10,000,000 shares of preferred stock, each shares having a par value of \$0.001.

Common Stock

Reverse Stock Split

On August 30, 2024, the Company effected a one-for-fifty (1:50) reverse stock split (the “Reverse Stock Split”), pursuant to which each of the Company’s stockholders received one share of the Company’s common stock for every 50 shares of the Company’s common stock that such stockholder held immediately prior to the effective time of the Reverse Stock Split. The Reverse Stock Split affected all of the Company’s issued and outstanding shares of common stock equally provided that no fractional shares of common stock were issued as a result of the Reverse Stock Split as fractional shares of common stock were rounded up to the nearest whole share. The Reverse Stock Split also affected the Company’s outstanding stock-based awards, warrants and other exercisable or convertible securities and resulted in the shares of common stock underlying such instruments being reduced and the exercise price or conversion price being increased proportionally by the Reverse Stock Split ratio.

In connection with the Reverse Stock Split, the number of shares of common stock authorized for issuance was adjusted from 500,000,000 to 250,000,000, and the par value of \$0.0001 per share was not affected. Additionally, the number of issued and outstanding shares of the Company’s common stock was adjusted from 250,816,164 shares to 5,086,985 shares on August 30, 2024, including the issuance of an additional 70,661 shares to those stockholders that would otherwise would have been entitled to a fractional share of common stock as a result of the Reverse Stock Split.

April 2024 Purchase Agreement

On April 5, 2024, the Company closed a registered direct offering of 666,667 shares of its common stock and warrants to purchase up to an aggregate of 666,667 additional shares of common stock, at a combined purchase price of \$15.00 per share and accompanying warrant. The Company generated gross proceeds of \$10,000 and net proceeds of \$9,125, after deducting underwriting discounts and commissions and other offering expenses.

At-The-Market Equity Offering

On July 2, 2020, the Company entered into an At-The-Market Sales Agreement (the “Sales Agreement”) with BTIG, LLC (“BTIG”), pursuant to which the Company may offer and sell, from time to time, through BTIG, as sales agent and/or principal, shares of its common stock having an aggregate offering price of up to \$50,000, subject to certain limitations on the amount of common stock that may be offered and sold by the Company set forth in the Sales Agreement. BTIG will be paid a 3% commission on the gross proceeds from each sale. The Company may terminate the Sales Agreement at any time; BTIG may terminate the Sales Agreement in certain limited circumstances. The Company did not sell any shares under the Sales Agreement during the three months ended March 31, 2025. During the three months ended March 31, 2024, the Company sold 4,366 shares of its common stock generating net proceeds of \$54. As of March 31, 2025, the Sales Agreement’s available capacity is \$44,191.

As of the filing of this Form 10-Q, the Company is subject to the General Instruction I.B.6 to Form S-3, known as the “baby shelf rules,” which limit the number of securities it can sell under the Sales Agreement and its registration statement on Form S-3.

Preferred Stock

On February 13, 2025, the Company entered into a Securities Purchase Agreement (the “Purchase Agreement”) with certain investors (the “Purchasers”), pursuant to which the Company sold, in a private placement (the “Offering”), an aggregate of 3,300 shares of the Company’s Series C Convertible Preferred Stock, par value \$0.0001 per share (the “Preferred Stock”), initially convertible into up to 5,631,404 shares of the Company’s common stock with a stated value of \$1,000 per share (the “Stated Value”), and warrants (the “Warrants”) to purchase up to an aggregate of 200% of the shares of Common Stock into which the shares of Preferred Stock are initially convertible, or 11,262,808 shares of Common Stock, for an offering price of \$1,000 per share of Preferred Stock and accompanying Warrants in two equal tranches, the second of which closed on April 8, 2025.

Pursuant to the Purchase Agreement, on February 13, 2025, the Company issued and sold in an initial closing of the Offering (the “Initial Closing”), 1,650 shares of Preferred Stock, initially convertible into up to 2,815,702 shares of Common Stock, and accompanying Warrants, initially exercisable for up to 5,631,404 shares of Common Stock, for gross proceeds to the Company of \$1.65 million. On April 4, 2025, the Company obtained shareholder approval (“Shareholder Approval”) for the issuance of the Preferred Stock and Warrants, as required by the rules and regulations of NYSE American LLC (the “NYSE”), including Section 713 of the NYSE American Company Guide, and issued and sold, in a second closing of the Offering (the “Second Closing”), an additional 1,650 shares of Preferred Stock, initially convertible into up to 2,815,702 shares of Common Stock, and accompanying Warrants, initially exercisable for up to 5,631,404 shares of Common Stock, for gross proceeds to the Company of \$1.65 million.

Under the terms of the Purchase Agreement, the Company is prohibited, subject to certain exceptions, from issuing, entering into any agreement to issue, or announcing the issuance or proposed issuance of any shares of common stock or common stock equivalents until November 2025.

Warrants

On April 5, 2024, the Company issued warrants to purchase 666,667 shares of the Company’s common stock at an exercise price of \$17.50 per share.

On February 13, 2025, the Company issued the Warrants to purchase 5,631,404 shares of the Company’s common stock under the Purchase Agreement. The exercise price is \$0.64 per share and is subject to adjustments in accordance with the terms of the Warrants agreement. The Warrants expire five years from the Shareholder Approval date. The Warrants include anti-dilution protection provisions. The Company determined that the Warrants do not satisfy the conditions to be accounted for as equity instruments as the Warrants are not considered indexed to the Company’s own stock. The Company classified the Warrants as a liability upon issuance. The Warrants are recorded at fair value with changes in fair value recognized in the Company’s condensed consolidated statements of operations and comprehensive loss until either exercised or expired. The valuation of the warrants is considered under Level 3 of the fair value hierarchy due to the need to use assumptions in the valuation that are both significant to the fair value measurement and unobservable (see Note 5).

The Company did not have any warrants outstanding for the three months ended March 31, 2024. The following table summarizes the changes in warrants outstanding for the three months ended March 31, 2025:

	Shares
Outstanding at December 31, 2024	666,667
Issued	5,631,404
Exercised	—
Tendered	—
Expired	—
Outstanding at March 31, 2025	6,298,071

Basic and diluted net loss per common share

The Company had two classes of stock outstanding during the three months ended March 31, 2025, common stock and preferred stock, and had only common stock outstanding during the three months ended March 31, 2024. The Company computes net loss per share using the two-class method, as the Series C Preferred Stock participates in distributions with the Company’s common stock. The two-class method of computing net loss per share is an earnings allocation formula that determines net loss for common stock and any participating securities according to dividends declared and participation rights in undistributed earnings.

Under the two-class method, basic net loss per share attributable to common stockholders is computed by dividing the net income attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share attributable to common stockholders is computed using the more dilutive of (1) the two-class method or (2) the if-converted method.

During the three months ended March 31, 2025 and 2024, diluted loss per common share is the same as basic loss per common share because, as the Company incurred a net loss during each period presented, the potentially dilutive securities from the assumed exercise of all outstanding stock options, warrants and preferred stock, would have an anti-dilutive effect. The following outstanding shares of potentially dilutive securities were excluded from the computation of diluted net loss per share because including them would have been anti-dilutive as of March 31, 2025 and 2024:

	As of March 31,	
	2025	2024
Stock options	483,489	920,631
Convertible preferred stock upon conversion	2,815,702	—
Warrants	6,298,071	—
Total	9,597,262	920,631

Note 10 – Stock-based Compensation

The Company's Amended and Restated 2013 Equity Compensation Plan (the "Plan"), which expired on May 7, 2024, provided for the granting of incentive stock options, nonqualified stock options, restricted stock units, performance units, and stock purchase rights. There were no significant modifications to the Plan during the three month periods ended March 31, 2024. The term of the Plan was for 10 years. The Company intends to adopt a new equity compensation plan at its 2025 Annual Meeting, pending shareholder approval.

As of March 31, 2025, there were 577,104 awards, including both restricted stock grants and option grants, issued and exercised under the Plan and no remaining shares available for grant under the Plan.

The Company recognized stock-based compensation expense (options and restricted share grants) in its condensed consolidated statements of operations as follows:

	Three Months Ended March 31,	
	2025	2024
Research and Development	\$ 85	\$ 415
General and Administrative	230	580
Total	\$ 315	\$ 995

As of March 31, 2025, total compensation costs related to unvested awards not yet recognized was \$1,385 and the weighted-average periods over which the awards are expected to be recognized was 1.9 years.

Stock Options

The following table summarizes the activity for Company' stock options for the three months ended March 31, 2025:

	Stock Options
Outstanding at December 31, 2024	687,356
Granted	—
Exercised	—
Forfeited	(3,101)
Expired	(200,766)
Outstanding at March 31, 2025	483,489

Note 11 – Subsequent Events

On April 8, 2025, pursuant to the Purchase Agreement, the Company sold to the Purchasers, in the second and final closing of the Offering (the "Second Closing"), 1,650 shares of Preferred Stock, initially convertible into up to 2,815,702 shares of Common Stock, and accompanying Warrants, initially exercisable for up to 5,631,404 shares of Common Stock, for gross proceeds to the Company of \$1.65 million. The shares of Preferred Stock and Warrants issued in the Second Closing were sold without registration under the Securities Act of 1933, as amended (the "Securities Act"), or state securities laws in reliance on the exemption provided by Section 4(a)(2) of the Securities Act and/or Regulation D promulgated thereunder and in reliance on similar exemptions under applicable state laws.

The Company registered the shares of Common Stock underlying the Preferred Stock and Warrants on a Form S-3 Registration Statement, filed with the Securities and Exchange Commission on April 22, 2025, and declared effective on April 29, 2025.

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

The following discussion and analysis of our financial condition and results of operations should be read together with our financial statements and the related notes and the other financial information included elsewhere in this Quarterly Report on Form 10-Q. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed below and elsewhere in this Quarterly Report on Form 10-Q, in our Annual Report on Form 10-K for the year ended December 31, 2024 and in other reports we file with the Securities and Exchange Commission, particularly those under "Risk Factors." Dollars in tabular format are presented in thousands, except per share data, or as otherwise indicated.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report on Form 10-Q contains forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 under Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, assumptions, estimates, intentions and future performance, and involve known and unknown risks, uncertainties and other factors, which may be beyond our control, and which may cause our actual results, performance or achievements to be materially different from future results, performance or achievements expressed or implied by such forward-looking statements. All statements other than statements of historical fact are statements that could be forward-looking statements. You can identify these forward-looking statements through our use of words such as "may," "can," "anticipate," "assume," "should," "indicate," "would," "believe," "contemplate," "expect," "seek," "estimate," "continue," "plan," "point to," "project," "predict," "could," "intend," "target," "potential" and other similar words and expressions of the future.

There are a number of important factors that could cause the actual results to differ materially from those expressed in any forward-looking statement made by us. These factors include, but are not limited to:

- our ability to complete one or more strategic transactions that will maximize our assets or otherwise provide value to stockholders;
- our ability to raise capital when needed;
- our ability to maintain or protect the validity of our patents and other intellectual property; and
- the factors listed under the heading "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2024, elsewhere in this report and other reports that we file with the Securities and Exchange Commission.

All forward-looking statements are expressly qualified in their entirety by this cautionary notice. You are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date of this report or the date of the document incorporated by reference into this report. We have no obligation, and expressly disclaim any obligation, to update, revise or correct any of the forward-looking statements, whether as a result of new information, future events or otherwise. We have expressed our expectations, beliefs and projections in good faith, and we believe they have a reasonable basis. However, we cannot assure you that our expectations, beliefs or projections will result or be achieved or accomplished.

Overview

We are a clinical-stage biopharmaceutical company focused on delivering groundbreaking therapies using our lipid nanocrystal (LNC) platform delivery technology (LNC Platform).

Key elements of our strategy now include:

- Securing one or more partners to monetize the value of MAT2203 in the short term and raise additional non-dilutive capital through the licensing or sale of our lead LNC Platform product candidate. A partnership would likely seek to advance MAT2203 into Phase 3 development as quickly as possible, which could position a partner to commercialize MAT2203 upon approval and which could bring additional longer-term value to the Company and its shareholders.
- Conserving our cash resources while identifying and evaluating other strategic options for the Company, which could include the in-license of one or more assets or seeking a merger partner for the Company.

For the three month periods ended March 31, 2025 and 2024, our net loss was \$1,656 and \$5,824, respectively. We have incurred losses for each period from our inception and expect to incur additional losses for the foreseeable future. We will seek to fund our operations through public or private equity offerings, debt financing, government or other third-party funding, collaborations and licensing arrangements. Adequate additional financing may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed would impact our going concern and would have a negative impact on our financial condition and our ability to pursue our business strategy and continue as a going concern. We will need to generate significant revenues to achieve profitability, and we may never do so.

Financial Operations Overview

Research and Development Expenses

Research and development expenses consist of costs incurred for the development of product candidate MAT2203 and advancement of our LNC platform, which include:

- the cost of acquiring, developing, and manufacturing pre-clinical and human clinical trial materials;
- costs for consultants and contractors associated with Chemistry and Manufacturing Controls (CMC), pre-clinical and clinical activities and regulatory operations;
- expenses incurred under agreements with contract research organizations, or CROs, including the NIH, that conduct our pre-clinical or clinical trials; and
- employee-related expenses, including salaries and stock-based compensation expense for those employees involved in the research and development process.

Research and development activities are central to our business model. We expect our research and development expenses to increase over time because product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage human trials. However, we anticipate that our research and development expenses during 2025 will be lower compared with expenses incurred during 2024 until such time, if at all, as we are able to secure additional funding to support initiation of our Phase 3 registration trial for MAT2203 and advancement of our LNC platform delivery technology.

General and Administrative Expenses

General and administrative expenses for the three months ended March 31, 2025 and 2024 were \$1,861 and \$2,456, respectively. General and administrative expenses consist principally of salaries and related costs for personnel in executive and finance functions. Other general and administrative expenses include facility costs, insurance, investor relations expenses, professional fees for legal, patent review, consulting and accounting/audit services. We anticipate that our general and administrative expenses during 2025 will decrease slightly compared to expenses incurred during 2024 as a result of cost-cutting measures implemented to conserve cash.

Change in fair value of warrant liability

On February 13, 2025, the Company closed a private placement investment with certain investors in which the investors received shares of Series C Preferred Stock and warrants to purchase shares the Company's common stock. The warrants were classified as a liability upon issuance with the fair value estimated using a Monte Carlo simulation model. Future changes in fair value will be recognized in other (expense)/income, net at each reporting period until the warrants are either exercised or expired.

A gain of \$294 was recognized for the three months ended March 31, 2025, representing the change in fair value of the warrant liability between the issuance date of February 13, 2025 and March 31, 2025.

Other (expense)/income, net

Other (expense)/income, net for the three months ended March 31, 2025 and 2024 were (\$4) and \$78, respectively. Other (expense)/income, net decreased compared to the prior period primarily due to recording issuance costs of \$148 in connection with the Company's private placement of Series C Preferred Stock and warrants.

Application of Critical Accounting Policies and Accounting Estimates

A critical accounting policy is one that is both important to the portrayal of our financial condition and results of operations and requires management's most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain.

For a description of our significant accounting policies, refer to "Note 3 – Summary of Significant Accounting Policies" in our 2024 Form 10-K. Of these policies, the following are considered critical to an understanding of our Unaudited Condensed Consolidated Financial Statements as they require the application of the most difficult, subjective and complex judgments: (i) Research and development expenses, (ii) Goodwill and other intangible assets, and (iii) Warrants.

Warrants

We account for warrants as either equity-classified or liability-classified instruments based on an assessment of the warrant's specific terms and applicable authoritative guidance in ASC 480, Distinguishing Liabilities from Equity and ASC 815, Derivatives and Hedging. Warrants classified as equity are recorded at fair value as of the date of issuance on our condensed consolidated balance sheets and no further adjustments to their valuation are made. Warrants that require separate accounting as liabilities are recorded on our condensed consolidated balance sheets at their fair value on the date of issuance and are revalued on each subsequent balance sheet date until such instruments are exercised or expire, with any changes in the fair value between reporting periods recorded on the condensed consolidated statement of operations. The assessment of whether the warrants are accounted for as equity-classified or liability-classified instruments is re-evaluated on a periodic basis.

Recent Accounting Pronouncements

Refer to "Note 3 – Summary of Significant Accounting Policies" in the Notes to Unaudited Condensed Consolidated Financial Statements for a discussion of recently adopted accounting pronouncements and their expected impact on our financial positions and results of operations.

Current Operating Trends

Our current R&D efforts are focused on advancing our lead LNC product candidate, MAT2203. Our R&D expenses consist of fees paid to consultants for work related to clinical trial design and regulatory activities, fees paid to providers for conducting various clinical studies as well as for the analysis of the results of such studies, and for other medical research addressing the potential efficacy and safety of our drugs. We believe that significant investment in product development is a competitive necessity, and we are seeking a partner to assist us in continuing to make these investments to be in a position to realize the potential of our product candidates and proprietary technologies.

We expect that most of our R&D expenses in the near-term, if any, will be incurred in support of MAT2203 and positioning that drug for a partnership with a well-funded and experienced third party biotech or pharmaceutical company.

Results of Operations

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

The following tables summarize our revenues and operating expenses for the periods presented:

	Three Months Ended March 31,	
	2025	2024
Expenses:		
Research and development	\$ 85	\$ 3,446
General and administrative	1,861	2,456
Operating Expenses	<u>\$ 1,946</u>	<u>\$ 5,902</u>

Research and Development expenses. Research and Development (R&D) expense for the three months ended March 31, 2025 and 2024 were \$85 and \$3,446, respectively. The decrease in R&D expenses were primarily attributable to the decrease in clinical trial consulting costs related to the pause of our MAT2203 development program and in headcount costs resulting from our reduction in force.

General and Administrative expenses. General and Administrative (G&A) expense for the three months ended March 31, 2025 and 2024 was \$1,861 and \$2,456, respectively. The decrease in G&A expenses were primarily attributable to lower stock based compensation expense and decreased headcount partially offset by increased legal and consulting fees.

Liquidity and capital resources

Sources of Liquidity

We have funded our operations since inception primarily through private placements of our preferred stock and our common stock and common stock warrants. As of March 31, 2025, we have raised a total of \$168,557 in gross proceeds and \$154,945, net, from sales of our equity securities.

As of March 31, 2025, we had cash and cash equivalents, excluding restricted cash, totaling \$6,924.

2025 Private Placement

On February 13, 2025, we entered into a Securities Purchase Agreement (the “Purchase Agreement”) with certain investors (the “Purchasers”), pursuant to which we agreed to issue and sell, in a private placement (the “Offering”), an aggregate of 3,300 shares of our Series C Convertible Preferred Stock, par value \$0.0001 per share (the “Preferred Stock”), initially convertible into up to 5,631,404 shares of our common stock, par value \$0.0001 per share (the “Common Stock”), with a stated value of \$1,000 per share (the “Stated Value”), and warrants (the “Warrants”) to purchase up to an aggregate of 200% of the shares of Common Stock into which the shares of Preferred Stock are initially convertible, or 11,262,808 shares of Common Stock, for an offering price of \$1,000 per share of Preferred Stock and accompanying Warrants. The Purchase Agreement contains customary representations, warranties and agreements by us and customary conditions to closing.

Pursuant to the Purchase Agreement, on February 13, 2025, we issued and sold in an initial closing of the Offering (the “Initial Closing”), 1,650 shares of Preferred Stock, initially convertible into up to 2,815,702 shares of Common Stock, and accompanying Warrants, initially exercisable for up to 5,631,404 shares of Common Stock, for gross proceeds of \$1.65 million. On April 4, 2025, we obtained shareholder approval (“Shareholder Approval”) for the issuance of the Preferred Stock and Warrants, as required by the rules and regulations of NYSE American LLC (the “NYSE”), including Section 713 of the NYSE American Company Guide, and issued and sold, in a second closing of the Offering (the “Second Closing”), an additional 1,650 shares of Preferred Stock, initially convertible into up to 2,815,702 shares of Common Stock, and accompanying Warrants, initially exercisable for up to 5,631,404 shares of Common Stock, for gross proceeds of \$1.65 million.

Under the terms of the Securities Purchase Agreement, we are prohibited, subject to certain exceptions, from issuing, entering into any agreement to issue, or announcing the issuance or proposed issuance of any shares of common stock or common stock equivalents until November 2025.

2024 Registered Direct Offering

On April 5, 2024, the Company closed a registered direct offering of 666,667 shares of its common stock and warrants to purchase up to an aggregate of 666,667 additional shares of common stock, at a combined purchase price of \$15.00 per share and accompanying warrant. The Company generated gross proceeds of approximately \$10,000 and net proceeds of approximately \$9,125, after deducting underwriting discounts and commissions and other offering expenses.

2020 At-The-Market Sales Agreement

On July 2, 2020, we entered into an At-The-Market Sales Agreement (the “Sales Agreement”) with BTIG, LLC (“BTIG”), pursuant to which we may offer and sell, from time to time, through BTIG, as sales agent and/or principal, shares of our common stock having an aggregate offering price of up to \$50 million, subject to certain limitations on the amount of common stock that may be offered and sold by us set forth in the Sales Agreement. BTIG will be paid a 3% commission on the gross proceeds from each sale. We may terminate the Sales Agreement at any time; BTIG may terminate the Sales Agreement in certain limited circumstances. The Company did not sell any shares under the sales agreement during the three months ended March 31, 2025. During the three months ended March 31, 2024, the Company sold 4 shares of its common stock generating net proceeds of \$54. As of March 31, 2025, the Sales Agreement’s available capacity is \$44,191.

Cash Flows

The following table sets forth the primary sources and uses of cash, cash equivalents and restricted cash for each of the periods set forth below:

	Three Months Ended March 31,	
	2025	2024
Cash used in operating activities	\$ (2,007)	\$ (5,769)
Cash provided by investing activities	—	2,000
Cash provided by financing activities	1,647	53
Net decrease in cash and cash equivalents and restricted cash	<u>\$ (360)</u>	<u>\$ (3,716)</u>

Operating Activities

Net cash used in operating activities was \$2,007 and \$5,769 for the three month periods ended March 31, 2025 and 2024, respectively. Net losses of \$1,656 and \$5,824 for the three month periods ended March 31, 2025 and 2024, respectively, were partially offset by working capital adjustments due to the timing of receipts and payments in the ordinary course of business, adjustments for non-cash stock based compensation expense and change in fair value of the warrant liability.

Investing Activities

Net cash provided by investing activities was \$0 and \$2,000 for the three month periods ended March 31, 2025 and 2024, respectively. The decrease of cash provided by investing activities was due to a \$2,000 decrease in maturities of marketable debt securities.

Financing Activities

Net cash provided by financing activities was \$1,647 and \$53 for the three month periods ended March 31, 2025 and 2024, respectively. The increase in cash provided by financing activities is primarily due to the net proceeds from the sale of our preferred stock of \$1,648 during the three months ended March 31, 2025, compared to net proceeds from the sale of our common stock of \$54 under the ATM with BTIG, LLC during the three months ended March 31, 2024.

Funding Requirements and Other Liquidity Matters

We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. We anticipate that our expenses will increase substantially if and as we:

- conduct further preclinical and clinical studies of MAT2203, our lead product candidate, even if such studies are primarily financed with non-dilutive funding from the NIH;
- seek to discover and develop additional product candidates;
- seek regulatory approvals for any product candidates that successfully complete clinical trials;
- require the manufacture of larger quantities of product candidates for clinical development and potentially commercialization;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, quality control and scientific personnel; and
- add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts and personnel and infrastructure necessary to help us comply with our obligations as a public company.

We do not believe that our existing cash and cash equivalents will be sufficient to fund our operating expenses and capital expenditures requirements beyond the next twelve months from the filing date of this Quarterly Report. As a result, substantial doubt exists about the Company's ability to continue as a going concern.

Until such time, if ever, that we can generate revenues sufficient to achieve profitability, we expect to finance our cash needs through a combination of private and public equity offerings, debt financings, government or other third-party funding, collaborations, and licensing arrangements. To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, the ownership interest of our stockholders may be materially diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights of our common stockholders. Debt financing and preferred equity financing, if available, would result in increased fixed payment obligations and may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends, that could adversely impact our ability to conduct our business. Securing additional financing could require a substantial amount of time and attention from our management and may divert a disproportionate amount of their attention away from day-to-day activities, which may adversely affect our management's ability to secure one or more partners to monetize the value of MAT2203 or future product candidates. Moreover, under the terms of a recent financing, we are prohibited, subject to certain exceptions, from issuing, entering into any agreement to issue, or announcing the issuance or proposed issuance of any shares of common stock or common stock equivalents until November 2025.

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 technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us.

Our financial condition and results of operations may also be impacted by other factors we may not be able to control, such as global supply chain disruptions, global trade disputes and/or political instability. Increases in interest rates, especially if coupled with reduced government spending and volatility in financial markets, may have the effect of further increasing economic uncertainty and heightening these risks. Additionally, rising inflation rates may affect us by increasing operating expenses, such as employee-related costs and clinical trial expenses, negatively impacting our results of operations.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under SEC rules, such as relationships with unconsolidated entities or financial partnerships, which are often referred to as structured finance or special purpose entities, established for the purpose of facilitating financing transactions that are not required to be reflected on our balance sheets.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Not applicable.

Item 4. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures.

Disclosure Controls and Procedures:

As of March 31, 2025, under the supervision and with the participation of our principal executive officer and principal financial officer we have evaluated, the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Based on that evaluation, our principal executive officer and principal financial officer concluded that because remediation of the deficiency in internal control over financial reporting described in our Annual Report on Form 10-K for the year ended December 31, 2024 has not been completed as described below, our disclosure controls and procedures were not effective at the reasonable assurance level as of March 31, 2025.

Our disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed in the reports that we filed or submitted under the Exchange Act is recorded, processed, summarized and reported within time periods specified by the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to our management, including principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting:

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, our principal executive officer and principal financial officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the consolidated financial statements.

Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, any projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with policies and procedures may deteriorate.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the annual or interim consolidated financial statements will not be prevented or detected on a timely basis.

As previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2024, an evaluation was conducted under the supervision and with the participation of management, including our CEO and CFO, on the effectiveness of the Company's internal control over financial reporting as of December 31, 2024 based on criteria related to internal control over financial reporting described in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2013 Framework). Based on this evaluation, management determined that because of the material weaknesses described below, the Company's internal control over financial reporting was not effective as of December 31, 2024.

We did not maintain an effective internal control environment to ensure the processing of and reporting of non-routine transactions are complete, accurate and timely, including the Company's indefinite-lived assets impairment assessment.

The material weakness identified above could result in a misstatement to the aforementioned asset balances and disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected on a timely basis.

Remediation Plan:

Management has initiated a remediation plan to address the control deficiency that led to the material weakness. The remediation plan includes, but is not limited to, engagement of additional external accounting resources to assist with the preparation and review of the Company's non-routine transactions.

Changes in Internal Control Over Financial Reporting

Except for changes being implemented by the Company to address the material weakness identified above, there were no changes in our internal control over financial reporting during the first quarter of 2025 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1. LEGAL PROCEEDINGS.

None.

Item 1A. RISK FACTORS.

Except as set forth below, there were no material changes from the risk factors set forth under Part I, Item 1A., “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024. You should carefully consider the risk factors contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 in addition to the other information set forth in this report which could materially affect our business, financial condition or future results. The risks and uncertainties described in this report and in our Annual Report on Form 10-K for the year ended December 31, 2024, as well as other reports and statements that we file with the SEC, are not the only risks and uncertainties facing us. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also have a material adverse effect on our financial position, results of operations or cash flows.

Item 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS.

On February 13, 2025 and April 8, 2025, pursuant to the Purchase Agreement, the Company sold to the Purchasers, in two equal tranches, an aggregate of 3,300 shares of Preferred Stock, initially convertible into up to 5,631,404 shares of Common Stock, and accompanying Warrants, initially exercisable for up to 11,262,808 shares of Common Stock, for gross proceeds to the Company of an aggregate of \$3.3 million. The shares of Preferred Stock and Warrants were sold without registration under the Securities Act, or state securities laws in reliance on the exemption provided by Section 4(a)(2) of the Securities Act and/or Regulation D promulgated thereunder and in reliance on similar exemptions under applicable state laws. The Company registered the shares of Common Stock underlying the Preferred Stock and Warrants on a Form S-3 Registration Statement, filed with the Securities and Exchange Commission on April 22, 2025, and declared effective on April 29, 2025.

Item 3. DEFAULTS UPON SENIOR SECURITIES.

None.

Item 4. MINE SAFETY DISCLOSURES.

Not applicable.

Item 5. OTHER INFORMATION.

Rule 10b5-1 Trading Arrangements and Non-Rule 10b5-1 Trading Arrangements

During the fiscal quarter ended March 31, 2025, none of our officers or directors, as those terms are defined in Rule 16a-1(f), adopted or terminated a “Rule 10b5-1 trading arrangement” or a “non-Rule 10b5-1 trading arrangement,” as those terms are defined in Item 408 of Regulation S-K.

Item 6. EXHIBITS.

See the Exhibit Index following the signature page to this Quarterly Report on Form 10-Q for a list of exhibits filed or furnished with this report, which Exhibit Index is incorporated herein by reference.

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.

MATINAS BIOPHARMA HOLDINGS, INC.

BY:

Dated: May 15, 2025

/s/ Jerome D. Jabbour

Jerome D. Jabbour

Chief Executive Officer (Principal Executive Officer)

Dated: May 15, 2025

/s/ Keith A. Kucinski

Keith A. Kucinski

Chief Financial Officer

(Principal Financial and Accounting Officer)

EXHIBIT INDEX

3.1	<u>Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).</u>
3.2	<u>Bylaws (incorporated by reference to Exhibit 3.2 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).</u>
3.3	<u>Certificate of Amendment, dated October 29, 2015 to Certificate of Incorporation, (incorporated herein by reference to the Company's Current Report on Form 8-K filed with the SEC on November 5, 2015).</u>
3.4	<u>Certificate of Amendment of Certificate of Incorporation, dated August 30, 2024 (filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on September 3, 2024 and incorporated herein by reference).</u>
3.5	<u>Form of Certificate of Designation of Series C Convertible Preferred Stock (filed as an exhibit to the Current Report on Form 8-K filed with the Commission on February 13, 2025 and incorporated herein by reference).</u>
4.1	<u>Common Stock Purchase Warrant, dated April 5, 2024 (incorporated herein by reference to the Company's Current Report on Form 8-K filed with the SEC on April 5, 2024).</u>
4.2	<u>Description of Securities (filed as an exhibit to the Annual Report on Form 10-K filed with the Commission on April 15, 2025 and incorporated herein by reference).</u>
4.3	<u>Form of Common Stock Purchase Warrant (filed as an exhibit to the Current Report on Form 8-K filed with the Commission on April 5, 2024 and incorporated herein by reference).</u>
4.4	<u>Form of Warrant (filed as an exhibit to the Current Report on Form 8-K filed with the Commission on February 13, 2025 and incorporated herein by reference).</u>
10.1	<u>Form of Securities Purchase Agreement (filed as an exhibit to the Current Report on Form 8-K, filed with the Commission on February 13, 2025 and incorporated herein).</u>
*31.1	<u>Certification of Chief Executive Officer</u>
*31.2	<u>Certification of Chief Financial Officer</u>
*32.1	<u>Section 1350 Certifications</u>
*101.1	Inline XBRL Instance Document.
*101.2	Inline XBRL Taxonomy Extension Schema Document.
*101.3	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
*101.4	Inline XBRL Taxonomy Extension Definition Linkbase Document.
*101.5	Inline XBRL Taxonomy Extension Label Linkbase Document.
*101.6	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith.

† Indicates a management contract or compensation plan, contract or arrangement. Certain portions of this exhibit, that are not material and would likely cause competitive harm to the registrant if publicly disclosed, have been redacted pursuant to Item 601(b)(10) of Regulation S-K.

CERTIFICATION

I, Jerome D. Jabbour, certify that:

1. I have reviewed this report on Form 10-Q of Matinas BioPharma Holdings, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer 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 15, 2025

By: /s/ Jerome D. Jabbour

Name: Jerome D. Jabbour

Title: Chief Executive Officer

CERTIFICATION

I, Keith A. Kucinski, certify that:

1. I have reviewed this report on Form 10-Q of Matinas BioPharma Holdings, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer 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 15, 2025

By: /s/ Keith A. Kucinski

Name: Keith A. Kucinski

Title: Chief Financial Officer

SECTION 1350 CERTIFICATIONS

Pursuant to 18 U.S.C. §1350 as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, the undersigned officers of Matinas BioPharma Holdings, Inc. (the “Company”) hereby certify that to their knowledge and in their respective capacities that the Company’s quarterly report on Form 10-Q to which this certification is attached (the “Report”), fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 15, 2025

By: /s/ Jerome D. Jabbour
Name: Jerome D. Jabbour
Title: Chief Executive Officer

Date: May 15, 2025

By: /s/ Keith A. Kucinski
Name: Keith A. Kucinski
Title: Chief Financial Officer

This certification shall not be deemed “filed” for any purpose, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Exchange Act. A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to Matinas BioPharma Holdings, Inc. and will be retained by Matinas BioPharma Holdings, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.
