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 June 30, 2024

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	**No. 46-3011414**
(State or other jurisdiction of incorporation or organization)	**(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	□	Accelerated filer	□
Non-accelerated Filer	☒	Smaller reporting company	☒
		Emerging growth company	□

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

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

As of August 9, 2024, there were 250,816,164 shares of the registrant's common stock, $0.0001 par value, outstanding.

MATINAS BIOPHARMA HOLDINGS, INC.
Form 10-Q
Quarter Ended June 30, 2024

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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)

	June 30, 2024 (Unaudited)	December 31, 2023 (Audited)
ASSETS:		
Current assets:		
Cash and cash equivalents	$ 4,216	$ 4,787
Marketable debt securities	10,097	8,969
Restricted cash – security deposit	50	50
Prepaid expenses and other current assets	922	1,737
Total current assets	15,285	15,543
Non-current assets:		
Leasehold improvements and equipment – net	1,739	1,923
Operating lease right-of-use assets – net	2,770	3,064
Finance lease right-of-use assets – net	18	21
In-process research and development	3,017	3,017
Goodwill	1,336	1,336
Restricted cash – security deposit	200	200
Total non-current assets	9,080	9,561
Total assets	$ 24,365	$ 25,104
LIABILITIES AND STOCKHOLDERS' EQUITY:		
Current liabilities:		
Accounts payable	$ 238	$ 514
Accrued expenses	1,442	1,447
Operating lease liabilities – current	707	656
Financing lease liabilities – current	5	5
Total current liabilities	2,392	2,622
Non-current liabilities:		
Deferred tax liability	341	341
Operating lease liabilities – net of current portion	2,514	2,877
Financing lease liabilities – net of current portion	15	18
Total non-current liabilities	2,870	3,236
Total liabilities	5,262	5,858
Stockholders' equity:		
Common stock par value $0.0001 per share, 500,000,000 shares authorized at June 30, 2024 and December 31, 2023; 250,816,164 and 217,264,526 issued and outstanding as of June 30, 2024 and December 31, 2023, respectively	25	22
Additional paid-in capital	206,245	195,018
Accumulated deficit	(187,116)	(175,573)
Accumulated other comprehensive loss	(51)	(221)
Total stockholders' equity	19,103	19,246
Total liabilities and stockholders' equity	$ 24,365	$ 25,104

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 June 30,		Six Months Ended June 30,	
	2024	**2023**	**2024**	**2023**
Revenue:				
Contract revenue	$ —	$ —	$ —	$ 1,096
Costs and expenses:				
Research and development	3,371	3,559	6,817	7,530
General and administrative	2,468	2,600	4,925	5,311
Total costs and expenses	5,839	6,159	11,742	12,841
Loss from operations	(5,839)	(6,159)	(11,742)	(11,745)
Other income, net	120	99	199	172
Net loss	$ (5,719)	$ (6,060)	$ (11,543)	$ (11,573)
Net loss per share – basic and diluted	$ (0.02)	$ (0.03)	$ (0.05)	$ (0.05)
Weighted average common shares outstanding:				
Basic and diluted	249,350,963	217,264,526	233,354,524	217,264,526
Other comprehensive gain, net of tax				
Unrealized gain on securities available-for-sale	83	81	170	310
Other comprehensive gain, net of tax	83	81	170	310
Comprehensive loss	$ (5,636)	$ (5,979)	$ (11,373)	$ (11,263)

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

	Common Stock		Additional Paid - in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Capital	Deficit	(Loss)/Income	Equity
Balance, December 31, 2023	217,264,526	$ 22	$ 195,018	$ (175,573)	$ (221)	$ 19,246
Stock-based compensation	—	—	1,986	—	—	1,986
Issuance of common stock and warrants in public offering, net of stock issuance cost ($812)	33,551,638	3	9,241	—	—	9,244
Other comprehensive income	—	—	—	—	170	170
Net loss	—	—	—	(11,543)	—	(11,543)
Balance, June 30, 2024	250,816,164	$ 25	$ 206,245	$ (187,116)	$ (51)	$ 19,103

	Common Stock		Additional Paid - in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Capital	Deficit	(Loss)/Income	Equity
Balance, March 31, 2024	217,482,830	$ 22	$ 196,067	$ (181,397)	$ (134)	$ 14,558
Stock-based compensation	—	—	991	—	—	991
Issuance of common stock and warrants in public offering, net of stock issuance cost ($810)	33,333,334	3	9,187	—	—	9,190
Other comprehensive income	—	—	—	—	83	83
Net loss	—	—	—	(5,719)	—	(5,719)
Balance, June 30, 2024	250,816,164	$ 25	$ 206,245	$ (187,116)	$ (51)	$ 19,103

	Common Stock		Additional Paid - in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Capital	Deficit	(Loss)/Income	Equity
Balance, December 31, 2022	217,264,526	$ 22	$ 190,070	$ (152,631)	$ (824)	$ 36,637
Stock-based compensation	-	-	2,480	-	-	2,480
Other comprehensive income	-	-	-	-	310	310
Net loss	-	-	-	(11,573)	-	(11,573)
Balance, June 30, 2023	217,264,526	$ 22	$ 192,550	$ (164,204)	$ (514)	$ 27,854

	Common Stock		Additional Paid - in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Capital	Deficit	(Loss)/Income	Equity
Balance, March 31, 2023	217,264,526	$ 22	$ 191,342	$ (158,144)	$ (595)	$ 32,625
Stock-based compensation	-	-	1,208	-	-	1,208
Other comprehensive income	-	-	-	-	81	81
Net loss	-	-	-	(6,060)	-	(6,060)
Balance, June 30, 2023	217,264,526	$ 22	$ 192,550	$ (164,204)	$ (514)	$ 27,854

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

	Six Months Ended June 30,	
	2024	**2023**
Cash flows from operating activities:		
Net loss	$ (11,543)	$ (11,573)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	184	190
Stock based compensation expense	1,986	2,480
Amortization of operating lease right-of-use assets	294	268
Amortization of finance lease right-of-use assets	3	5
Amortization of bond discount	(19)	73
Changes in operating assets and liabilities:		
Operating lease liabilities	(312)	(266)
Prepaid expenses and other current assets	814	4,282
Accounts payable	(276)	(13)
Accrued expenses and other liabilities	(6)	(1,726)
Net cash used in operating activities	(8,875)	(6,280)
Cash flows from investing activities:		
Purchase of marketable debt securities	(7,938)	—
Proceeds from maturities of marketable debt securities	7,000	9,400
Purchases of leasehold improvements and equipment	—	(202)
Net cash (used in)/provided by investing activities	(938)	9,198
Cash flows from financing activities:		
Net proceeds from public offerings of common stock and warrants	9,244	—
Payments of finance lease liability – principal	(2)	(5)
Net cash provided by/(used in) financing activities	9,242	(5)
Net (decrease)/increase in cash, cash equivalents and restricted cash	(571)	2,913
Cash, cash equivalents and restricted cash at beginning of period	5,037	7,080
Cash, cash equivalents and restricted cash at end of period	$ 4,466	$ 9,993
Supplemental non-cash financing and investing activities:		
Unrealized gain on marketable debt securities	$ 170	$ 310

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

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 with a focus on identifying and developing novel pharmaceutical products.

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 June 30, 2024, the Company had an accumulated deficit of $187,116. The Company's net loss was $11,543 for the six months ended June 30, 2024.

The Company has been engaged in developing its lipid nanocrystal ("LNC") platform delivery technology and a pipeline of associated product candidates, including MAT2203, since 2011. To date, the Company has not obtained regulatory approval for any of its product candidates nor generated any revenue from product sales, and the Company expects to incur significant expenses to complete development of its product candidates. The Company may never be able to obtain regulatory approval for the marketing of any of its product candidates in any indication in the United States or internationally and there can be no assurance that the Company will generate revenues or ever achieve profitability.

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. The Company also expects that its research and development expenses will continue to increase as it moves forward with additional clinical studies for its current product candidates and development of additional product candidates. 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 June 30, 2024, the Company had cash and cash equivalents of $4,216, marketable debt securities of $10,097 and restricted cash of $250. The Company does not believe the cash, cash equivalents and marketable debt securities 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 control over its operating expenses, anticipated proceeds from future sales of common stock through its At-The-Market Sales Agreement ("ATM") 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 ATM may not be viable due to market conditions and new financing may not be available on acceptable terms, or at all. 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.

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, 2023.

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.

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 June 30, 2024 and December 31, 2023 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 June 30, 2024, December 31, 2023, June 30, 2023 and December 31, 2022:

	June 30, 2024	December 31, 2023	June 30, 2023	December 31, 2022
Cash and cash equivalents	$ 4,216	$ 4,787	$ 9,743	$ 6,830
Restricted cash included in current/non-current assets	250	250	250	250
Cash, cash equivalents and restricted cash in the statement of cash flows	$ 4,466	$ 5,037	$ 9,993	$ 7,080

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 and six months ended June 30, 2024 and 2023. For the three and six months ended June 30, 2024, the Company recorded unrealized gains of $83 and $170, respectively. For the three and six months ended June 30, 2023, the Company recorded unrealized gains of $81 and $310, respectively. As of June 30, 2024 and December 31, 2023, the Company had net accumulated unrealized losses of $51 and $221, respectively.

The following tables summarize the Company's marketable debt securities as of June 30, 2024:

	Amortized Cost	Unrealized Gain	Unrealized (Loss)	Fair Value
U.S. Treasury Bonds	$ 2,994	$ —	$ —	$ 2,994
U.S. Government Notes	7,154	—	(51)	7,103
Total marketable debt securities	$ 10,148	$ —	$ (51)	$ 10,097

All debt securities classified as available-for-sale are due to mature within one year of June 30, 2024.

The following tables summarize the Company's marketable debt securities as of December 31, 2023:

	Amortized Cost	Unrealized Gain	Unrealized (Loss)	Fair Value
U.S. Treasury Bonds	$ 999	$ —	$ (3)	$ 996
U.S. Government Notes	8,191	—	(218)	7,973
Total marketable debt securities	$ 9,190	$ —	$ (221)	$ 8,969

All debt securities classified as available-for-sale are due to mature within one year of December 31, 2023.

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 considers 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:

		Fair Value Hierarchy		
June 30, 2024	**Total**	**(Level 1)**	**(Level 2)**	**(Level 3)**
Assets				
Marketable Debt Securities:				
U.S. Treasury Bonds	$ 2,994	$ 2,994	$ —	$ —
U.S. Government Notes	7,103	—	7,103	—
Total	$ 10,097	$ 2,994	$ 7,103	$ —

		Fair Value Hierarchy		
December 31, 2023	**Total**	**(Level 1)**	**(Level 2)**	**(Level 3)**
Assets				
Marketable Debt Securities:				
U.S. Treasury Bonds	$ 996	$ 996	$ —	$ —
U.S. Government Notes	7,973	—	7,973	—
Total	$ 8,969	$ 996	$ 7,973	$ —

U.S. treasury bonds are classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices for identical assets in active markets. Marketable debt securities consisting of U.S. government notes are classified as Level 2 and are valued using quoted market prices in markets that are not active.

Note 6 – Leasehold Improvements and Equipment

Leasehold improvements and equipment, summarized by major category, consist of the following as of June 30, 2024 and December 31, 2023:

	June 30, 2024	December 31, 2023
Equipment	$ 2,463	$ 2,463
Leasehold improvements	1,155	1,155
Total	3,618	3,618
Less: accumulated depreciation and amortization	1,879	1,695
Leasehold improvements and equipment, net	$ 1,739	$ 1,923

Depreciation and amortization expense for the three and six months ended June 30, 2024 was $90 and $184, respectively, and the three and six months ended June 30, 2023 was $97 and $190, respectively. During the six month periods ended June 30, 2023, the Company purchased equipment of $202. The Company did not purchase any equipment during the six months ended June 30, 2024.

Note 7 – Accrued Expenses and Other Liabilities

Accrued Expenses, summarized by major category, as of June 30, 2024 and December 31, 2023 consist of the following:

	June 30, 2024	December 31, 2023
Payroll and incentives	$ 1,023	$ 1,176
General and administrative expenses	343	196
Research and development expenses	76	75
Total	$ 1,442	$ 1,447

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 $226 for each of the three month periods ended June 30, 2024 and 2023, respectively, and $452 for each of the six month periods ended June 30, 2024 and 2023, respectively. The Company incurred amortization expense on its operating lease right-of-use assets of $149 and $135 for the three months ended June 30, 2024 and 2023, respectively, and $294 and $268 for the six months ended June 30, 2024 and 2023, respectively.

Finance Leases

The Company incurred interest expense on its finance leases of $0 and $1 for the three and six months ended June 30, 2024, respectively, and $1 and $2 for the three and six months ended June 30, 2023, respectively. The Company incurred amortization expense on its finance lease right-of-use assets of $2 and $3 for the three and six months ended June 30, 2024, respectively, and $1 and $5 for the three and six months ended June 30, 2023, 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 June 30, 2024:

Maturity of Lease Liabilities	Operating Lease Liabilities	Finance Lease Liabilities
Remainder of 2024	$ 487	$ 4
2025	998	7
2026	1,040	7
2027	944	7
2028	273	—
Thereafter	138	—
Total undiscounted operating lease payments	$ 3,880	$ 25
Less: Imputed interest	659	5
Present value of operating lease liabilities	$ 3,221	$ 20
Weighted average remaining lease term in years	3.9	3.4
Weighted average discount rate	9.2%	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, 2023:

Maturity of Lease Liabilities	Operating Lease Liabilities	Finance Lease Liabilities
2024	$ 956	$ 7
2025	998	7
2026	1,040	7
2027	944	7
2028	273	—
Thereafter	138	
Total undiscounted operating lease payments	$ 4,349	$ 28
Less: Imputed interest	816	5
Present value of operating lease liabilities	$ 3,533	$ 23
Weighted average remaining lease term in years	4.3	3.9
Weighted average discount rate	9.2%	11.6%

Note 9 – Revenue Recognition, Collaboration Agreements and Other

The Company did not enter into any revenue recognition or collaboration agreements during the six months ended June 30, 2024.

BioNTech Research Collaboration

On April 8, 2022, the Company entered into the BioNTech Agreement to evaluate the combination of mRNA formats utilizing the Company's proprietary LNC platform delivery technology. Under the terms of the BioNTech Agreement, the Company received an exclusivity fee in the amount of $2,750, and BioNTech SE funded certain of the Company's research expenses that were incurred under the agreement. The term of the agreement began on the effective date and expired on April 8, 2023.

The $2,750 license fee was recorded as deferred revenue and was recognized over the term of the contract performance obligation period, which the Company concluded to be 12 months after the execution of the contract. The clinical research services were invoiced as service revenue was earned on a monthly basis during the term of the contract.

During the first quarter of 2023, $688 of the contract research revenue was recognized from the license fee and $375 was earned from the monthly clinical research services performed by the Company. As of March 31, 2023, the Company had recognized all of contract research revenue from the BioNTech Agreement.

Genentech Feasibility Study Agreement

On December 12, 2019, the Company entered into the Genentech Agreement which involves the development of oral formulations using the Company's LNC platform delivery technology. Under the terms of the Genentech Agreement, Genentech paid the Company a total of $100 for the development of three molecules, or $33 per molecule, which is being recognized upon the Company fulfilling its obligations for each molecule under the Genentech Agreement. The Company recorded the upfront consideration as deferred revenue, which is included in accrued expenses on the consolidated balance sheets. As of December 31, 2022, the Company completed its obligations related to the first and second of the three molecules. During the three months ended March 31, 2023, the Company completed its obligations related to the remaining molecule.

Note 10 – Stockholders' Equity

Common Stock

For the six months ended June 30, 2024, the Company sold 33,551,638 shares of its common stock. On April 5, 2024, the Company closed a registered direct offering of 33,333,334 shares of its common stock and warrants to purchase up to an aggregate of 33,333,334 additional shares of common stock, at a combined purchase price of $0.30 per share and accompanying warrant. The Company generated gross proceeds of $10,000 and net proceeds of $9,190, after deducting underwriting discounts and commissions and other offering expenses. In addition, in February, the Company sold 218,304 shares of its common stock under the ATM with BTIG, LLC generating net proceeds of $54.

The Company did not sell any shares of its common stock during the six months ended June 30, 2023.

Warrants

As of June 30, 2024, the Company had outstanding warrants to purchase 33,333,334 shares of the Company's common stock at an exercise price of $0.35 per share.

The warrants are exercisable six months after issuance date, April 5, 2024, and have a five-year term. Once exercisable, the warrants may be exercised at any time in whole or in part upon payment of the applicable exercise price until expiration of the Warrants. No fractional shares will be issued upon the exercise of the Warrants. The exercise price and the number of warrant shares purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of certain events, which may include stock dividends, stock splits, combination and reclassifications of the Company capital stock or other similar changes to the equity structure of the Company. The warrants do not have a redemption feature. They may be exercised on a cashless basis at the holder's option and are classified as equity instruments.

The following table summarizes the changes in warrants outstanding for the six months ended June 30, 2024:

	Shares
Outstanding at December 31, 2023	-
Issued	33,333,334
Exercised	-
Tendered	-
Expired	-
Outstanding at June 30, 2024	33,333,334

Basic and diluted net loss per common share

Net loss per share information is determined using the two-class method, which includes the weighted-average number of shares of common stock outstanding during the period and other securities.

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 and six months ended June 30, 2024 and 2023, 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 and warrants, 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 June 30, 2024 and 2023:

	As of June 30,	
	2024	2023
Stock options	46,031,560	34,544,470
Warrants	33,333,334	—
Total	79,364,894	34,544,470

Note 11 – Accumulated Other Comprehensive Loss

The following table summarizes the changes in accumulated other comprehensive loss by component during the six months ended June 30, 2024 and 2023:

	Net Unrealized Gain/(Loss) on Available-for-Sale Securities	Accumulated Other Comprehensive Loss
Balance, December 31, 2023	$ (221)	$ (221)
Net unrealized gain on securities available-for-sale	170	170
Balance, June 30, 2024	$ (51)	$ (51)
Balance, December 31, 2022	$ (824)	$ (824)
Net unrealized gain on securities available-for-sale	310	310
Balance, June 30, 2023	$ (514)	$ (514)

All components of accumulated other comprehensive income are net of tax.

Note 12 – 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 six month periods ended June 30, 2024 and 2023. The term of the Plan was for 10 years. The Company intends to adopt a new equity compensation plan at its 2024 Annual Meeting, pending shareholder approval.

As of June 30, 2024, there were 50,712,275 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 June 30,		Six Months Ended June 30,	
	2024	2023	2024	2023
Research and Development	$ 411	$ 516	$ 826	$ 1,069
General and Administrative	580	692	1,160	1,411
Total	$ 991	$ 1,208	$ 1,986	$ 2,480

As of June 30, 2024, total compensation costs related to unvested awards not yet recognized was $5,850 and the weighted-average periods over which the awards are expected to be recognized was 2.3 years.

Stock Options

The following table summarizes the activity for Company' stock options for the six months ended June 30, 2024:

	Stock Options
Outstanding at December 31, 2023	46,707,934
Granted	—
Exercised	—
Forfeited	—
Expired	(676,374)
Outstanding at June 30, 2024	46,031,560

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, 2023 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 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 of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. 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 raise additional capital to fund our operations and to develop our product candidates;
- our anticipated timing for preclinical development, regulatory submissions, commencement and completion of clinical trials and product approvals;
- our history of operating losses in each year since inception and the expectation that we will continue to incur operating losses for the foreseeable future;
- our dependence on product candidates which are still in an early development stage;
- our reliance on our proprietary lipid nanocrystal (LNC) platform delivery technology, and certain related patents which are exclusively licensed to us by Rutgers University;
- our ability to manufacture GMP batches of our product candidates which are required for preclinical and clinical trials and, subsequently, if regulatory approval is obtained for any of our products, our ability to manufacture commercial quantities;
- our ability to complete required clinical trials for our lead product candidate and other product candidates and obtain approval from the FDA or other regulatory agents in different jurisdictions;
- our dependence on third parties, including third parties to manufacture our intermediates and final product formulations and third-party contract research organizations to conduct our clinical trials;
- our ability to maintain or protect the validity of our patents and other intellectual property;
- our ability to retain and recruit key personnel;

- our ability to internally develop new inventions and intellectual property;
- interpretations of current laws and the passages of future laws;
- our lack of a sales and marketing organization and our ability to commercialize products, if we obtain regulatory approval, whether alone or through potential future collaborators;
- our ability to successfully commercialize, and our expectations regarding future therapeutic and commercial potential with respect to, our product candidates;
- the accuracy of our estimates regarding expenses, ongoing losses, future revenue, capital requirements and our needs for or ability to obtain additional financing;
- developments and projections relating to our competitors or our industry;
- our operations, business and financial results could be adversely impacted by global instability caused by armed conflicts, pandemics and geo-political uncertainty; and
- the factors listed under the heading "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2023, 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). We are seeking to develop an internal pipeline of products utilizing the LNC Platform to successfully encapsulate small molecules and small oligonucleotides and facilitate targeted and extrahepatic delivery to desired cell tissues without toxicity.

Key elements of our strategy include:

- Advancing MAT2203 into the ORALTO trial for the treatment of invasive aspergillosis in patients with limited treatment options by securing a development and/or commercial partner. This initial indication is designed to be a gateway indication to establish the pharmacodynamic bridge necessary to expand the use of MAT2203 into other indications to treat deadly invasive fungal infections (e.g., mucormycosis, candidiasis and the endemic mycoses) through limited additional clinical work under a 505(b)(2) pathway, thereby making MAT2203 a pipeline in a product.
- Expanding the utilization of our LNC Platform with other small molecules and small oligonucleotides into inflammation and oncology in order to develop an internal pipeline of differentiated drug candidates. Oral, extrahepatic and non-toxic intracellular delivery of these molecules would represent a significant advancement.
- Building an external pipeline of collaborations focused on our LNC Platform with leading pharmaceutical companies to provide delivery solutions for their complex small molecules and small oligonucleotides, including ASOs and siRNAs.

For the six month periods ended June 30, 2024 and 2023, our net loss was $11,543 and $11,573, respectively. We have incurred losses for each period from our inception and expect to incur additional losses for the foreseeable future. We do not believe the cash, cash equivalents and marketable debt securities on hand are sufficient to fund planned operations beyond the next twelve months from the filing date of these financial statements. We seek to fund our operations through public or private equity offerings, debt financing, government or other third-party funding, collaborations and licensing arrangements. These financing alternatives may not be available to us on acceptable terms, or at all. As a result, substantial doubt exists about our ability to continue as a going concern.

Financial Operations Overview

Revenue

During the three and six months ended June 30, 2024, we did not generate any revenue. During the three and six months ended June 30, 2023, we generated $0 and $1,096, respectively, in contract research revenue resulting from the research collaborations with BioNTech SE and Genentech Inc. Our ability to generate product revenue, which we do not expect to occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our early-stage product candidates.

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 delivery technology, which include:

- the cost of conducting pre-clinical work;
- 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 National Institutes of Health (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.

The table below summarizes our direct research and development expenses for our product candidates and development platform for the three and six months ended June 30, 2024 and 2023. Our direct research and development expenses consist principally of external costs, such as fees paid to contractors, consultants, analytical laboratories and CROs and/or the NIH, in connection with our development work. We typically use our employee and infrastructure resources for manufacturing clinical trial materials, conducting product analysis, study protocol development and overseeing outside vendors. Included in "Internal staffing, overhead and other" below is the cost of laboratory space, supplies, research and development (R&D) employee costs (including stock-based compensation), travel and medical education.

	Three months ended June 30,		Six months ended June 30,	
	2024	2023	2024	2023
Direct research and development expenses:				
Manufacturing process development	$ 280	$ 289	$ 550	$ 593
Preclinical trials	427	87	863	249
Clinical development	115	341	271	869
Regulatory	90	137	171	330
Internal staffing, overhead and other	2,459	2,705	4,962	5,489
Total research and development	$ 3,371	$ 3,559	$ 6,817	$ 7,530

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 2024 will be lower compared with expenses incurred during 2023 until such time as we are able to secure additional funding to support initiation of our ORALTO trial for MAT2203 and advancement of our LNC platform delivery technology.

General and Administrative Expenses

General and administrative expense for the three and six months ended June 30, 2024 were $2,468 and $4,925, respectively, and the three and six months ended June 30, 2023 were $2,600 and $5,311, 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 2024 will decrease slightly compared to expenses incurred during 2023.

Other Income, net

Other income, net is largely comprised of interest income/(expense) and dividends.

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 operation 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 2023 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 costs, and (ii) Goodwill and other intangible assets.

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, through clinical development toward an initial indication for the treatment of CM and expanding application of our LNC Platform through both internal efforts and collaborations with third parties. Our R&D expenses consist of manufacturing work and the cost of active pharmaceutical ingredients and excipients used in such work, 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 plan to continue 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 future will be incurred in support of our current and future preclinical and clinical development programs. These expenditures are subject to numerous uncertainties relating to timing and cost to completion. We test compounds in numerous preclinical studies for safety, toxicology, and efficacy. At the appropriate time, subject to the approval of regulatory authorities, we expect to conduct early-stage clinical trials. We anticipate funding these trials ourselves, and possibly with the assistance of federal grants, contracts, or other agreements. As we obtain results from trials, we may elect to discontinue or delay clinical trials for certain products to focus our resources on more promising products. Completion of clinical trials may take several years, and the length of time varies substantially according to the type, complexity, novelty and intended use of a product candidate.

The commencement and completion of clinical trials for our products may be delayed by many factors, including lack of efficacy during clinical trials, unforeseen safety issues, slower than expected participant recruitment, lack of funding or government delays. In addition, we may encounter regulatory delays or rejections as a result of many factors, including results that do not support the intended safety or efficacy of our product candidates, perceived defects in the design of clinical trials and changes in regulatory policy during the period of product development. As a result of these risks and uncertainties, we are unable to accurately estimate the specific timing and costs of our clinical development programs or the timing of material cash inflows, if any, from our product candidates. Our business, financial condition and results of operations may be materially adversely affected by any delays in, or termination of, our clinical trials or a determination by the FDA that the results of our trials are inadequate to justify regulatory approval, insofar as cash in-flows from the relevant drug or program would be delayed or would not occur.

Results of Operations

Comparison of the three months ended June 30, 2024 to the three months ended June 30, 2023

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

	Three Months Ended June 30,	
	2024	**2023**
Revenues	$ —	$ —
Expenses:		
Research and development	$ 3,371	$ 3,559
General and administrative	2,468	2,600
Operating Expenses	$ 5,839	$ 6,159

Revenues. During the three months ended June 30, 2024 and 2023, we did not generate any revenue.

Research and Development expenses. Research and Development (R&D) expense for the three months ended June 30, 2024 and 2023 was $3,371 and $3,559, respectively. The decrease in R&D expense was primarily attributable to lower stock based compensation expense.

General and Administrative expenses. General and Administrative (G&A) expense for the three months ended June 30, 2024 and 2023 was $2,468 and $2,600, respectively. The decrease in G&A expense was primarily attributable to lower stock based compensation expense and decreased insurance premiums.

Comparison of the six months ended June 30, 2024 to the six months ended June 30, 2023

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

	Six Months Ended June 30,	
	2024	**2023**
Revenues	$ —	$ 1,096
Expenses:		
Research and development	$ 6,817	$ 7,530
General and administrative	4,925	5,311
Operating Expenses	$ 11,742	$ 12,841

Revenues. During the six month periods ended June 30, 2024 and 2023, we generated revenue of $0 and $1,096. The amount earned during the prior year consists of contract research revenue resulting from the research collaboration with BioNTech SE and Genentech Inc.

Research and Development expenses. R&D expense for the six month periods ended June 30, 2024 and 2023 was $6,817 and $7,530, respectively. The decrease in R&D expense was primarily attributable to lower stock based compensation expense, a decrease in other payroll related costs due to decreased headcount and the decrease in clinical trial costs.

General and Administrative expenses. G&A for the six month periods ended June 30, 2024 and 2023 was $4,925 and $5,311, respectively. The decrease in G&A expense was primarily attributable to lower stock based compensation expense and decreased insurance premiums.

Liquidity and capital resources

Sources of Liquidity

We have funded our operations since inception primarily through private placements and public offerings of our equity securities. As of June 30, 2024, we have raised a total of $166,907 in gross proceeds and $153,445, net, from sales of our equity securities.

As of June 30, 2024, we had unrestricted cash, cash equivalents and marketable debt securities totaling $14,313.

2024 Registered Direct Offering

On April 5, 2024, the Company closed a registered direct offering of 33,333,334 shares of its common stock and warrants to purchase up to an aggregate of 33,333,334 additional shares of common stock, at a combined purchase price of $0.30 per share and accompanying warrant. The Company generated gross proceeds of approximately $10,000 and net proceeds of approximately $9,190, after deducting underwriting discounts and commissions and other offering expenses.

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:

	Six Months Ended June 30,	
	2024	**2023**
Cash used in operating activities	$ (8,875)	$ (6,280)
Cash (used in)/provided by investing activities	(938)	9,198
Cash provided by/(used in) financing activities	9,242	(5)
Net (decrease)/increase in cash and cash equivalents and restricted cash	$ (571)	$ 2,913

Operating Activities

Net cash used in operating activities was $8,875 and $6,280 for the six month periods ended June 30, 2024 and 2023, respectively. Net losses of $11,543 and $11,573 for the six month periods ended June 30, 2024 and 2023, respectively, were partially offset by working capital adjustments due to the timing of receipts and payments in the ordinary course of business and adjustments for non-cash stock based compensation expense.

Investing Activities

Net cash (used in)/provided by investing activities was ($938) and $9,198 for the six month periods ended June 30, 2024 and 2023, respectively. The increase of cash used in investing activities was primarily due to a $7,938 purchase of marketable securities and a $2,400 decrease in maturities of marketable debt securities partially offset by a $202 decrease in the purchases of leasehold improvements and equipment.

Financing Activities

Net cash provided by/(used in) financing activities was $9,242 and ($5) for the six month periods ended June 30, 2024 and 2023, respectively. The increase in cash provided by financing activities is primarily due to the net proceeds received from the sale of our common stock in the registered direct offering, $9,190, and the net proceeds received from the sale of our common stock under the ATM with BTIG, LLC, $54.

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 financed with non-dilutive funding;
- 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 expect that our existing cash, cash equivalents and marketable debt securities will be sufficient to fund our operating expenses and capital expenditure requirements 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.

Until such time, if ever, that we can generate product 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 oversee the development of our product candidates.

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. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

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 June 30, 2024, 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 Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based on that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of June 30, 2024.

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.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the above evaluation that occurred during the second quarter of 2024 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, 2023. You should carefully consider the risk factors contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2023 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, 2023, 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.

None.

Item 3. DEFAULTS UPON SENIOR SECURITIES.

None.

Item 4. MINE SAFETY DISCLOSURES.

Not applicable.

Item 5. OTHER INFORMATION.

During the six months ended June 30, 2024, none of the Company's directors or officers adopted or terminated any contract, instruction or written plan for the purchase or sale of the Company's securities that was intended to satisfy the affirmative defense conditions of Rule 10b5–1(c) or any "non-Rule 10b5-1 trading arrangement" (as such terms are defined in Item 408 of Regulation S-K of the Securities Act).

Item 6. EXHIBITS.

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:

/s/ Jerome D. Jabbour

Dated: August 14, 2024

Jerome D. Jabbour
Chief Executive Officer (Principal Executive Officer)

/s/ Keith A. Kucinski

Dated: August 14, 2024

Keith A. Kucinski
Chief Financial Officer
(Principal Financial and Accounting Officer)

EXHIBIT INDEX

3.1	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).
3.2	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).
3.3	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).
4.1	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).
10.1	Securities Purchase Agreement, dated April 2, 2024 (incorporated herein by reference to the Company's Current Report on Form 8-K filed with the SEC on April 5, 2024).
10.2	Placement Agency Agreement, dated April 2, 2024 (incorporated herein by reference to the Company's Current Report on Form 8-K filed with the SEC on April 5, 2024).
*31.1	Certification of Chief Executive Officer
*31.2	Certification of Chief Financial Officer
*32.1	Section 1350 Certifications
*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.

Exhibit 31.1

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: August 14, 2024

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

Exhibit 31.2

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 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: August 14, 2024

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

Exhibit 32.1

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: August 14, 2024

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

Date: August 14, 2024

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.