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, 2020

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)

908-443-1860
(Registrant's telephone number, including area code)

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

Title of Each Class	Trading Symbol	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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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 emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.:

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

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

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

As of August 6, 2020, there were 198,873,477 shares of the registrant's common stock, $0.0001 par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

None.

MATINAS BIOPHARMA HOLDINGS, INC.
Form 10-Q
Quarter Ended June 30, 2020

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Matinas BioPharma Holdings Inc.
Condensed Consolidated Balance Sheets

	June 30, 2020 (Unaudited)	December 31, 2019 (Audited)
ASSETS:		
Current assets:		
Cash and cash equivalents	$ 14,903,928	$ 22,170,438
Marketable securities	53,053,709	5,604,634
Restricted cash	200,000	250,000
Prepaid expenses and other current assets	1,051,219	1,897,784
Total current assets	69,208,856	29,922,856
Non-current assets:		
Leasehold improvements and equipment - net	1,639,575	1,749,259
Operating lease right-of-use assets - net	3,523,298	3,761,207
Finance lease right-of-use assets - net	75,290	116,968
In-process research and development	3,017,377	3,017,377
Goodwill	1,336,488	1,336,488
Restricted cash - security deposits	286,000	336,000
Total non-current assets	9,878,028	10,317,299
Total assets	$ 79,086,884	$ 40,240,155
LIABILITIES AND STOCKHOLDERS' EQUITY:		
Current liabilities:		
Accounts payable	$ 494,577	$ 679,310
Accrued expenses	1,434,880	1,939,510
Operating lease liabilities - current	443,801	423,741
Financing lease liabilities - current	34,573	54,673
Total current liabilities	2,407,831	3,097,234
Non-current liabilities:		
Deferred tax liability	341,265	341,265
Operating lease liabilities - net of current portion	3,474,739	3,695,561
Financing lease liabilities - net of current portion	38,378	54,513
Total non-current liabilities	3,854,382	4,091,339
Total liabilities	6,262,213	7,188,573
Stockholders' equity:		
Series B Convertible preferred stock, stated value $1,000 per share, 8,000 shares authorized as of June 30, 2020 and December 31, 2019; 4,552 and 4,577 shares issued and outstanding as of June 30, 2020 and December 31, 2019, respectively; (liquidation preference - $4,552,000 at June 30, 2020)	3,964,034	3,985,805
Common stock par value $0.0001 per share, 500,000,000 shares authorized at June 30, 2020 and December 31, 2019; 198,873,477 and 163,156,984 issued and outstanding as of June 30, 2020 and December 31, 2019, respectively	19,886	16,315
Additional paid-in capital	164,079,847	113,427,897
Accumulated deficit	(95,716,800)	(84,377,555)
Accumulated other comprehensive income/(loss)	477,704	(880)
Total stockholders' equity	72,824,671	33,051,582
Total liabilities and stockholders' equity	$ 79,086,884	$ 40,240,155

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
Unaudited

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
Revenue:				
Contract research revenue	$ -	$ 89,812	$ -	$ 89,812
Costs and expenses:				
Research and development	3,410,237	2,828,776	7,497,120	5,143,477
General and administrative	2,356,310	1,781,717	4,615,941	3,570,131
Total costs and expenses	5,766,547	4,610,493	12,113,061	8,713,608
Loss from operations	(5,766,547)	(4,520,681)	(12,113,061)	(8,623,796)
Sale of New Jersey net operating loss	-	1,007,082	1,073,289	1,007,082
Other income, net	156,000	168,872	383,327	221,279
Net loss	$ (5,610,547)	$ (3,344,727)	$ (10,656,445)	$ (7,395,435)
Preferred stock series A accumulated dividends	-	(146,786)	-	(293,572)
Preferred stock series B accumulated dividends	(177,092)	(115,750)	(347,792)	(234,000)
Net loss attributable to common shareholders	$ (5,787,639)	$ (3,607,263)	$ (11,004,237)	$ (7,923,007)
Net loss available for common shareholders per share - basic and diluted	$ (0.03)	$ (0.03)	$ (0.06)	$ (0.06)
Weighted average common shares outstanding - basic and diluted	197,601,500	143,104,941	194,636,326	130,306,907
Other comprehensive (loss)/income, net of tax				
Net unrealized (loss)/gain on securities available-for-sale	(41,954)	-	481,303	-
Reclassifications to net loss	(2,708)	-	(2,719)	-
Other comprehensive (loss)/income, net of tax	(44,662)	-	478,584	-
Comprehensive loss attributable to shareholders	$ (5,655,209)	$ (3,344,727)	$ (10,177,861)	$ (7,395,435)

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

Matinas BioPharma Holdings, Inc.
Condensed Consolidated Statements of Stockholders' Equity
Unaudited

	Redeemable Convertible Preferred Stock A		Redeemable Convertible Preferred Stock B		Common Stock		Additional Paid - in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Deficit	Income (Loss)	Equity
Balance, December 31, 2019	-	$ -	4,577	$ 3,985,805	163,156,984	$ 16,315	$ 113,427,897	$ (84,377,555)	$ (880)	$ 33,051,582
Stock-based compensation	-	-	-	-	-	-	2,218,530	-	-	2,218,530
Issuance of common stock as compensation for services	-	-	-	-	246,987	25	188,104	-	-	188,129
Issuance of common stock in exchange for preferred stock	-	-	(25)	(21,771)	50,000	5	21,766	-	-	-
Issuance of common stock in public offering, net of stock issuance costs ($3,298,790)	-	-	-	-	32,260,000	3,226	46,700,984	-	-	46,704,210
Issuance of common stock in exchange for Options	-	-	-	-	56,517	6	42,494	-	-	42,500
Issuance of common stock from the exercise of Warrants	-	-	-	-	1,737,389	172	797,409	-	-	797,581
Stock dividend	-	-	-	-	1,365,600	137	682,663	(682,800)	-	-
Other comprehensive income	-	-	-	-	-	-	-	-	478,584	478,584
Net loss	-	-	-	-	-	-	-	(10,656,445)	-	(10,656,445)
Balance, June 30, 2020	-	$ -	4,552	$ 3,964,034	198,873,477	$ 19,886	$ 164,079,847	$ (95,716,800)	$ 477,704	$ 72,824,671

	Redeemable Convertible Preferred Stock A		Redeemable Convertible Preferred Stock B		Common Stock		Additional Paid - in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Deficit	Income (Loss)	Equity
Balance, March 31, 2020	-	$ -	4,552	$ 3,964,034	197,202,938	$ 19,719	$ 162,520,461	$ (89,423,453)	$ 522,366	$ 77,603,127
Stock-based compensation	-	-	-	-	-	-	850,879	-	-	850,879
Issuance of common stock as compensation for services	-	-	-	-	20,537	2	15,872	-	-	15,874
Stock issuance costs	-	-	-	-	-	-	10,000	-	-	10,000
Issuance of common stock from the exercise of Warrants	-	-	-	-	284,402	28	(28)	-	-	-
Stock dividend	-	-	-	-	1,365,600	137	682,663	(682,800)	-	-
Other comprehensive loss	-	-	-	-	-	-	-	-	(44,662)	(44,662)
Net loss	-	-	-	-	-	-	-	(5,610,547)	-	(5,610,547)
Balance, June 30, 2020	-	$ -	4,552	$ 3,964,034	198,873,477	$ 19,886	$ 164,079,847	$ (95,716,800)	$ 477,704	$ 72,824,671

	Redeemable Convertible Preferred Stock A		Redeemable Convertible Preferred Stock B		Common Stock		Additional Paid – in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Deficit	Income (Loss)	Equity
Balance, December 31, 2018	1,467,858	$ 5,583,686	4,819	$ 4,196,547	113,287,670	$ 11,329	$ 72,294,921	$ (65,944,759)	$ -	$ 16,141,724
Stock-based compensation	-	-	-	-	-	-	1,451,242	-	-	1,451,242
Issuance of common stock as compensation for services	-	-	-	-	122,194	12	117,240	-	-	117,252

Issuance of common stock in exchange for preferred stock	-	-	(189)	(164,588)	378,000	38	164,550	-	-	-
Issuance of common stock in public offering, net of stock issuance costs ($2,315,878)	-	-	-	-	29,471,986	2,947	30,100,360	-	-	30,103,307
Stock dividend	-	-	-	-	946,000	94	472,907	(473,001)	-	-
Net loss	-	-	-	-	-	-	-	(7,395,435)	-	(7,395,435)
Balance, June 30, 2019	1,467,858	$ 5,583,686	4,630	$ 4,031,959	144,205,850	$ 14,420	$ 104,601,220	$ (73,813,195)	$ -	$ 40,418,090

	Redeemable Convertible Preferred Stock A		Redeemable Convertible Preferred Stock B		Common Stock		Additional Paid – in	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Deficit	Income (Loss)	Equity
Balance, March 31, 2019	1,467,858	$ 5,583,686	4,730	$ 4,119,043	142,991,442	$ 14,299	$ 103,284,125	$ (69,995,467)	$ -	$ 43,005,686
Stock-based compensation	-	-	-	-	-	-	763,505	-	-	763,505
Issuance of common stock as compensation for services	-	-	-	-	68,408	7	58,619	-	-	58,626
Issuance of common stock in exchange for preferred stock	-	-	(100)	(87,084)	200,000	20	87,064	-	-	-
Stock issuance costs	-	-	-	-	-	-	(65,000)	-	-	(65,000)
Stock dividend	-	-	-	-	946,000	94	472,907	(473,001)	-	-
Net loss	-	-	-	-	-	-	-	(3,344,727)	-	(3,344,727)
Balance, June 30, 2019	1,467,858	$ 5,583,686	4,630	$ 4,031,959	144,205,850	$ 14,420	$ 104,601,220	$ (73,813,195)	$ -	$ 40,418,090

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

Matinas BioPharma Holdings Inc.
Condensed Consolidated Statements of Cash Flow
Unaudited

	Six Months Ended June 30,	
	2020	**2019**
Cash flows from operating activities:		
Net loss	$ (10,656,445)	$ (7,395,435)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	115,433	96,936
Stock based compensation expense	2,391,694	1,626,594
Amortization of operating lease right-of-use assets	237,909	222,320
Amortization of finance lease right-of-use assets	41,678	72,789
Changes in operating assets and liabilities:		
Operating lease liabilities	(200,762)	(169,583)
Prepaid expenses and other current assets	861,530	(14,101)
Accounts payable	(184,733)	252,476
Accrued expenses and other liabilities	(439,630)	188,095
Net cash used in operating activities	(7,833,326)	(5,119,909)
Cash flows from investing activities:		
Purchase of marketable securities	(67,670,491)	-
Proceeds from sales of marketable securities	20,700,000	-
Purchases of leasehold improvements and equipment	(5,749)	(332,174)
Net cash used in investing activities	(46,976,240)	(332,174)
Cash flows from financing activities:		
Net proceeds from public offering of common stock	46,639,210	30,103,307
Proceeds from exercise of warrants	797,581	-
Proceeds from exercise of options	42,500	-
Payments of capital lease liability - principal	(36,235)	(42,296)
Payments of note payable	-	(199,842)
Net cash provided by financing activities	47,443,056	29,861,169
Net (decrease)/increase in cash, cash equivalents and restricted cash	(7,366,510)	24,409,086
Cash, cash equivalents and restricted cash at beginning of period	22,756,438	13,007,838
Cash, cash equivalents and restricted cash at end of period	$ 15,389,928	$ 37,416,924
Supplemental non-cash financing and investing activities:		
Deferred offering costs included in accrued expenses	$ 65,000	$ -
Unrealized gains on marketable securities	$ 478,584	$ -
Preferred stock conversion into common stock - Series B	$ 21,771	$ 164,588
Cashless exercise of warrants	$ 441,189	$ -
Unearned restricted stock grants	$ 73,490	$ -
Stock dividends issued	$ 682,800	$ 473,001
Right-of-use assets obtained in exchange for liabilities	$ -	$ 4,453,028

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. and together with "Holdings" and "BioPharma", "the Company" or "we" or "our" or "us"). The Company is a clinical-stage biopharmaceutical company with a focus on identifying and developing novel pharmaceutical products.

Note 2 – Liquidity and Plan of Operations

The Company has experienced net losses and negative cash flows from operations each period since its inception. Through June 30, 2020, the Company had an accumulated deficit of approximately $95.7 million. The Company's net loss for the six months ended June 30, 2020 was approximately $10.7 million.

The Company has been engaged in developing MAT-9001, its lead product candidate, as well as its lipid nano-crystal ("LNC") platform delivery technology and a pipeline of associated product candidates 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 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.

To continue to fund operations, on January 14, 2020, the Company completed an underwritten public offering of common stock, generating gross cash proceeds of approximately $50.0 million and net proceeds of approximately $46.7 million (see Note 10).

As of June 30, 2020, the Company had cash and cash equivalents of approximately $14.9 million, marketable securities of approximately $53.1 million and restricted cash of approximately $0.5 million. The Company believes the cash and cash equivalents and marketable securities on hand are sufficient to fund planned operations into the first half of 2023.

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 of America ("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 fully described in Note 3 within the Company's Notes to Consolidated Financial Statements included in the Company's 2019 Form 10-K.

In March 2020, the World Health Organization declared COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, has adversely affected workforces, economics, and financial markets globally, potentially leading to an economic downturn.

The Company has been actively monitoring the COVID-19 pandemic and its impact globally. The financial results for the three and six months ended June 30, 2020 were not significantly impacted by COVID-19. However, the Company cannot predict the impact of the progression of the COVID-19 pandemic on future results or the Company's ability to raise capital due to a variety of factors, including the continued good health of Company employees, the ability of suppliers to continue to operate and deliver, the ability of the Company to maintain operations, any further government and/or public actions taken in response to the pandemic and ultimately the length of the pandemic.

Recently adopted accounting pronouncements

In August 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standard Updated ("ASU") 2018-13, "Changes to Disclosure Requirements for Fair Value Measurements", which will improve the effectiveness of disclosure requirements for recurring and nonrecurring fair value measurements. The standard removes, modifies, and adds certain disclosure requirements, and is effective for fiscal years, and interim` periods within those fiscal years, beginning after December 15, 2019. The Company adopted the guidance on January 1, 2020. The adoption did not have a material impact on our condensed consolidated financial statements.

In November 2018, the FASB issued ASU 2018-18, "Collaboration Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606", to clarify when ASC 606 should be used for collaborative arrangements when the counterparty is a customer. The guidance precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from the contracts with the customers if the counterparty is not a customer for that transaction. The guidance is effective for public entities in fiscal years beginning after December 15, 2019, and interim period therein. The Company adopted the guidance on January 1, 2020. The adoption did not have a material impact on our condensed consolidated financial statements.

Note 4 – Cash, Cash Equivalents, Restricted Cash and Marketable 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 securities. Cash and cash equivalents consisted of cash in bank checking and savings accounts and money market funds.

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 represents funds the Company is required to set aside to cover building operating leases and other purposes.

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, 2020, December 31, 2019, June 30, 2019 and December 31, 2018:

	June 30, 2020	December 31, 2019	June 30, 2019	December 31, 2018
Cash and cash equivalents	$ 14,904	$ 22,170	$ 36,831	$ 12,447
Restricted cash included in current/long term assets	486	586	586	561
Cash, cash equivalents and restricted cash in the statement of cash flows	$ 15,390	$ 22,756	$ 37,417	$ 13,008

Marketable Securities

The Company has classified its investments in marketable securities as available-for-sale and as a current asset. The Company's investments in marketable securities are carried at fair value, with unrealized gains and losses included as a separate component of stockholders' equity. Unrealized gains and losses are classified as other comprehensive income (loss) and costs are determined on a specific identification basis. Realized gains and losses from our marketable securities are recorded in other income, net. For the three and six months ended June 30, 2020, the Company recorded unrealized losses of approximately $42.0 thousand and unrealized gains of approximately $481.3 thousand, respectively. The Company had no unrealized gains or losses for the three and six months ended June 30, 2019. As of June 30, 2020 and December 31, 2019, the Company had accumulated unrealized gains of approximately $477.7 thousand and accumulated unrealized losses of approximately $0.9 thousand, respectively.

The following tables summarizes the Company's marketable securities as of June 30, 2020:

	Amortized Cost	Unrealized Gain	Unrealized (Loss)	Fair Value
U.S. Treasury Bonds	$ 28,857	$ 302	$ —	$ 29,159
U.S. Government Notes	16,471	135	(1)	16,605
Corporate Debt Securities	6,223	33	—	6,256
State and Municipal Bonds	1,025	9	—	1,034
Total marketable securities	$ 52,576	$ 479	$ (1)	$ 53,054

Maturities of debt securities classified as available-for-sale were as follows at June 30, 2020:

	Fair Value	Net Carrying Amount
Due within one year	$ 29,334	$ 29,471
Due after one year through five years	23,720	23,818
	$ 53,054	$ 53,289

The following tables summarizes the Company's cash, cash equivalents and marketable securities for the year ended December 31, 2019:

	Amortized Cost	Unrealized Gain	Unrealized (Loss)	Fair Value
Cash and cash equivalents	$ 22,169	$ 1	$ —	$ 22,170
U.S. Treasury Bonds	$ 4,003	$ —	$ (1)	$ 4,002
Corporate Debt Securities	1,604	—	(1)	1,603
Total marketable securities	$ 5,607	$ —	$ (2)	$ 5,605
Total cash, cash equivalents and marketable securities	$ 27,776	$ 1	$ (2)	$ 27,775

Maturities of debt securities classified as available-for-sale were as follows at December 31, 2019:

	Fair Value	Net Carrying Amount
Due within one year	$ 5,002	$ 5,019
Due after one year through five years	603	607
	$ 5,605	$ 5,626

The Company determined that the unrealized gains and (losses) are deemed to be temporary as of June 30, 2020. Unrealized gains and (losses) generally are the result of increases in the risk premiums required by market participants rather than an adverse change in cash flows for a fundamental weakness in the credit quality of the issuer or underlying assets. The Company has the ability and intent to hold these investments until maturity. The Company does not consider the investment in marketable securities to be other-than-temporarily impaired at June 30, 2020.

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 certain cash and cash equivalents, current portion of restricted cash, accounts receivable, prepaid expenses, accounts payable, current portion of lease liability 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, 2020	**Total**	**(Level 1)**	**(Level 2)**	**(Level 3)**
Assets				
Marketable Securities:				
U.S. Treasury Bonds	$ 29,159	$ 29,159	$ —	$ —
U.S. Government Notes	16,605	—	16,605	—
Corporate Debt Securities	6,256	—	6,256	—
State and Municipal Bonds	1,034	—	1,034	—
Total	$ 53,054	$ 29,159	$ 23,895	$ —

		Fair Value Hierarchy		
December 31, 2019	**Total**	**(Level 1)**	**(Level 2)**	**(Level 3)**
Assets				
Cash and cash equivalents	$ 22,170	$ 22,170	$ —	$ —
Marketable Securities:				
U.S. Treasury Bonds	4,002	4,002	—	—
Corporate Debt Securities	1,603	—	1,603	—
Total	$ 27,775	$ 26,172	$ 1,603	$ —

Cash and cash equivalents consisted of cash in bank checking and savings accounts, money market funds and 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 securities consisting of U.S. government notes, corporate debt securities and state and municipal bonds 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, 2020 and December 31, 2019:

	June 30, 2020	**December 31, 2019**
Lab equipment	$ 1,443	$ 1,437
Leasehold improvements	878	878
Total	2,321	2,315
Less: accumulated depreciation and amortization	681	566
Leasehold improvements and equipment, net	$ 1,640	$ 1,749

Depreciation and amortization expense for the three and six months ended June 30, 2020 was approximately $57.8 thousand and approximately $115.4 thousand, respectively, and for the three and six months ended June 30, 2019 was approximately $47.9 thousand and approximately $96.9 thousand, respectively.

Note 7 – Accrued Expenses

Accrued Expenses, summarized by major category, as of June 30, 2020 and December 31, 2019 consist of the following:

	June 30, 2020	December 31, 2019
Payroll and incentives	$ 534	$ 978
General and administrative expenses	334	428
Research and development expenses	367	421
Deferred revenue	200	100
Other	-	13
Total	$ 1,435	$ 1,940

Note 8 – Leases

The Company has various lease agreements with original terms of up to10 years, 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 an implicit rate that can readily be determined. Therefore, the Company uses a discount rate based on its incremental borrowing rate, which is determined using the average of borrowing rates explicitly stated in the Company's finance leases.

The Company incurred lease expense for its operating leases of approximately $203.4 thousand and approximately $406.8 thousand for the three and six months ended June 30, 2020 and 2019, respectively.

The Company incurred interest expense on its finance leases of approximately $1.7 thousand and approximately $4.0 thousand for the three and six months ended June 30, 2020, respectively, and approximately $ 3.1 thousand and approximately $6.5 thousand for the three and six months ended June 30, 2019, respectively. The Company incurred amortization expense on its finance lease right-of-use assets of approximately $18.8 thousand and approximately $41.7 thousand for the three and six months ended June 30, 2020, respectively, and approximately $36.4 thousand and approximately $72.8 thousand for the three and six months ended June 30, 2019, respectively.

The following table presents information about the amount and timing of liabilities arising from the Company's operating and finance leases as of June 30, 2020:

Maturity of Lease Liabilities	Operating Lease Liabilities	Finance Lease Liabilities
Remainder of 2020	$ 383	$ 21
2021	685	34
2022	645	19
2023	677	2
2024	710	-
Thereafter	$ 2,203	$ -
Total undiscounted operating lease payments	$ 5,303	76
Less: Imputed interest	1,384	$ 3
Present value of operating lease liabilities	$ 3,919	$ 73
Weighted average remaining lease term in years	7.1	2.1
Weighted average discount rate	8.4%	8.1%

The following table presents information about the amount and timing of liabilities arising from the Company's operating and finance leases as of December 31, 2019:

Maturity of Lease Liabilities	Operating Lease Liabilities	Finance Lease Liabilities
2020	$ 753	$ 60
2021	685	34
2022	645	19
2023	677	2
2024	710	-
Thereafter	$ 2,203	$ -
Total undiscounted operating lease payments	$ 5,673	115
Less: Imputed interest	1,554	$ 6
Present value of operating lease liabilities	$ 4,119	$ 109
Weighted average remaining lease term in years	7.5	2.2
Weighted average discount rate	8.4%	7.8%

Note 9 – Income Taxes

Sale of net operating losses (NOLs)

The Company recognized $0 and approximately $1.1 million for the three and six months ended June 31, 2020, respectively, and approximately $1.0 million for the three and six month ended June 30, 2019, in connection with the sale of certain State of New Jersey Net Operating Losses ("NOL") and Research and Development ("R&D") tax credits to a third party under the New Jersey Technology Business Tax Certificate Transfer Program.

Note 10 – Stockholders' Equity

Common Stock

On January 14, 2020, the Company closed on an underwritten public offering of 32.3 million shares of its common stock at a purchase price of $1.55 per share. The Company generated gross proceeds of approximately $50.0 million and net proceeds of approximately $46.7 million, after deducting underwriting discounts and commissions and other estimated offering expenses. In addition, the Company granted the underwriters a 30-day option to purchase up to approximately 4.8 million additional shares of its common stock on the same terms and conditions. No additional shares of the Company's common stock were sold pursuant to this option.

Preferred Stock

Series B Preferred Stock

In connection with a public offering of Series B Preferred Stock, on June 19, 2018, the Company filed the Series B Certificate of Designation with the Secretary of the State of Delaware to designate the preferences, rights and limitations of the Series B Preferred Stock. Pursuant to the Series B Certificate of Designation, the Company designated 8,000 shares of the Company's previously undesignated preferred shares as Series B Preferred Stock. As of June 30, 2020 and December 31, 2019, there were 4,552 shares 4,577 shares, respectively, of Series B Preferred Stock outstanding.

Dividends. Subject to certain ownership limitations, holders of the Series B Preferred Stock received or are entitled to receive dividends payable in the Company's common stock as follows: (i) a number of shares of common stock equal to 10% of the shares of common stock underlying the Series B Preferred Stock then held by such holder on June 19, 2019, (ii) a number of shares of common stock equal to 15% of the shares of common stock underlying the Series B Preferred Stock then held by such holder on June 19, 2020 and (iii) a number of shares of common stock equal to 20% of the shares of common stock underlying the Series B Preferred Stock then held by such holder on June 19, 2021. A purchaser in the offering is only entitled to dividends on shares of Series B Preferred Stock held by such holder on any of the aforementioned dividend payment dates. Based on an accounting of the holders of record of Series B Preferred Stock on June 19, 2020 and 2019, the Company made dividend payments totaling 1,365,600 and 946,000 shares of common stock, respectively.

Warrants

The Company has issued two types of warrants: (i) investor warrants and (ii) placement agent warrants. All warrants are exercisable immediately upon issuance and have a five-year term. The warrants may be exercised at any time in whole or in part upon payment of the applicable exercise price until expiration. No fractional shares will be issued upon the exercise of the warrants. The exercise price and the number of shares purchasable upon the exercise of the investor warrants are subject to adjustment upon the occurrence of certain events, which include stock dividends, stock splits, combinations and reclassifications of the Company's capital stock or other similar changes to the equity structure of the Company.

As of June 30, 2020, the Company had outstanding warrants to purchase an aggregate of1,327,810 shares of common stock at exercise prices ranging from $0.50 to $0.75 per share. A summary of warrants outstanding as of June 30, 2020 and December 31, 2019 is presented below, all of which are fully vested:

	Shares
Outstanding at December 31, 2018	5,799
Issued	-
Exercised	(402)
Tendered	-
Expired	-
Outstanding at December 31, 2019	5,397*
Issued	-
Exercised	(2,576)**
Tendered	-
Expired	(1,493)
Outstanding at June 30, 2020	1,328***

* Weighted average exercise price for outstanding warrants is $0.62.
** Converted into approximately 1,737.4 thousand shares of commons stock.
*** Weighted average exercise price for outstanding warrants is $0.55.

Basic and diluted net loss per common share

During the three and six months ended June 30, 2020 and 2019, diluted earnings per common share is the same as basic earnings 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 conversion of 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 attributable to common shareholders because including them would have been anti-dilutive for the three and six months ended June 30, 2020 and 2019:

	As of June 30,	
	2020	2019
Stock options	22,317	16,625
Preferred Stock and accrued dividend upon conversion	9,104	26,287
Warrants	1,328	5,799
Total	32,749	48,711

Note 11 – Accumulated Other Comprehensive (Loss)/Income

The following table summarizes the changes in accumulated other comprehensive (loss)/income by components during the six months ended June 30, 2020:

	Net Unrealized (Losses)/Gains on Available-for-Sale Securities	Accumulated Other Comprehensive (Loss)/Gain
Balance, December 31, 2019	$ (1)	$ (1)
Unrealized gain on securities available-for-sale	482	482
Reclassifications to net loss	(3)	(3)
Net current period other comprehensive income	479	479
Balance, June 30, 2020	$ 478	$ 478

The amounts reclassified to net income for realized gains and losses on available-for-sale securities are recorded as part of other income, net, in our Condensed Consolidated Statements of Operations and Comprehensive Loss. There were no accumulated other comprehensive (losses)/gains during the six months ended June 30, 2019 and all components of accumulated other comprehensive (losses)/gains are net of tax. Realized gains and losses and declines in value judged to be other-than-temporary are included in the determination of net loss and are included in other income, net.

Note 12 – Stock-based Compensation

The Company's Amended and Restated 2013 Equity Compensation Plan (the "Plan") provides 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 months ended June 30, 2020 and 2019.

With the approval of the Board of Directors and a majority of shareholders, effective May 8, 2014, the Plan was amended and restated. The amendment provides for an automatic increase in the number of shares of common stock available for issuance under the Plan each January, commencing January 1, 2015, in an amount up to four percent (4%) of the total number of shares of common stock outstanding on the preceding December 31st.

The following table contains information about the Company's stock plan at June 30, 2020:

	Awards Reserved for Issuance	Awards Issued & Exercised	Awards Available for Grant
2013 Equity Compensation Plan (in thousands)	28,948*	24,836**	4,112

* Increased by 6,526 thousand on January 1, 2020 representing 4% of the total number of shares of common stock outstanding on December 31, 2019.
** Includes both stock grants and option grants

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,	
	2020	2019	2020	2019
Research and Development	$ 358	$ 350	$ 1,180	$ 649
General and Administrative	587	472	1,212	977
Total	$ 945	$ 822	$ 2,392	$ 1,626

During the six months ended June 30, 2020, the Company modified the exercise terms of certain vested stock options resulting in additional stock-based compensation expense of approximately $432.8 thousand. The exercise terms were due to expire on February 9, 2020 but were extended for an additional two years and will be cancelled if not exercised on or before February 9, 2022. The additional expense was recorded in the research and development department.

As of June 30, 2020, total compensation costs related to unvested awards not yet recognized was approximately $9.7 million and the weighted-average periods over which the awards are expected to be recognized was 3.1 years.

Stock Options

The following table summarizes the activity for Company' stock options for the three months ended June 30, 2020 (in thousands):

	Stock Options
Outstanding at January 1, 2020	17,529
Granted	5,250
Exercised	(100)*
Forfeited	(72)
Cancelled	-
Expired	(290)
Outstanding at June 30, 2020	22,317

* Converted into approximately 56.5 thousand shares of common stock.

Restricted Stock Awards

During the six months ended June 30, 2020 and 2019, the Company granted restricted stock awards for 247 thousand and 122 thousand shares of common stock, respectively. These awards are granted to members of the Board of Directors as payment in lieu of cash fees or as payment to a vendor pursuant to a consulting agreement. The Company values restricted stock awards at the fair market value on the date of grant. The Company recorded the value of these restricted awards as general and administrative expense of approximately $93.2 thousand and $173.2 thousand for the three and six months ended June 30, 2020, respectively, and approximately $58.7 thousand and $175.4 thousand for the three and six months ended June 30, 2019, respectively, in the condensed consolidated statement of operations. As of June 30, 2020, there was approximately $73.5 thousand of total unrecognized compensation costs related to 200,000 non-vested restricted stock grants which are expected to be recognized over a weighted-average period of 0.3 years.

Note 13 – Subsequent Event

On July 2, 2020, the Company filed a Registration Statement on Form S-3 for the sale of its common stock, preferred stock, warrants, debt securities and subscription rights having an aggregate offering price of up to $200,000,000. An amendment to the Registration Statement was subsequently filed on June 27, 2020. The Registration Statement was declared effective by the Securities and Exchange Commission on July 2, 2020.

Also 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 $50,000,000, 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.

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, 2019 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, together with any statements related in any way to the COVID-19 pandemic including its impact on the Company, 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. In addition, the extent to which the COVID-19 pandemic will continue to impact our business and financial results going forward will be dependent on future developments such as the length and severity of the crisis, the potential resurgence of the crisis, future government actions in response to the crisis and the overall impact of the COVID-19 pandemic on the global economy and capital markets, among many other factors, all of which remain highly uncertain and unpredictable. 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 expectations regarding clinical studies, the timing of clinical results, development timelines and regulatory filings and submissions for our product candidates;
- risks related to failure to obtain FDA clearances or approvals and noncompliance with FDA regulations;
- the time, resources, and expense required to develop and conduct clinical trials and seek regulatory approvals for of our product candidates;
- the success of competing therapies and products that are or may become available;
- uncertainties of government and third party payor reimbursement;
- the performance of third parties, including contract research organizations and third-party manufacturers;
- the cost of preparing, filing, prosecuting, defending, and enforcing patent claims and other patent related costs, including litigation costs and the results of such litigation;
- our liquidity and our expectations regarding our needs for and ability to raise additional capital; and
- the factors listed under the heading "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2019, 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 creating value through (i) development of our lead product candidate, MAT9001(omega-3 pentaenoic acids), a highly purified, prescription-only omega-3 free fatty acid formulation specifically designed for the treatment of cardiovascular and metabolic conditions and (ii) the application of our LNC platform delivery technology to solve complex challenges relating to the delivery of a variety of molecules, exhibited by our lead LNC platform drug candidate, MAT2203, an oral formulation of the well-known fungicidal drug amphotericin B. Based upon MAT9001's unique mixture of highly purified omega-3 pentaenoic free fatty acids and our observations of MAT9001's enhanced bioavailability and potency as compared to Amarin Corporation's Vascepa® (icosapent ethyl) in our initial head-to-head pharmacokinetic (PK) and pharmacodynamic (PD), or PK/PD, clinical study, we believe that the results of our forthcoming targeted clinical development activities and related clinical investigations may yield an improved therapeutic profile compared to currently-existing therapies.

We are focused on creating value through 1) the streamlined development of MAT9001 for treating cardiovascular and metabolic conditions; and 2) the application of our transformative LNC platform delivery technology to overcome current challenges in safely and effectively delivering small molecules, gene therapies, proteins/peptides, and vaccines.

Key elements of our strategy include:

- Rapidly advancing the clinical development of MAT9001 for the treatment of SHTG and generating additional clinical data to further differentiate MAT9001 from Vascepa and other prescription omega-3 drugs in an emerging and rapidly expanding market.
- Delivering efficacy data for MAT2203 in the EnACT study for the treatment of CM with the non-dilutive financial support from the NIH.
- Expanding the application of our LNC platform delivery technology through collaborations with sophisticated and well-resourced biotech and pharmaceutical companies in innovative areas of medicine.

We have incurred losses for each period from our inception. For the six months ended June 30, 2020 and 2019, our net loss was approximately $10.7 million and $7.4 million, respectively. We expect to incur significant expenses and operating losses over the next several years. Accordingly, we will need additional financing to support our continuing operations. We will seek to fund our operations through public or private equity offerings, debt financings, 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.

Impact of COVID-19

In March 2020, the World Health Organization declared coronavirus COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, has adversely affected workforces, economies, and financial markets globally, potentially leading to an economic downturn.

We have been actively monitoring the COVID-19 pandemic and its impact globally. In March, we temporarily halted enrollment in our clinical trials. In June, we commenced enrollment and started dosing patients in the ENHANCE-IT study and in July we resumed dosing patients in the EnACT study. The continued impact of COVID-19 globally could adversely affect our ability to complete the trials on the expected timelines. In addition, we rely on independent clinical investigators, contract research organizations and other third-party service providers to assist us in managing, monitoring and otherwise carrying out our preclinical studies and clinical trials, and the outbreak may affect their ability to devote sufficient time and resources to our programs or to travel to sites to perform work for us. Additionally, COVID-19 may also result in delays in receiving approvals from local and foreign regulatory authorities, delays in necessary interactions with IRB's or Institutional Review Boards, local and foreign regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees.

There is a risk that delivery of our drug supply may be significantly delayed or may become unavailable as a result of COVID-19 and the resulting impact on our suppliers' labor forces and operations, including as a result of governmental restrictions on business operations and the movement of people and goods in an effort to curtail the spread of the virus. There can be no assurance that we would be able to timely implement any mitigation plans. Disruptions in our supply chain, whether as a result of restricted travel, quarantine requirements or otherwise, could negatively impact clinical supplies of our products, which could materially adversely impact our clinical trial and development timelines.

The financial results for the three and six months ended June 30, 2020 were not significantly impacted by COVID-19. However, we cannot predict the impact of the progression of the COVID-19 pandemic on future results or our ability to raise capital due to a variety of factors, including the continued good health of our employees, the ability of suppliers to continue to operate and deliver, the ability of the Company to maintain operations, any further government and/or public actions taken in response to the pandemic and ultimately the length of the pandemic.

Financial Operations Overview

Revenue

During the six months ended June 30, 2020 and 2019, we generated contract research revenue of $0 and approximately $89.8 thousand, respectively, resulting from a grant with the Cystic Fibroses Foundation. Our ability to generate product revenue, which we do not expect to occur until 2023 at the earliest, 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 candidates MAT9001 and MAT2203 and advancement of our LNC delivery technology platform, 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 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, 2020 and 2019. 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,	
(Dollars in thousands)	2020	2019	2020	2019
Direct research and development expenses:				
Manufacturing process development	$ 305	$ 31	$ 610	$ 109
Preclinical trials	328	310	479	577
Clinical development	1,206	834	2,699	1,333
Regulatory	15	76	34	133
Internal staffing, overhead and other	1,556	1,578	3,675	2,992
Total research and development	$ 3,410	$ 2,829	$ 7,497	$ 5,144

Research and development activities are central to our business model. We expect our research and development expenses to increase 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. In addition, we will look to strategically expand the use of our drug platform technology through additional development work. During 2020, we will be focused on advancing our lead product candidate, MAT9001 through clinical development toward an initial indication for the treatment of SHTG, expanding application of our LNC platform delivery technology through collaborations with third parties, and driving MAT2203 to efficacy data in the treatment of cryptococcal meningitis (CM).

General and Administrative Expenses

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 will increase during 2020 due to the increased expenses related to our status as a publicly traded company, employee compensation, investor relations, protection of our intellectual property and insurance costs.

Sale of Net Operating Losses (NOLs)

Income obtained from selling unused net operating losses (NOLs) and unused research tax credits under the New Jersey Technology Business Tax Certificate Program was approximately $1.1 million and $1.0 for the six months ended June 30, 2020 and 2019, respectively.

Other Income, net

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

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 2019 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) Stock-based compensation, (ii) Fair value measurements, (iii) Research and development costs, (iv) Goodwill and other intangible assets, and (v) Basic and diluted net loss per common share.

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 product candidate, MAT9001 through clinical development toward an initial indication for the treatment of SHTG, expanding application of our LNC platform delivery technology through collaborations with third parties, and driving MAT2203 to efficacy data in the treatment of CM. Our R&D expenses consist of manufacturing work and the cost of drug ingredients 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 in order to be in a position to realize the potential of our product candidates and proprietary technologies.

We expect that all 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 rather than technology development. 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 for each drug candidate. 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 in order to focus our resources on more promising products. Completion of clinical trials may take several years, and the length of time generally 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, 2020 to the three months ended June 30, 2019

The following tables summarizes our revenues and operating expenses for the comparative periods presented (dollars in thousands):

	Three Months Ended June 30,	
	2020	2019
Revenues	$ -	$ 90
Expenses:		
Research and development	$ 3,410	$ 2,829
General and administrative	2,357	1,781
Operating Expenses	$ 5,767	$ 4,610
Sale of net operating losses (NOLs)	$ -	$ 1,007

Revenues. We did not generate any revenue during the three months ended June 30, 2020 and approximately $89.8 thousand during the same period in 2019. Amount earned consists of contract research revenue resulting from a grant with the Cystic Fibroses Foundation.

Research and Development expenses. Research and Development (R&D) expense for the three months ended June 30, 2020 and 2019 was approximately $3.4 million and $2.8 million, respectively. The increase in R&D expenses was primarily due to higher employee compensation and costs related to clinical trials for the advancement of our lead product candidates MAT9001 and MAT2203.

General and Administrative expenses. General and administrative expense for the three months ended June 30, 2020 and 2019 was approximately $2.4 million and $1.8 million, respectively, compared to the prior year. The increase in general and administrative expense was primarily due to higher compensation expense related to increased employee headcount compared to the prior year.

Sale of net operating losses (NOLs). The Company recognized $0 and approximately $1.0 million for the three months ended June 30, 2020 and 2019, respectively, in connection with the sale of state net operating losses and state research and development credits to a third party under the New Jersey Technology Business Tax Certificate Program.

Comparison of the six months ended June 30, 2020 to the six months ended June 30, 2019

The following tables summarizes our revenues and operating expenses for the comparative periods presented (dollars in thousands):

	Six Months Ended June 30,	
	2020	2019
Revenues	$ -	$ 90
Expenses:		
Research and development	$ 7,497	$ 5,144
General and administrative	4,616	3,570
Operating Expenses	$ 12,113	$ 8,714
Sale of net operating losses (NOLs)	$ 1,073	$ 1,007

Revenues. We did not generate any revenue during the six months ended June 30, 2020 and approximately $89.8 thousand during the same period in 2019. Amount earned consists of contract research revenue resulting from a grant with the Cystic Fibroses Foundation.

Research and Development expenses. Research and Development (R&D) expense for the six months ended June 30, 2020 and 2019 was approximately $7.5 million and $5.1 million, respectively. The increase in R&D expenses was primarily due to higher employee compensation and costs related to clinical trials for the advancement of our lead product candidates MAT9001 and MAT2203.

General and Administrative expenses. General and administrative expense for the six months ended June 30, 2020 and 2019 was approximately $4.6 million and $3.6 million, respectively, compared to the prior year. The increase in general and administrative expense was primarily due to higher compensation expense related to increased employee headcount compared to the prior year.

Sale of net operating losses (NOLs). The Company recognized approximately $1.1 million and $1.0 million for the six months ended June 30, 2020 and 2019, respectively, in connection with the sale of state net operating losses and state research and development credits to a third party under the New Jersey Technology Business Tax Certificate Program.

Liquidity and capital resources

Sources of Liquidity

We have funded our operations since inception through private placements and public offerings of our equity securities. As of June 30, 2020, we have raised a total of approximately $150.1 million in gross proceeds and $137.6 million, net, from sales of our equity securities.

As of June 30, 2020, we had cash, cash equivalents and marketable securities totaling $68.0 million.

2020 Common Stock Offering

On January 14, 2020, we closed an underwritten public offering of our common stock. The offering resulted in the sale of approximately 32.3 million shares to the public at a price of $1.55 per share. We generated net proceeds of approximately $46.7 million. We granted the underwriters a 30-day option (the "option") to purchase approximately 4.8 million additional shares of common stock subject to the same terms and conditions. No additional shares of our common stock were sold pursuant to this option.

2019 Common Stock Offering

On March 19, 2019, we closed an underwritten public offering of our common stock. The offering resulted in the sale of approximately 27.3 million shares to the public at a price of $1.10 per share. We generated net proceeds of approximately $27.8 million. We granted the underwriters a 30-day option (the "option") to purchase approximately 4.1 million additional shares of common stock subject to the same terms and conditions. On March 28, 2019, an approximately 2.2 million additional shares were sold pursuant to the option at a price of $1.10 per share, resulting in additional net proceeds to us of approximately $2.3 million.

Cash Flows

The following table sets forth the primary sources and uses of cash, cash equivalents and restricted cash for each of the period set forth below (dollars in thousands):

	Six Months Ended June 30,	
	2020	2019
Cash used in operating activities	$ (7,834)	$ (5,120)
Cash used in investing activities	(46,976)	(332)
Cash provided by financing activities`	47,443	29,861
Net (decrease)/increase in cash and cash equivalents and restricted cash	$ (7,367)	$ 24,409

Operating Activities

Net cash used in operating activities was approximately $7.8 million and $5.1 million for the six-month periods ended June 30, 2020 and 2019, respectively. The increase of approximately $2.7 million for the period was primarily due to an increase in the net loss and changes in operating assets and liabilities. We expect that there will be an increase in cash used in operations during the remainder of 2020 due to higher research and development expenses as we continue to move our product candidates and delivery platform forward in their development cycles.

Investing Activities

Approximately $47.0 million and approximately $0.3 million of cash was used in investing activities for the six-month periods ended June 30, 2020 and 2019, respectively. The increase of $46.7 million was due to the purchase and maturities of our marketable securities during the six months ended June 30, 2020. No marketable securities were purchased or matured during the six months ended June 30, 2019.

Financing Activities

Net cash provided by financing activities was approximately $47.4 million and approximately $29.9 million for the six-months periods ended June 30, 2020 and 2019, respectively. The increase of $17.5 million in cash provided by financing activities was primarily due to the approximately $46.6 million of net proceeds from the January 2020 public offering of common stock compared to the approximately $30.1 million of net proceeds from the March 2019 public offering of common stock, as well as an increase of approximately $0.8 million from the exercising of warrants and approximately $0.1 million from the exercising of stock option during the six months ended June 30, 2020.

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 MAT9001, our lead product candidate;
- support the conduct of further clinical studies of MAT2203, 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
- a d d 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 expect that our existing cash and cash equivalents will be sufficient to fund our operating expenses and capital expenditures requirements into the first half of 2023.

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. We do not have any committed external source of funds other than limited grant funding from the NIH. 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.

Contractual Obligations and Commitments

There have been no material changes from the disclosures relating to our contractual obligations reported in our Annual Report on Form 10-K for the year ended December 31, 2019.

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

Our exposure to market risk is limited to our cash and cash equivalents, all of which have maturities of one year or less, and our marketable securities. The primary objectives of our investment activities are to preserve principal, provide liquidity and maximize income without significantly increasing risk. Our investment policy limits investments to certain types of instruments issued by institutions with investment-grade credit ratings and U.S. government fixed income securities. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates, and changes in the fair values of our investments in debt securities including governmental securities and corporate bonds. However, because of the short-term nature and high credit quality of the instruments in our portfolio, a sudden change in market interest rates would not be expected to have a material impact on our financial condition and/or results of operation. We do not have any foreign currency or derivative financial instruments.

Item 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures.

Disclosure Controls and Procedures:

As of June 30, 2020, 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, 2020.

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.

As disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019 filed with the SEC on March 9, 2020, management previously identified a material weakness in our internal controls over financial reporting. Based on management's evaluation, this material weakness was remediated as of June 30, 2020.

The previously identified material weakness which has been remediated included not having designed and implemented a sufficient level of formal financial reporting and operating policies and procedures that define how transactions should have been initiated, processed, recorded and reported, including presentation and disclosure in the consolidated financial statements.

Management implemented its remediation plan by enhancing operational procedures related to purchasing, receiving and recording expenditures, including consulting with our third-party internal auditors throughout the period while formalizing and testing our review procedures.

Changes in Internal Control Over Financial Reporting

There was no change, except as part of our remediation of the deficiency in internal controls described above, in our internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act") that occurred during the period covered by this report that has materially affected or is reasonably likely to materially affect our internal control over financial reporting.

PART - II OTHER INFORMATION

Item 1. LEGAL PROCEEDSINGS

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, 2019. You should carefully consider the risk factors set forth below and those contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 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, 2019, 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.

Our results of operations and financial condition may be adversely affected by the COVID-19 pandemic and other public health epidemics.

Our results of operations and financial condition may be adversely affected if the progression of the COVID-19 pandemic interferes with our ability, or that of our employees, contractors, suppliers and other business partners, to carry out and deliver on business obligations.

COVID-19 may have an adverse effect on our operations, supply chains and distribution systems. Known potential impacts could include the health of our employees as well as a disruption to our supply chain and the ability to conduct planned clinical trials. There could be other unknown and unforeseeable impacts. These impacts may also increase our expenses, including costs associated with preventive and precautionary measures that we, companies with which we conduct business and governments are taking. Government measures include actions that restrict or prohibit travel, which in turn may impact our operations by limiting our employees' ability to come to work, or the employees of companies upon which our supply chain depends. The impacts of the pandemic and the aforesaid measures taken by other companies and governments may have a significant and unpredictable adverse effect on our operations.

As of the date of this Quarterly Report on Form 10-Q, we experienced limited disruptions in our business, and at a minimum we expect those disruptions to continue into the third quarter of 2020. It is impossible to predict the overall impact of the COVID-19 pandemic on our business, financial condition, liquidity and financial results, and there can be no assurance that the COVID-19 pandemic will not have a material and adverse effect on our financial results during any quarter or year in which we are affected.

Our certificate of incorporation designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees or agents.

In addition, our certificate of incorporation requires that, to the fullest extent permitted by law, and unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will, to the fullest extent permitted by law, be the sole and exclusive forum for each of the following:

- any derivative action or proceeding brought in the name or right of the Company or on its behalf,
- any action asserting a claim for breach of any fiduciary duty owed by any director, officer, employee or agent of the Company to the Company or the Company's stockholders,
- any action asserting a claim against the Company or any director or officer of the Company arising pursuant to, or a claim against the Company or any director or officer of the Company with respect to the interpretation or application of any provision of, the Delaware General Corporation Law, the certificate of incorporation or the bylaws of the Company, or
- any action asserting a claim governed by the internal affairs doctrine.

Because the applicability of the exclusive forum provision is limited to the extent permitted by law, we believe that the exclusive forum provision would not apply to suits brought to enforce any duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction, and that federal courts have concurrent jurisdiction over all suits brought to enforce any duty or liability created by the Securities Act. We note that there is uncertainty as to whether a court would enforce the provision and that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers.

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

None.

Item 3. DEFAULTS UNDER SENIOR SECURITIES

None.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

Item 5. OTHER INFORMATION

Not applicable.

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 10, 2020

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

/s/ Keith A. Kucinski

Dated: August 10, 2020

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

EXHIBIT INDEX

*31.1	Certification of Chief Executive Officer
*31.2	Certification of Chief Financial Officer
**32.1	Section 1350 Certifications
*101.1	XBRL Instance Document.
*101.2	XBRL Taxonomy Extension Schema Document.
*101.3	XBRL Taxonomy Extension Calculation Linkbase Document.
*101.4	XBRL Taxonomy Extension Definition Linkbase Document.
*101.5	XBRL Taxonomy Extension Label Linkbase Document.
*101.6	XBRL Taxonomy Extension Presentation Linkbase Document.
*	Filed herewith.

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 10, 2020

By *<u>/s/ Jerome D. Jabbour</u>*
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 10, 2020

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 10, 2020

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

Date: August 10, 2020

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.