UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

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

For the quarterly period ended March 31, 2019

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)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes [ ] No [X]

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes [ ] No [X]

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 [X] 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 [X] No [ ]

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [ ]

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	[X]	Smaller reporting company	[X]
		Emerging growth company	[X]

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 [X]

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

As of May 9, 2019, there were 142,991,442 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 March 31, 2019

TABLE OF CONTENTS

PART – I FINANCIAL INFORMATION

Item 1. FINANCIAL STATEMENTS

Matinas BioPharma Holdings Inc.
Condensed Consolidated Balance Sheets
Unaudited

	March 31, 2019	December 31, 2018
ASSETS:		
Current assets:		
Cash and cash equivalents	$ 39,412,546	$ 12,446,838
Restricted cash	100,000	100,000
Prepaid expenses	391,027	538,646
Total current assets	39,903,573	13,085,484
Non-current assets:		
Leasehold improvements and equipment - net	1,522,413	2,042,893
Operating lease right-of-use assets	4,102,985	-
Finance lease right-of-use assets	203,371	-
In-process research and development	3,017,377	3,017,377
Goodwill	1,336,488	1,336,488
Restricted cash - security deposit	486,000	461,000
Total non-current assets	10,668,634	6,857,758
Total assets	$ 50,572,207	$ 19,943,242
LIABILITIES AND STOCKHOLDERS' EQUITY:		
Current liabilities:		
Accounts payable	$ 394,692	$ 295,652
Note payable	79,937	199,842
Accrued expenses	1,010,589	1,086,868
Stock dividends payable - current	1,174,286	1,174,286
Operating lease liabilities - current	374,998	-
Financing lease liabilities - current	81,425	83,245
Total current liabilities	3,115,927	2,839,893
Non-current liabilities:		
Deferred tax liability	341,265	341,265
Operating lease liabilities - net of current portion	4,020,089	-
Financing lease liabilities - net of current portion	89,240	107,656
Deferred rent liability	-	512,704
Total non-current liabilities	4,450,594	961,625
Total liabilities	7,566,521	3,801,518
Stockholders' equity:		
Series A Convertible preferred stock, stated value $5.00 per share, 1,600,000 shares authorized as of March 31, 2019 and December 31, 2018; 1,467,858 shares issued and outstanding as of March 31, 2019 and December 31, 2018 (liquidation preference - $8,513,576 at March 31, 2019)	5,583,686	5,583,686
Series B Convertible preferred stock, stated value $1,000 per share, 8,000 shares authorized as of March 31, 2019 and December 31, 2018; 4,730 and 4,819 shares issued and outstanding as of March 31, 2019 and December 31, 2018; (liquidation preference - $4,370,000 at March 31, 2019)	4,119,043	4,196,547
Common stock par value $0.0001 per share, 250,000,000 shares authorized at March 31, 2019 and December 31, 2018; 142,991,442 and 113,287,670 issued and outstanding as of March 31, 2019 and December 31, 2018, respectively	14,299	11,329
Additional paid in capital	103,284,125	72,294,921
Accumulated deficit	(69,995,467)	(65,944,759)
Total stockholders' equity	43,005,686	16,141,724
Total liabilities and stockholders' equity	$ 50,572,207	$ 19,943,242

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

Matinas BioPharma Holdings, Inc.
Condensed Consolidated Statements of Operations
Unaudited

	Three Months Ended March 31,	
	2019	**2018**
Revenue:		
Contract research revenue	$ -	$ 29,937
Costs and expenses:		
Research and development	2,314,701	2,192,888
General and administrative	1,788,414	1,957,798
Total costs and expenses	4,103,115	4,150,686
Loss from operations	(4,103,115)	(4,120,749)
Other income, net	52,407	10,745
Net loss	$ (4,050,708)	$ (4,110,004)
Preferred stock series A accumulated dividends	(146,786)	(147,286)
Preferred stock series B accumulated dividends	(118,250)	-
Net loss attributable to common shareholders	$ (4,315,744)	$ (4,257,290)
Net loss available for common shareholders per share - basic and diluted	$ (0.04)	$ (0.05)
Weighted average common shares outstanding - basic and diluted	117,366,673	93,542,552

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

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

	Redeemable Convertible Preferred Stock A		Redeemable Convertible Preferred Stock B		Common Stock		Additional Paid - in	Accumulated	Total Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Deficit	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	-	-	-	-	-	-	687,737	-	687,737
Issuance of common stock as compensation for services	-	-	-	-	53,786	5	58,621	-	58,626
Issuance of common stock in exchange for preferred stock	-	-	(89)	(77,504)	178,000	18	77,486	-	-
Issuance of common stock in public offering, net of stock issuance costs ($2,250,878)	-	-	-	-	29,471,986	2,947	30,165,360	-	30,168,307
Net loss	-	-	-	-	-	-	-	(4,050,708)	(4,050,708)
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
Balance, December 31, 2017	1,502,858	$ 5,716,825	-	$ -	93,371,129	$ 9,335	$ 56,230,347	$ (51,274,542)	$ 10,681,965
Stock-based compensation	-	-	-	-	-	-	1,575,961	-	1,575,961
Issuance of common stock as compensation for services	-	-	-	-	286,433	29	273,659	-	273,688
Issuance of common stock in exchange for preferred stock	(30,000)	(114,119)	-	-	300,000	30	114,089	-	-
Stock dividends paid	-	-	-	-	24,000	2	11,998	-	12,000
Net loss	-	-	-	-	-	-	-	(4,110,004)	(4,110,004)
Balance, March 31, 2018	1,472,858	$ 5,602,706	-	$ -	93,981,562	$ 9,396	$ 58,206,054	$ (55,384,546)	$ 8,433,610

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

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

	Three Months Ended March 31,	
	2019	**2018**
Cash flows from operating activities:		
Net loss	$ (4,050,708)	$ (4,110,004)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	47,867	47,138
Amortization of operating lease right-of-use assets	110,277	-
Amortization of finance lease right-of-use assets	36,395	-
Change in deferred rent	-	16,926
Stock based compensation expense	804,463	1,747,816
Changes in operating assets and liabilities:		
Operating lease liabilities	(83,786)	-
Prepaid expenses	89,519	128,598
Accounts payable	99,040	(109,354)
Accrued expenses and other liabilities	(76,279)	(526,851)
Net cash used in operating activities	(3,023,212)	(2,805,731)
Cash flows from investing activities:		
Purchases of leasehold improvements and equipment	(14,246)	(101,916)
Net cash used in investing activities	(14,246)	(101,916)
Cash flows from financing activities:		
Net proceeds from public offering of common stock	30,168,307	-
Payments of capital lease liability- principal	(20,236)	(8,014)
Payments of note payable	(119,905)	(127,677)
Net cash provided by (used in) financing activities	30,028,166	(135,691)
Net increase in cash, cash equivalents and restricted cash	26,990,708	(3,043,338)
Cash, cash equivalents and restricted cash at beginning of period	13,007,838	7,997,937
Cash, cash equivalents and restricted cash at end of period	$ 39,998,546	$ 4,954,599
Supplemental non-cash financing and investing activities:		
Right of use assets obtained in exchange for liabilities	$ 4,453,028	-
Preferred stock conversion into common stock - series A	$ -	$ 150,000
Preferred stock conversion into common stock - series B	$ 77,504	$ -
Stock dividends issued	$ -	$ 12,000
Equipment acquired under capital lease	$ -	$ 81,089
Unearned restricted stock grants	$ -	$ 173,333

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

Note 1 – Description of Business

Matinas BioPharma Holdings Inc. ("Holdings") is a Delaware corporation formed in 2013. Holdings is the parent company of Matinas BioPharma, Inc. ("BioPharma"), and Matinas BioPharma Nanotechnologies, Inc. ("Nanotechnologies," formerly known as Aquarius Biotechnologies, Inc.), its operating subsidiaries ("Nanotechnologies", and together with "Holdings" and "BioPharma", "the Company" 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 March 31, 2019, the Company had an accumulated deficit of approximately $70.0 million. The Company's net loss for the three months ended March 31, 2019 was approximately $4.1 million.

The Company has been engaged in developing its lipid nano-crystal ("LNC") platform delivery technology and a pipeline of 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.

Assuming the Company obtains FDA approval for one or more of its product candidates, which the Company does not expect to receive until 2023 at the earliest, 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 March 19, 2019, the Company completed an underwritten public offering of common stock, generating gross cash proceeds of $30 million and net proceeds of approximately $27.9 million. On March 28, 2019, additional shares were sold pursuant to an over-allotment option granted to the underwriters of the public offering, resulting in additional net proceeds to the Company of approximately $2.3 million (see Note 9).

As of March 31, 2019, the Company had cash and cash equivalents of approximately $39.4 million and restricted cash of $0.6 million. The Company believes the cash and cash equivalents on hand are sufficient to fund planned operations beyond May 2020.

Note 3 – Summary of Significant Accounting Policies

Basis of presentation and principles of consolidation

The accompanying unaudited consolidated financial statements include the consolidated accounts of Holdings and its wholly-owned operational subsidiaries, BioPharma, and Nanotechnologies. The accompanying unaudited consolidated financial statements have been prepared by the Company 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.

Use of estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Certain accounting principles require subjective and complex judgments to be used in the preparation of financial statements. Accordingly, a different financial presentation could result depending on the judgments, estimates, or assumptions that are used. Such estimates and assumptions include, but are not specifically limited to, those required in the assessment of the impairment of intangible assets and the valuation of Level 3 fair value measurement of financial instruments and determination of stock-based compensation, contingent consideration and all acquired assets and liabilities.

Cash and cash equivalents

The Company considers all highly liquid instruments purchased with original maturity of three months or less to be cash equivalents to the extent the funds are not being held for investment purposes. Cash and cash equivalents include cash on hand, bank demand deposits and overnight sweep accounts used in the Company's cash management program.

Restricted Cash

The Company presents restricted cash with cash and cash equivalents in the Consolidated Statements of Cash Flows. The following table provides a reconciliation of cash, cash equivalents and restricted cash reported in the Consolidated Balance Sheets to the total of the amounts in the Consolidated Statements of Cash Flows as of March 31, 2019, December 31, 2018, March 31, 2018 and December 31, 2017:

(Dollars in thousands)	March 31, 2019	December 31, 2018	March 31, 2018	December 31, 2017
Cash and cash equivalents	$ 39,413	$ 12,447	$ 4,263	$ 7,307
Restricted cash included in current/long term assets	586	561	692	692
Cash, cash equivalents and restricted cash in the statement of cash flows	$ 39,999	$ 13,008	$ 4,955	$ 7,998

Concentration of credit risk

The Company's financial instruments that are exposed to concentrations of credit risk consist primarily of cash. Cash balances are maintained principally at two major U.S. financial institutions and are insured by the Federal Deposit Insurance Corporation ("FDIC") up to regulatory limits. At all times throughout the three months ended March 31, 2019, the Company's cash balances exceeded the FDIC insurance limit. The Company has not experienced any losses in such accounts.

Leasehold improvements and equipment

Equipment is stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. The estimated useful lives of the Company equipment range from three to ten years. Capitalized costs associated with leasehold improvements are amortized over the lesser of the useful life of the asset or the remaining life of the lease.

Goodwill and other intangible assets

Goodwill is assessed for impairment at least annually on a reporting unit basis, or more frequently when events and circumstances occur indicating that the recorded goodwill may be impaired. In accordance with the authoritative accounting guidance we have the option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount. If we determine this is the case, we are required to perform further analysis to identify potential goodwill impairment and measure the amount of goodwill impairment loss to be recognized, if any. If we determine that it is more-likely-than-not that the fair value of the reporting unit is greater than its carrying amounts, further analysis is not required.

As defined in the authoritative guidance, a reporting unit is an operating segment, or one level below an operating segment. Historically, we conducted our business in a single operating segment and reporting unit. In the quarter ended March 31, 2019, the Company assessed goodwill impairment by performing a qualitative test for its reporting unit. During the qualitative reviews, the Company considered its cash position and its ability to obtain additional financing in the near term to meet its operational and strategic goals and substantiate the value of its business. Based on the results of the Company's assessment, it was determined that it is more-likely-than-not that the fair value of the reporting units is greater than their carrying amounts. There was no impairment of goodwill during the quarters ended March 31, 2019 and 2018.

The Company reviews other intangible assets for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable or that the useful lives of these assets are no longer appropriate. The authoritative accounting guidance allows a qualitative approach for testing indefinite-lived intangible assets for impairment, similar to the impairment testing guidance for goodwill. It allows the option to first assess qualitative factors (events and circumstances) that could have affected the significant inputs used in determining the fair value of the indefinite-lived intangible asset. The qualitative factors assist in determining whether it is more-likely-than-not that the indefinite-lived intangible asset is impaired. An organization may choose to bypass the qualitative assessment for any indefinite-lived intangible asset in any period and proceed directly to calculating its fair value. The Company's indefinite-lived intangible assets are IPR&D intangible assets. The Company used the qualitative test and concluded that it was more-likely-than-not that all indefinite-lived assets were not impaired and therefore, there were no impairments during the three months ended March 31, 2019 and March 31, 2018, respectively.

Leases

In February 2016, the Financial Accounting Standards Board (the "FASB") established ASC Topic 842, "Leases", by issuing Accounting Standards Update ("ASU") No. 2016-02, which requires lessees to now recognize operating leases on the balance sheet and disclose key information about leasing arrangements. ASC Topic 842 was subsequently amended by ASU No. 2018-01, *Land Easement Practical Expedient for Transition to Topic 842; ASU No. 2018-10, Codification Improvements to Topic 842, Leases; and ASU No. 2018-11, Targeted Improvements*. The new standard establishes a right-of-use ("ROU") model that requires a lessee to recognize a ROU asset and lease liability on the balance sheet for all leases with a term longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern and classification of expense recognition in the income statement. Lessor accounting under the new standard is substantially unchanged. Additional qualitative and quantitative disclosures are also required.

The Company adopted the new standard on January 1, 2019 using the modified retrospective transition method, which applies the provisions of the standard at the effective date without adjusting the comparative periods presented. The Company adopted the following practical expedients and accounting policies elections related to this standard:

- Short-term lease accounting policy election allowing lessees to not recognize ROU assets and liabilities for leases with a term of 12 months or less;
- The option to not separate lease and non-lease components in the Company's lease contracts; and
- The package of practical expedients applied to all of its leases, including (i) not reassessing whether any expired or existing contracts are or contain leases, (ii) not reassessing the lease classification for any expired or existing leases, and (iii) not reassessing the capitalization of initial direct costs for any existing leases.

Adoption of this standard resulted in the recognition of operating lease right-of-use assets and corresponding lease liabilities of $4.2 million and $4.5 million, respectively, on the consolidated balance sheet as of January 1, 2019. In addition, the company reclassified $0.2 million from leasehold improvements & equipment to finance lease right-of-use assets in connection with the adoption of ASC Topic 842. The Company's accounting for finance leases remained substantially unchanged. Disclosures related to the amount, timing and uncertainty of cash flows arising from leases are included in Note 6, Leases.

Preferred stock dividends

Pursuant to the Certificate of Designations, the shares of Series A Preferred Stock earn dividends at a rate of 8.0% once per year on the first, second and third anniversary of the Initial Closing, which was July 29, 2016, payable to the holders of such Series A Preferred Stock in shares of common stock upon conversion. In addition, and subject to provisions detailed more fully in Footnote 9, the shares of Series B Preferred Stock earn dividends at rates of 10%, 15% and 20% once per year on the first, second and third anniversary, respectively, of the filing of the certificate of designation, which was June 19, 2018, for the Series B Preferred Stock with the Secretary of State of the State of Delaware. The dividends are payable to holders of such Series B Preferred Stock in shares of common stock upon conversion. Dividends do not require declaration by the Board of Directors and are accrued annually as of the date the dividend is earned in an amount equal to the applicable rate of the stated value.

Business combination

The Company accounts for acquisitions using the acquisition method of accounting which requires the recognition of tangible and identifiable intangible assets acquired and liabilities assumed at their estimated fair values as of the business combination date. The Company allocates any excess purchase price over the estimated fair value assigned to the net tangible and identifiable intangible assets acquired and liabilities assumed to goodwill. Transaction costs are expensed as incurred in general and administrative expenses. Results of operations and cash flows of acquired companies are included in the Company's operating results from the date of acquisition.

Beneficial conversion feature of convertible preferred stock

The Company accounts for the beneficial conversion feature on its convertible preferred stock in accordance with Accounting Standards Codification ("ASC") 470-20*Debt with Conversion and Other Options*. The Beneficial Conversion Feature ("BCF") of convertible preferred stock is normally characterized as the convertible portion or feature that provides a rate of conversion that is below market value or in-the-money when issued. The Company records a BCF related to the issuance of convertible preferred stock when issued. Beneficial conversion features that are contingent upon the occurrence of a future event are recorded when the contingency is resolved.

To determine the effective conversion price, the Company first allocates the proceeds received to the convertible preferred stock and then uses those allocated proceeds to determine the effective conversion price. If the convertible instrument is issued in a basket transaction (i.e., issued along with other freestanding financial instruments), the proceeds should first be allocated to the various instruments in the basket. Any amounts paid to the investor when the transaction is consummated (e.g., origination fees, due diligence costs) represent a reduction in the proceeds received by the issuer. The intrinsic value of the conversion option is measured using the effective conversion price for the convertible preferred stock on the proceeds allocated to that instrument. The effective conversion price represents proceeds allocable to the convertible preferred stock divided by the number of shares into which it is convertible. The effective conversion price is then compared to the per share fair value of the underlying shares on the commitment date.

The BCF is recognized by allocating the intrinsic value of the conversion option to additional paid-in capital, resulting in a discount on the convertible preferred stock. This discount is accreted from the date on which the BCF is first recognized through the earliest conversion date for instruments that do not have a stated redemption date. The intrinsic value of the BCF is recognized as a deemed dividend on convertible preferred stock over the period specified in the guidance.

Income taxes

Deferred taxes are provided on a liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry forwards and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax bases. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates.

The Company adopted the provisions of Accounting Standard Codification 740-10 and has analyzed its filing positions in jurisdictions where it may be obligated to file returns. The Company believes that its income tax filing position and deductions will be sustained on audit and does not anticipate any adjustments that will result in a material change to its financial position. Therefore, no reserves for uncertain income tax positions have been recorded. The Company's policy is to recognize interest and/or penalties related to income tax matters in income tax expense. The Company had no accrual for interest or penalties as of March 31, 2019.

Since the Company incurred net operating losses in every tax year since inception, all income tax returns are subject to examination and adjustments by the IRS for at least three years following the year in which the tax attributes generated in those years are utilized.

Stock-based compensation

Stock-based compensation to employees consist of stock option grants and restricted shares that are recognized in the consolidated statement of operations based on their fair values at the date of grant.

The Company accounts for equity instruments issued to non-employees in accordance with the provisions of ASC Topic 505, subtopic 50*,Equity-Based Payments to Non-Employees* based upon the fair-value of the underlying instrument. The equity instruments, consisting of stock options granted to consultants, are valued using the Black-Scholes valuation model. The measurement of stock-based compensation is subject to periodic adjustments as the underlying equity instruments vest and is recognized as an expense over the period which services are received. The Company calculates the fair value of option grants utilizing the Black-Scholes pricing model and estimates the fair value of restricted stock based upon the estimated fair value or the common stock. The amount of stock-based compensation recognized during a period is based on the value of the portion of the awards that are ultimately expected to vest. The authoritative guidance requires forfeitures to be estimated at the time stock options are granted and warrants are issued and revised or adjustments made as they occur. The Company accounts for forfeitures as they occur. The term "forfeitures" is distinct from "cancellations" or "expirations" and represents only the unvested portion of the surrendered stock option or warrant.

The resulting stock-based compensation expense for both employee and non-employee awards is generally recognized on a straight-line basis over the requisite service period of the award.

Fair value measurements

ASC 820 "Fair Value Measurements" defines fair value, establishes a framework for measuring fair value in GAAP and expands disclosures about fair value measurements. ASC 820 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC 820 establishes a fair value hierarchy that distinguishes between (1) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (2) an entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy under ASC 820 are described below:

- Level 1 - Quoted prices (unadjusted) in active markets that are accessible at the measurement date for assets or liabilities. The fair value hierarchy gives the highest priority to Level 1 inputs.

- Level 2 - Directly or indirectly observable inputs as of the reporting date through correlation with market data, including quoted prices for similar assets and liabilities in active markets and quoted prices in markets that are not active. Level 2 also includes assets and liabilities that are valued using models or other pricing methodologies that do not require significant judgment since the input assumptions used in the models, such as interest rates and volatility factors, are corroborated by readily observable data from actively quoted markets for substantially the full term of the financial instrument.

- Level 3 - Unobservable inputs that are supported by little or no market activity and reflect the use of significant management judgment. These values are generally determined using pricing models for which the assumptions utilize management's estimates of market participant assumptions.

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

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

Basic and diluted net loss per common share

Basic and diluted net loss per share is computed by dividing net loss available to common shareholders by the weighted average number of shares outstanding during the period. 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 and warrants and conversion of preferred stock, would have an anti-dilutive effect. The following schedule details the number of shares issuable upon the exercise of stock options, warrants and conversion of preferred stock, which have been excluded from the diluted loss per share calculation as the inclusion would be anti-dilutive for the three months ended March 31, 2019 and 2018:

	As of March 31, (in thousands)	
	2019	2018
Stock options	16,572	11,614
Preferred Stock and accrued dividend upon conversion	26,487	14,729
Warrants	5,799	5,958
Total	48,858	32,301

Revenue recognition

The Company applies ASC 606 to its current research grant. The Company currently has a research grant with its customer, the Cystic Fibrosis Foundation ("CFF"). There are no contract assets or liabilities associated with this grant. The contract has a single performance obligation which is the provision of research and development services related to the Company's Cystic Fibrosis development program (the "Program"). The Company provides CFF with progress reports for each study it performs, summarizing the progress toward achieving the goals of the Program, and is required to submit a final progress report within 30 days after the completion of the Program. Subject to the submission and acceptance of milestone progress reports, the Company may be entitled to an additional payment of $0.1 million in the aggregate. As this contract is currently the Company's only contract with a customer, disaggregation of revenue is not required.

Research and development, legal fees and other direct costs

Research and development costs are charged to operations as they are incurred. Legal fees and other direct costs incurred in obtaining and protecting patents are also expensed as incurred, due to the uncertainty with respect to future cash flows resulting from the patents and are included as part of general and administrative expenses in our consolidated statements of operations.

Recent accounting standards

In August 2016, the FASB issued ASU No. 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments”, which amended the existing accounting standards for the statement of cash flows. The amendments provide guidance on eight classification issues related to the statement of cash flows. The amendments should be applied retrospectively to all periods presented. For issues that are impracticable to apply retrospectively, the amendments may be applied prospectively as of the earliest date practicable. The Company adopted the guidance in the first quarter of 2018. The adoption did not have a material impact on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04 “Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment”. The amendment simplifies the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. Instead an entity should perform its goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit’s fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. We are required to apply the amendments for the annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2019. We have evaluated this standard and believe it will not have a material impact on our consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, “Compensation - Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting.” These amendments expand the scope of Topic 718, Compensation - Stock Compensation (which currently only includes share-based payments to employees) to include share-based payments issued to nonemployees for goods or services. Consequently, the accounting for share-based payments to nonemployees and employees will be substantially aligned. The ASU supersedes Subtopic 505-50, Equity - Equity-Based Payments to Non-Employees. This standard is effective for public companies for annual periods beginning after December 15, 2018, including interim periods within those fiscal years, with early adoption permitted as long as ASU 2014-09 has been adopted. The Company adopted the guidance on January 1, 2019. The adoption did not have a material impact on our consolidated financial statements.

In August 2018, the FASB issued 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. We will be evaluating the impact this standard will have on our consolidated financial statements.

On January 1, 2019, the Company adopted the final rule under SEC Release No. 33-10532,*Disclosure Update and Simplification*, which amended certain disclosure requirements that were redundant, duplicative, overlapping, outdated or superseded. In addition, the amendments expanded the disclosure requirements on the analysis of stockholders’ equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders’ equity presented in the balance sheet must be provided in a note or separate statement. The Company has updated its Consolidated Financial Statements to include a reconciliation of the beginning balance to the ending balance of stockholders’ equity for each period for which a statement of comprehensive income is filed.

Note 4 – Leasehold Improvements and Equipment

Leasehold improvements and equipment, summarized by major category, consist of the following ($ in thousands) as of March 31, 2019 and December 31, 2018:

	March 31, 2019	December 31, 2018
Lab equipment	$ 1,059	$ 1,054
Equipment under capital lease	-	272
Leasehold improvements	878	1,156
Total	1,937	2,482
Less: accumulated depreciation and amortization	415	439
Leasehold improvements and equipment, net	$ 1,522	$ 2,043

Depreciation and amortization expense was approximately $47,867 and $47,138 for each of the three months ended March 31, 2019 and 2018.

Note 5 – Accrued Expenses

Accrued Expenses, summarized by major category, consist of the following ($ in thousands) as of March 31, 2019 and December 31, 2018:

	March 31, 2019	December 31, 2018
Payroll and incentives	$ 262	$ 632
General and administrative expenses	363	190
Research and development expenses	384	233
Other	2	32
Total	$ 1,011	$ 1,087

Note 6 – Leases

The Company has various lease agreements with terms up to 10 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 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's weighted-average remaining lease term relating to its operating leases is 8.1 years, with a weighted-average discount rate of 8.37%.

The Company incurred lease expense for its operating leases of $203,428 and $186,320 for quarters ended March 31, 2019 and 2018, respectively.

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

Maturity of Operating Lease Liabilities	
2019	$ 544,293
2020	752,886
2021	684,642
2022	644,642
2023	676,719
Thereafter	$ 2,914,007
Total undiscounted operating lease payments	$ 6,217,189
Less: Imputed interest	1,822,102
Present value of operating lease liabilities	$ 4,395,087

The Company's weighted-average remaining lease term relating to its finance leases is 2.5 years, with a weighted-average discount rate of 7.6%.

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

Maturity of Finance Lease Liabilities		
2019	$	69,772
2020		59,596
2021		34,094
2022		18,900
2023		1,692
Total undiscounted finance lease payments	$	184,054
Less: Imputed interest		13,389
Present value of finance lease liabilities	$	170,665

The Company incurred interest expense on its finance leases of $3,357 and $2,676 for the quarters ended March 31, 2019 and 2018, respectively. The Company incurred amortization expense on its finance lease right-of-use assets of $36,395 and $4,053 for the quarters ended March 31, 2019 and 2018, respectively.

Note 7 – Commitments

Research and development agreements

The Company has financial obligations resulting from Cooperative Research and Development Agreements ("CRADA"s) entered into with the with the National Institute of Allergy and Infectious Diseases ("NIH") as follows:

- On October 29, 2015, the Company agreed to provide funds in the amount of $132,405 per year under a CRADA to support NIH investigators to acquire technical, statistical and administrative support for research activities as well as to pay for supplies and travel expenses. The initial term of the CRADA was three years. The CRADA was amended and renewed on September 17, 2018, for an additional year without creating an additional funding commitment. On November 7, 2018, a second amendment was executed which created an additional funding commitment of $150,000, half of which was paid upon execution of the amendment. The balance is payable in May 2019.

- On February 19, 2016, the Company agreed to provide funds in the amount of $200,000 per year under a CRADA to support NIH investigators in the conduct of clinical research to investigate the safety, efficacy, and pharmacokinetics of encochleated drug products in patients with fungal, bacterial, or viral infections. The initial term of the CRADA was three years. On April 16, 2019, the Company renewed the CRADA for an additional three years with an annual funding commitment of $200,000.

- On April 2, 2019, the Company agreed to provide funds in the amount of $157,405 per year under a CRADA to support NIH investigators in the conduct of clinical research to investigate the safety, efficacy, and pharmacokinetics of encochleated drug products in patients with fungal, bacterial, or viral infections. The term of the CRADA is three years.

Royalty payment rights

On September 12, 2016 the Company conducted a final closing of a private placement offering to accredited investors of shares of the Company's Series A Preferred Stock. As part of this offer, the investors received royalty payment rights if and when the Company generates sales of MAT2203 or MAT2501. Pursuant to the terms of the Series A Certificate of Designation for our outstanding Series A Preferred Stock, the Company may be required to pay royalties of up to $35 million per year. If and when the Company obtains FDA or EMA approval of MAT2203 and/or MAT2501, which the Company does not expect to occur before 2020, if ever, and/or if the Company generates sales of such products, or the Company receives any proceeds from the licensing or other disposition of MAT2203 or MAT2501, the Company is required to pay to the holders of our Series A Preferred Stock, subject to certain vesting requirements, in aggregate, a royalty equal to (i) 4.5% of Net Sales (as defined in the Certificate of Designations), subject in all cases to a cap of $25 million per calendar year, and (ii) 7.5% of Licensing Proceeds (as defined in the Series A Certificate of Designation), subject in all cases to a cap of $10 million per calendar year. The Royalty Payment Rights will expire when the patents covering the applicable product expire, which is currently expected to be in 2033.

License agreement

Through the acquisition of Aquarius, the Company acquired a license from Rutgers University, The State University of New Jersey (successor in interest to the University of Medicine and Dentistry of New Jersey) for the LNC platform delivery technology. The Amended and Restated Exclusive License Agreement between Aquarius and Rutgers provides for, among other things, (1) royalties on a tiered basis between low single digits and the mid-single digits of net sales of products using such licensed technology, (2) a one-time sales milestone fee of $100,000 when and if sales of products using the licensed technology reach the specified sales threshold and (3) an annual license fee of initially $10,000, increasing to $50,000 over the term of the license agreement.

Employment agreements

The Company also has employment agreements with certain employees which require the funding of a specific level of payments, if certain events, such as a change in control, termination without cause or retirement, occur.

Note 8 – Related Parties

Aegis Capital Corp. and Mr. Adam Stern

Mr. Adam Stern, a director of the Company, has been Head of Private Equity Banking at Aegis Capital Corp. and CEO of SternAegis Ventures since 2012. The Company previously engaged with Aegis Capital for its finance raises between 2013 through 2018. For the quarters ended March 31, 2019 and 2018, no related party transactions were entered into.

Note 9 – Stockholders' Equity

Common Stock

On March 19, 2019, the Company closed an underwritten public offering of its common stock. This offering was made pursuant to an underwriting agreement between the Company and BTIG, LLC. The offering resulted in the sale of 27,272,727 shares to the public at a price of $1.10 per share. The Company generated gross proceeds of $30.5 million. Net proceeds after deducting underwriting discounts and commissions and other estimated offering expenses are approximately $27.9 million. In addition, the Company granted the underwriters a 30-day option (the "option") to purchase up to an additional 4,090,909 shares of common stock subject to the same terms and conditions. On March 28, 2019, an additional 2,199,259 shares were sold pursuant to the option at a price of $1.10 per share, resulting in net proceeds to the Company of approximately $2.3 million.

Preferred Stock

In accordance with the Certificate of Incorporation, the Company is authorized to issue 10,000,000 preferred shares at a par value of $0.001. In connection with the 2016 Private Placement, on July 26, 2016, the Company filed the Series A Certificate of Designation with the Secretary of the State of Delaware to designate the preferences, rights and limitations of the Series A Preferred Stock. Pursuant to the Series A Certificate of Designation, the Company designated 1,600,000 shares of the Company's previously undesignated preferred shares as Series A Preferred Stock. In connection with the 2018 offering, 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.

Series A Preferred Stock

As of March 31, 2019, the Company had 1,467,858 shares of Series A Preferred Stock outstanding.

Conversion:

Each share of Series A Preferred Stock is convertible at the option of the holder into such number of shares of the Company's common stock equal to the number of shares of Series A Preferred Stock to be converted, multiplied by the stated value of $5.00 (the "Stated Value"), divided by the Conversion Price in effect at the time of the conversion (the initial conversion price is $0.50, subject to adjustment in the event of stock splits, stock dividends, and a "fundamental transaction"). Based on the current conversion price and number of shares outstanding, the Series A Preferred Stock is convertible into 14,678,580 shares of common stock. A "fundamental transaction" means: (i) our merger or consolidation with or into another entity, (ii) any sale of all or substantially all of our assets in one transaction or a series of related transactions, or (iii) any reclassification of our Common Stock or any compulsory share exchange by which Common Stock is effectively converted into or exchanged for other securities, cash or property. Each share of Series A Preferred Stock will automatically convert into common stock upon the earlier of (i) notice by the Company to the holders that the Company has elected to convert all outstanding Series A Preferred Stock; provided however that in the event the Company elects to force automatic conversion pursuant to this clause (i), the conversion date for purposes of calculating the accrued Dividend (as defined below) is deemed to be the July 29, 2019, which is the third anniversary of the Initial Closing, (ii) three years from the Initial Closing, (iii) the approval of the Company's MAT2203 product candidate by the U.S. Food and Drug Administration or the European Medicines Agency (the "Regulatory Approval") or (iv) the Regulatory Approval of the Company's MAT2501 product candidate.

Beneficial Conversion Feature- Series A Preferred Stock (deemed dividend):

Each share of Series A Preferred Stock is convertible into shares of common stock, at any time at the option of the holder at a conversion price of $0.50 per share. On July 29, 2016, August 16, 2016, and September 12, 2016, the date of issuances of the Series A Preferred Stock, the publicly traded common stock prices were $0.67, $0.70, and $1.00 per share, respectively.

Based on the guidance in ASC 470-20-20, the Company determined that a beneficial conversion feature exists, as the effective conversion price for the Series A Preferred Stock at issuance was less than the fair value of the common stock into which the preferred shares are convertible. A beneficial conversion feature based on the intrinsic value of the date of issuances for the Series A Preferred Stock was approximately $4.4 million. During the year ended December 31, 2016, the beneficial conversion amount of approximately $4.4 million was then accreted back to the preferred shares as a deemed dividend and charged to accumulated deficit as the conversion rights were 100% effective at the time of issuance.

Liquidity Value and Dividends:

Pursuant to the Certificate of Designations, the Series A Preferred Stock accrue dividends at a rate of 8.0% once per year on the anniversary date of the Initial Closing, payable to the holders of such Series A Preferred Stock in shares of common stock upon conversion. Dividends of approximately $1.2 million have been accrued as paid-in-kind through March 31, 2019, with $0.6 being accumulated in each of 2018 and 2017. The holders of Series A Preferred Stock vote on an as converted basis with the Company's common stock holders. Upon any dissolution, liquidation or winding up, whether voluntary or involuntary, holders of Series A Preferred Stock are entitled to (i) first receive distributions out of Company assets in an amount per share equal to the Stated Value plus all accrued and unpaid dividends, whether capital or surplus before any distributions shall be made on any shares of common stock and (ii) second, on an as-converted basis alongside the common stock holders.

Royalty:

The Series A Preferred Stock includes the right, as a group, to receive: (i) 4.5% of the net sales of MAT2203 and MAT2501, in each case from and after the date, respectively, such candidate has received FDA or EMA approval, and (ii) 7.5% of the proceeds, if any, received by the Company in connection with the licensing or other disposition by the Company of MAT2203 and/or MAT2501 ("Royalty Payment Rights"). The royalty is payable so long as the Company has valid patents covering MAT2203 and MAT2501, as applicable. The Royalty Payment Rights are unsecured obligations of the Company. The royalty payment will be allocated to the holders based on their pro rata ownership of vested Series A Preferred Stock. The royalty rights that are part of the Series A Preferred Stock will vest, in equal thirds, upon each of the July 29, 2017, July 29, 2018, and July 29, 2019, which are the first, second and third anniversary dates of the Initial Closing, (each a "Vesting Date"); provided however, if the Series A Preferred Stock automatically converts into common stock prior to the 36 month anniversary of the initial closing, then the royalty rights that are part of the outstanding Series A Preferred Stock shall be deemed to be fully vested as of the date of conversion. Even if the Series A Preferred Stock is purchased after the initial closing, the vesting periods for the royalty rights that are part of the Series A Preferred Stock shall still be based on the Vesting Dates. During the first 36 months following the initial closing, the right to receive a royalty will follow the Series A Preferred Stock; after July 29, 2019 the royalty payment rights may be transferred separately from the Series A Preferred Stock subject to available exemption from registration under applicable securities laws. The Company believes that such rights are not separable free-standing instruments requiring bifurcation at the date of transaction. The Company may recognize a deemed dividend for the estimated fair value of the vested portion of the royalty rights in future periods. As of March 31, 2019, no accrual has been recorded for royalty payments as it is not probable at this time that any amount will be paid.

Classification:

The shares of Series A Preferred Stock are classified within permanent equity on the Company's consolidated balance sheet as they do not meet the criteria that would require presentation outside of permanent equity under ASC 480 *Distinguishing Liabilities from Equity*.

Series B Preferred Stock

On June 19, 2018, the Company entered into a placement agency agreement with ThinkEquity, a Division of Fordham Financial Management, Inc., as placement agent, relating to the offering, issuance and sale of up to 8,000 shares of the Company's Series B Convertible Preferred Stock, par value $0.0001 per share with a stated value of $1,000 per share which are convertible into an aggregate of up to 16,000,000 shares of the Company's common stock, par value $0.0001 per share at an initial conversion price of $0.50 per share of common stock and an additional up to 7,200,000 shares of common stock issuable upon payment of dividends under the Series B Preferred Stock .The offering closed on June 21, 2018 raising a gross amount of $8 million with a net raise of $7.1 million after deducting issuance costs. The placement agent received 7% commission on the gross proceeds, 1% of the gross proceeds to cover non-accountable expenses and 240,000 warrants fair valued at approximately $89,000 treated as a reduction to gross proceeds, that are exercisable over a 5-year period at an exercise price of $0.75 per share.

As of March 31, 2019, there were 4,730 shares of Series B Preferred Stock outstanding.

Conversion:

Optional Conversion. Subject to the Beneficial Ownership Limitation, each share of Series B Preferred Stock will be convertible into shares of common stock at any time at the option of the holder at an initial conversion price of $0.50 per share subject to adjustment for reverse splits, stock combinations and similar changes as provided in the certificate of designation. Based on the current conversion price and number of shares outstanding, the Series B Preferred Stock is convertible into 9,460,000 shares of common stock. Dividends will not accrue and will not be paid following optional conversion. During the quarter ended March 31, 2019, 89 shares of Series B preferred stock were converted into shares of common stock. No shares were converted during the quarter ended March 31, 2018.

Automatic Conversion. Subject to the Beneficial Ownership Limitation described below, each share of Series B Preferred Stock shall automatically convert into 2,000 shares of common stock at an initial conversion price of $0.50 per share upon the earlier of (i) the first FDA approval of one of our product candidates, (ii) the 36-month anniversary of the of the filing of the certificate of designation for the Series B Preferred Stock with the Secretary of State of the State of Delaware (the "COD Effective Date" which is June 19, 2018) or (iii) the consent to conversion by holders of at least 50.1% of the outstanding shares of Series B Preferred Stock. In the event the Series B Preferred Stock automatically converts into common stock prior to the 36 month anniversary of the COD Effective Date, the holder on the date of such conversion shall also be entitled to receive those dividends which would have been payable after the conversion date, as if the shares of Series B Preferred Stock had remained unconverted and outstanding through the 36 month anniversary of the COD Effective Date. Such dividend amount shall be payable as set forth above in shares of common stock upon such automatic conversion.

Beneficial Conversion Feature. Both the Optional and Automatic conversion features were evaluated to determine if either represents a BCF. Based on the guidance in ASC 470-20-30, the Company determined that a BCF does not exist, as the effective conversion price for the Series B Preferred Stock at issuance was equal to the fair value of the common stock into which the preferred shares are convertible.

Beneficial Ownership Limitation. The Company may not affect any optional or automatic conversion of the Series B Preferred Stock, or issue shares of common stock as dividends and a holder does not have the right to convert any portion of the Series B Preferred Stock to the extent that, after giving effect to such conversion such holder would beneficially own in excess of the Beneficial Ownership Limitation, or such holder, together with such holder's affiliates, and any persons acting as a group together with such holder or affiliates, would beneficially own in excess of the Beneficial Ownership Limitation. The "Beneficial Ownership Limitation" is 4.99% of the number of shares of common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon conversion of Series B Preferred Stock held by the applicable holder. A holder may, prior to issuance of the Series B Preferred Stock or, with 61 days prior notice to us, elect to increase or decrease the Beneficial Ownership Limitation; provided, however, that in no event may the Beneficial Ownership Limitation exceed 9.99%.

Liquidity Value and Dividends:

Dividends. Subject to the Beneficial Ownership Limitation described above, holders of the Series B Preferred Stock will be entitled to receive dividends payable only to the holders of Series B Preferred Stock in common stock upon conversion 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 the 12 month anniversary of the COD Effective Date, (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 the 24-month anniversary of the COD Effective Date 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 the 36-month anniversary of the COD Effective Date. In the event a purchaser in this offering no longer holds Series B Preferred Stock as of the 12-month anniversary, the 24-month anniversary or the 36-month anniversary, such purchaser will not be entitled to receive any dividends on such anniversary date. Dividends of approximately $0.3 were accumulated in 2018.

In the event a fundamental transaction is consummated prior to the automatic conversion of the Series B Preferred Stock, the dividends will be accelerated and paid to the extent not previously paid. In addition, holders of Series B Preferred Stock will be entitled to receive dividends equal, on an as-if-converted to shares of common stock basis, and in the same form as dividends actually paid on shares of the common stock when, as, and if such dividends are paid on shares of the common stock. Notwithstanding the foregoing, to the extent that a holder's right to participate in any dividend in shares of common stock to which such holder is entitled would result in such Holder exceeding the Beneficial Ownership Limitation, then such holder shall not be entitled to participate in any such dividend to such extent and the portion of such shares that would cause such holder to exceed the Beneficial Ownership Limitation shall be held in abeyance for the benefit of such holder until such time, if ever, as such holder's beneficial ownership thereof would not result in such holder exceeding the Beneficial Ownership Limitation.

Pursuant to the Series B Certificate of Designation, the liquidation value of a share of Series B Preferred Stock is equal to the stated value of $1,000 per share (as adjusted for stock splits, stock dividends, combinations or other recapitalizations of the Series A Preferred Stock) plus any earned but unpaid dividends.

Classification:

The shares of Series B Preferred Stock are classified within permanent equity on the Company's condensed consolidated balance sheet as they do not meet the criteria that would require presentation outside of permanent equity under ASC 480 *Distinguishing Liabilities from Equity*.

Warrants

As of March 31, 2019, the Company had outstanding warrants to purchase an aggregate of 5,799,429 shares of common stock at exercise prices ranging from $0.50 to $0.75 per share.

The 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 of the warrants. No fractional shares will be issued upon the exercise of the warrants. The exercise price and the number of warrant shares purchasable upon the exercise of the Investor Warrants (as opposed to Placement Agent Warrants) are subject to adjustment upon the occurrence of certain events, which include stock dividends, stock splits, combinations and reclassifications of the Company capital stock or similar "organic changes" to the equity structure of the Company (see Warrant table below). Accordingly, pursuant to ASC 815, the warrants are classified as equity.

The Company may call the warrants, other than the Placement Agent Warrants, at any time the common stock trades above $3.00 (for 20 million warrants issued in 2015) for twenty (20) consecutive days following the effectiveness of the registration statement covering the resale of the shares of common stock underlying the warrants, provided that the warrants can only be called if such registration statement is current and remains effective at the time of the call and provided further that the Company can only call the Investor Warrants for redemption, if it also calls all other warrants for redemption on the terms described above. The Placement Agent Warrants do not have a redemption feature. The Placement Agent Warrants may be exercised on a "cashless" basis. Such term is a contingent feature and within the control of the Company, therefore does not require liability classification.

A summary of warrants outstanding as of March 31, 2019 is presented below, all of which are fully vested:

	Shares (in thousands)
Outstanding at December 31, 2017	5,958**
Issued	240
Exercised	-
Tendered	-
Expired	(399)
Outstanding at December 31, 2018	5,799*
Issued	-
Exercised	-
Tendered	-
Expired	-
Outstanding at March 31, 2019	5,799*

* Weighted average exercise price for outstanding warrants is $0.61.
** Weighted average exercise price for outstanding warrants is $0.70.

Note 10 – Stock-based Compensation

In August 2013, the Company adopted the 2013 Equity Compensation Plan (the "Plan"), which provides for the granting of incentive stock options, nonqualified stock options, restricted stock units, performance units, and stock purchase rights. Options under the Plan may be granted at prices not less than 100% of the fair value of the shares on the date of grant as determined by the Board Committee. The Board Committee determines the period over which the options become exercisable subject to certain restrictions as defined in the Plan, with the current outstanding options generally vesting over three years. The term of the options is no longer than ten years. As of March 31, 2019, the Company had 22,421,644 shares of common stock authorized for issuance under the plan.

With the approval of the Board of Directors and majority 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 (with Board approval), 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 Company recognized stock-based compensation expense (options and restricted share grants) in its condensed consolidated statements of operations as follows ($ in thousands):

	Three Months Ended March 31,	
	2019	2018
Research and Development	$ 299	$ 573
General and Administrative	505	1,175
Total	$ 804	$ 1,748

The following table contains information about the Company's stock plan at March 31, 2019:

	Awards Reserved for Issuance	Awards Issued	Awards Available for Grant
2013 Equity Compensation Plan (in thousands)	22,421*	18,684**	3,737

* Increased by 4,532 thousand on January 1, 2019, representing 4% of the total number of shares of commons stock outstanding on December 31, 2018.
** Includes both stock grants and option grants

The following table summarizes the Company' stock option activity and related information for the period from December 31, 2018 to March 31, 2019 (options in thousands):

	Number of Options	Weighted Average Exercise Price	Weighted Average Contractual Term in Years
Outstanding at December 31, 2018	13,457	$ 1.13	6.2
Granted	3,220	$ 1.05	
Exercised	-		
Forfeited	(71)	$ 1.31	
Cancelled	-		
Expired	(34)	$ 2.33	
Outstanding at March 31, 2019	16,572	$ 1.11	6.7

As of March 31, 2019, the number of vested shares underlying outstanding options was 10,193,884 at a weighted average exercise price of $1.16. The aggregate intrinsic value of in-the-money options outstanding as of March 31, 2019 was $3.4 million. The aggregate intrinsic value is calculated as the difference between the Company's closing stock price of $1.09 on March 29, 2019, which was the last trading day of the reporting period, and the exercise price of options, multiplied by the number of options. As of March 31, 2019, there was approximately $5.0 million of total unrecognized share-based compensation. Such costs are expected to be recognized over a weighted average period of approximately 2.8 years.

All options expire ten years from date of grant. Options granted to employees prior to 2018 vest entirely and evenly over three years. The Company changed its standard vesting terms at the end of 2017 and recent option grants to employees vest over four years, with 25% of the shares vesting on the first annual anniversary of grant and the remaining shares vesting in 36 equal monthly installments over the following 3 years. A portion of options granted to consultants vests over four years, with the remaining vesting being based upon the achievement of certain performance milestones, which are tied to either financing or drug development initiatives.

During the three months ending March 31, 2019 and 2018, the Company granted restricted stock awards for 53,786 and 286,433 shares of common stock, respectively. These awards are typically granted to members of the Board of Directors as payment in lieu of cash fees or as payment pursuant to a consulting agreement. The Company values restricted stock awards at the fair market value on the date of grant. The Company recorded as general and administrative expense $117 thousand and $172 thousand in the condensed consolidated statement of operations for the three months ended March 31, 2019 and 2018, respectively.

The Company recognizes compensation expense for stock option awards and restricted stock awards on a straight-line basis over the applicable service period of the award. The service period is generally the vesting period, with the exception of awards granted subject to a consulting agreement, whereby the award vesting period and the service period defined pursuant to the terms of the consulting agreement may be different. Upon adoption of ASU No. 2018-07 on January 1, 2019, stock options issued to consultants are recorded at fair value on the date of grant and the award is recognized as an expense on a straight-line basis over the requisite service period. The following weighted-average assumptions were used to calculate share-based compensation:

	For the Three Months ended March 31,	
	2019	2018
Volatility	110.85% - 111.34%	105.85% - 107.95%
Risk-free interest rate	2.46% - 2.65%	2.29% - 2.71%
Dividend yield	0.0%	0.0%
Expected life	6.0 years	6.0 years

The Company does not have sufficient historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior. Hence, the Company uses the “simplified method” described in Staff Accounting Bulletin (SAB) 107 to estimated expected term of share option grants.

The expected stock price volatility assumption is based the Company’s historical stock price volatility.

Note 11 – Subsequent Events

On April 2, 2019, the Company agreed to provide funds in the amount of $157,405 per year under a Cooperative Research and Development Agreement (“ CRADA”) to support the National Institute of Allergy and Infectious Diseases investigators in the conduct of clinical research to investigate the safety, efficacy, and pharmacokinetics of encochleated drug products in patients with fungal, bacterial, or viral infections. The term of the CRADA is three years.

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, 2018 and in other reports we file with the Securities and Exchange Commission, particularly those under "Risk Factors." Dollars in tabular format are presented in thousands, except per share data, or otherwise indicated.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report on Form 10-Q contains forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 under Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended . Forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, assumptions, estimates, intentions and future performance, and involve known and unknown risks, uncertainties and other factors, which may be beyond our control, and which may cause our actual results, performance or achievements to be materially different from future results, performance or achievements expressed or implied by such forward-looking statements. All statements other than statements of historical fact are statements that could be forward-looking statements. You can identify these forward-looking statements through our use of words such as "may," "can," "anticipate," "assume," "should," "indicate," "would," "believe," "contemplate," "expect," "seek," "estimate," "continue," "plan," "point to," "project," "predict," "could," "intend," "target," "potential" and other similar words and expressions of the future.

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

- our ability to raise additional capital to fund our operations and to develop our product candidates, including MAT9001 and MAT2203;
- our anticipated timing for preclinical development, regulatory submissions, commencement and completion of clinical trials and product approvals;
- our history of operating losses in each year since inception and the expectation that we will continue to incur operating losses for the foreseeable future;
- our dependence on product candidates, which are still in an early development stage;
- our reliance on proprietary LNC drug delivery technology platform, which is licensed to us by Rutgers University;
- our ability to manufacture GMP batches of our product candidates which are required for pre-clinical and clinical trials and, subsequently, if regulatory approval is obtained for any of our products, our ability to manufacture commercial quantities;
- our ability to complete required clinical trials for our product candidates and obtain approval from the FDA or other regulatory agents in different jurisdictions;
- our expectations of the attributes of our product and development candidates, including pharmaceutical properties, efficacy, safety and dosing regimens;
- our dependence on third-parties, including third-parties to manufacture and third-party CROs (including, without limitation, the National Institutes of Health (NIH) to conduct our clinical trials;
- our ability to maintain or protect the validity of our patents and other intellectual property;

- our ability to retain and recruit key personnel;
- our ability to internally develop new inventions and intellectual property;
- interpretations of current laws and the passages of future laws;
- our lack of a sales and marketing organization and our ability to commercialize products, if we obtain regulatory approval, whether alone or through potential future collaborators;
- our ability to successfully commercialize, and our expectations regarding future therapeutic and commercial potential with respect to, our product candidates;
- the accuracy of our estimates regarding expenses, ongoing losses, future revenue, capital requirements and our needs for or ability to obtain additional financing;
- developments and projections relating to our competitors or our industry;
- our ability to adequately support growth; and
- the factors listed under the headings "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2018, 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) the streamlined development under Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act, or FDCA of our lead product candidate, MAT9001, 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 lipid nano-crystal (LNC) platform delivery technology to solve complex challenges relating to the delivery of small molecules, gene therapies, vaccines, proteins and peptides, including MAT2203, our lead product candidate based on the LNC technology. In general, the development timeline for a 505(b)(2) New Drug Application, or NDA, is shorter and less expensive than an NDA developed under Section 505(b)(1) for new chemical entities that have never been approved in the United States. Based upon MAT9001's unique mixture of highly purified omega-3 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 the streamlined and strategic development of MAT9001 for the treatment of cardiovascular and metabolic conditions and the application of our LNC platform delivery technology to solve complex challenges relating to the delivery of small molecules, gene therapies, proteins/peptides, and vaccines. Key elements of our strategy include:

- Strategically advancing MAT9001 into clinical development toward an initial indication for the treatment of severe hypertriglyceridemia (≥500 mg/dL) (SHTG) with the goal of creating additional data further demonstrating the differentiation of MAT9001 from other prescription omega-3 drugs being used to treat a mixed dyslipidemic patient population in a rapidly emerging and expanding omega-3 market.
- Expanding application of our lipid nano-crystal (LNC) delivery platform into the gene therapy space through collaborations with sophisticated and well-resourced biotech and pharmaceutical companies in innovative areas of medicine.
- Driving MAT2203 to efficacy data in the treatment of cryptococcal meningitis, an area of significant unmet medical need, with the non-dilutive financial support of the NIH

We have incurred losses for each period from inception. Our net loss was approximately $4.1 million for each of the three months ended March 31, 2019 and 2018. 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.

Financial Operations Overview

Revenue

We did not generate any revenue during the three months ended March 31, 2019. During the three months ended March 31, 2018 we generated approximately $30 thousand in contract research revenues, resulting from a grant with the Cystic Fibroses Foundation. Our ability to generate product revenue, which we do not expect to occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our early-stage product candidates. The Company has adopted ASC 606 as of January 1, 2018. For the year ended December 31, 2018, there were no changes to our opening balances upon the adoption of ASC 606 and the amounts which would have been reported under the standards in effect prior to adoption.

Research and Development Expenses

Research and development expenses consist of costs incurred for the development of product candidates 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 National Institutes of Health (NIH), that conduct our pre-clinical or clinical trials; and
- employee-related expenses, including salaries and stock-based compensation expense for those employees involved in the research and development process.

The table below summarizes our direct research and development expenses for our product candidates and development platform for the three months ended March 31, 2019 and 2018. 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 option expenses), travel and medical education.

	Three Months Ended March 31, (in thousands)	
	2019	2018
Direct research and development expenses:		
Manufacturing process development	$ 78	$ 47
Preclinical trials	267	452
Clinical development	499	379
Regulatory	57	81
Internal staffing, overhead and other	1,414	1,234
Total research & development	$ 2,315	$ 2,193

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 2019, we will be focused on advancing our lead product candidate, MAT9001 into clinical development toward an initial indication for the treatment of severe hypertriglyceridemia, expanding application of our LNC delivery platform through collaborations with third parties, and driving MAT2203 to efficacy data in the treatment of cryptococcal meningitis.

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 2019 due to the increased expenses related to our status as a publicly traded company, including expenses in support of compliance with the requirements of Section 404 of the Sarbanes Oxley Act as well as investor relations, protection of our intellectual property and insurance costs.

Other Income, net

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

Application of Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in our financial statements. On an ongoing basis, we evaluate our estimates and judgments. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Our significant accounting policies are described in more detail in the notes to our financial statements appearing elsewhere in our 2018 Annual Report on Form 10-K. We believe the following accounting procedures to be most critical to the judgments and estimates used in the preparation of our financial statements.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued expenses, particularly for product development costs. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments as necessary. Examples of estimated accrued research and development expenses include:

- fees paid to contractors in connection with the development of manufacturing processes for products in development;
- fees paid to CROs in connection with preclinical and clinical development activities;
- fees paid to contractors in connection with preparation of regulatory submissions; and
- fees paid to vendors related to product manufacturing, development and distribution of clinical study supplies.

We base our expenses related to pre-clinical and human studies on our estimates of the services received and efforts expended pursuant to contracts with multiple development contractors that conduct and manage development work and studies on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the clinical expense. Payments under some of these contracts may depend on factors such as the successful enrollment of subjects and the completion of specific study milestones. In accruing service fees, we will estimate the time period over which services will be performed, the completion of certain tasks, enrollment of subjects, study center activation and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we will adjust the accrual or prepayment accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in us reporting amounts that are too high or too low in any particular period. Based on limited historical experience, actual results have not been materially different from our estimates.

Identifiable Intangible Assets

Identifiable intangible assets are measured at their respective fair values and are not amortized until commercialization. Once commercialization occurs, these intangible assets will be amortized over their estimated useful lives. The fair values assigned to our intangible assets are based upon reasonable estimates and assumptions given available facts and circumstances. Unanticipated events or circumstances may occur that may require us to review the assets for impairment. Events or circumstances that may require an impairment assessment include negative clinical trial results, material delays in our development program or sustained decline in market capitalization.

Indefinite-lived intangible assets are not subject to periodic amortization. Rather, indefinite-lived intangibles are reviewed for impairment by applying a fair value-based test on an annual basis or more frequently if events or circumstances indicate impairment may have occurred. Events or circumstances that may require an interim impairment assessment are consistent with those described below. We perform our annual impairment test in December of each year.

Research and Development Expenses

Research and development expenses are charged to operations as they are incurred.

Leases

On January 1, 2019, we adopted Accounting Standards Update No. 2016-02 and its related amendments, which changed our accounting for leases. As a result of this change, we recognized right-of-use assets and lease liabilities on the consolidated balance sheet for all leases with a term longer than 12 months and classified them as either operating or finance leases. The right-of-use assets and lease liabilities have been measured by the present value of remaining lease payments over the lease term using our incremental borrowing rates or implicit rates, when readily determinable. See Note 1 and Note 6 of Notes to Unaudited Condensed Consolidated Financial Statements contained elsewhere in this report for additional details related to our adoption of the new lease accounting standard.

Stock-Based Compensation

Option Grants

We account for all share-based compensation payments issued to employees, directors, and non-employees using an option pricing model for estimating fair value. Accordingly, share-based compensation expense is measured based on the estimated fair value of the awards on the date of grant. We recognize compensation expense for the portion of the award that is ultimately expected to vest over the period during which the recipient renders the required services to us using the straight-line single option method. In accordance with authoritative guidance, we re-measure the fair value of non-employee share-based awards as the awards vest, and recognize the resulting value, if any, as expense during the period the related services are rendered. The Company accounts for forfeitures of all share-based awards as they occur.

Significant Factors, Assumptions and Methodologies Used in Determining Fair Value

We apply the fair value recognition provisions of ASC Topic 718, *Compensation-Stock Compensation*, which we refer to as ASC 718. We recognize share-based compensation expense ratably over the requisite service period, which in most cases is the vesting period of the award. Calculating the fair value of share-based awards requires that we make highly subjective assumptions.

We use the Black-Scholes option pricing model to value our stock option awards. Use of this valuation methodology requires that we make assumptions as to the volatility of our common stock, the expected term of our stock options, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield. As a publicly-held company, we utilized our historical data to estimate expected stock price volatility.

We use the simplified method as prescribed by the Securities and Exchange Commission Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term of stock option grants to employees as we do not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term of stock options granted to employees.

We recognize compensation expense for stock option awards on a straight-line basis over the applicable service period of the award. The service period is generally the vesting period, with the exception of options granted subject to a consulting agreement, whereby the option vesting period and the service period defined pursuant to the terms of the consulting agreement may be different. Prior to January 1, 2019, stock options issued to consultants were revalued quarterly until fully vested, with any change in fair value expensed. Upon adoption of ASU No. 2018-07 on January 1, 2019, stock options issued to consultants are recorded at fair value on the date of grant and the award is recognized as an expense on a straight-line basis over the requisite service period. For awards subject to performance conditions, the Company recognizes stock-based compensation expense on a straight-line basis over the requisite service period when it is probable that the performance condition will be achieved. The following range of assumptions were used to value options granted for the three months ended March 31, 2019 and 2018 and to re-measure stock options issued to consultants:

	For the Three Months ended March 31,	
	2019	2018
Volatility	110.85% - 111.34%	105.85% - 107.95%
Risk-free interest rate	2.46% - 2.65%	2.29% - 2.71%
Dividend yield	0.0%	0.0%
Expected life	6.0 years	6.0 years

The expected stock price volatility assumption was determined by examining the Company's historical volatility. We will continue to analyze our expected term assumptions as more historical data for our common stock becomes available. The risk-free interest rate assumption is based on the U.S. Treasury instruments whose term was consistent with the expected term of our stock options. The expected dividend assumption is based on our history and expectation of dividend payouts.

We have never paid dividends on our common stock and do not anticipate paying dividends on our common stock in the foreseeable future. Accordingly, we have assumed no dividend yield for purposes of estimating the fair value of our share-based compensation.

Stock-based compensation expense associated with stock options and restricted stock granted to employees and non-employees was approximately $0.8 million and $1.7 million for three months ended March 31, 2019 and 2018, respectively. As of March 31, 2019, we had approximately $5.0 million of total unrecognized share-based compensation expense, which we expect to recognize over a weighted-average remaining vesting period of approximately 2.8 years. In future periods, our share-based compensation expense is expected to increase as a result of recognizing our existing unrecognized share-based compensation for awards that will vest and as we issue additional share-based awards to attract and retain our employees.

The closing price of our stock (on the date of a grant) is used as an input in the measurement of stock-based compensation.

The 2013 Equity Compensation Plan, as amended, or the Plan, is the only active plan pursuant to which options to acquire common stock or restricted stock awards can be granted and are currently outstanding. As of March 31, 2019, there were 3.7 million shares of our common stock available for issuance under the Plan.

As of March 31, 2019, we had outstanding options to purchase an aggregate of approximately 16.6 million shares of our common stock with a weighted average exercise price of $1.11. Of those outstanding options, approximately 10.2 million were vested at a weighted average exercise price of $1.16 per share. The computation of the aggregate intrinsic value is based upon the difference between the original exercise price of the options and our estimate of the deemed fair value of our common stock at March 29, 2019, the last trading day or the reporting period. The total intrinsic value of options outstanding and vested at March 31, 2019 was approximately $3.4 million.

Basic and Diluted Net Loss Per Share of Common Stock

We compute basic net loss per share of common stock by dividing net loss applicable to common stockholders by the weighted-average number of shares of common stock outstanding during the period, excluding the dilutive effects stock options. We compute diluted net loss per share of common stock by dividing the net loss applicable to common stockholders by the sum of the weighted-average number of shares of common stock outstanding during the period plus the potential dilutive effects stock options outstanding during the period calculated in accordance with the treasury stock method, but such items are excluded if their effect is anti-dilutive. Because the impact of these items is anti-dilutive during periods of net loss, there was no difference between our basic and diluted net loss per share of common stock for the three months ended March 31, 2019 and 2018.

Emerging Growth Company Status

Under Section 107(b) of the Jumpstart Our Business Startups Act of 2012, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Current Operating Trends

Our current research and development efforts are focused on developing MAT9001. Our research and development 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 research and development 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

Three Months Ended March 31, 2019 and 2018

The following table summarizes our revenues and operating expenses for the three months ended March 31, 2019 and 2018:

	Three Months Ended March 31, ($ in thousands)	
	2019	**2018**
Revenues	$ -	$ 30
Expenses:		
Research and development	$ 2,315	$ 2,193
General and administrative	1,788	1,958
Operating Expenses	$ 4,103	$ 4,151

Revenues. We did not generate any revenue during the three months ended March 31, 2019. During the three months ended March 31, 2018 we generated approximately $30 thousand in contract research revenues, resulting from a grant with the Cystic Fibroses Foundation.

Research and Development expenses. Research and Development (R&D) expense for the three months ended March 31, 2019 was approximately $2.3 million, representing an increase of approximately $0.1 million over the prior year period. R&D expenses increased primarily due to higher clinical development and overhead costs more than offsetting a decrease in preclinical trial costs.

General and Administrative expenses. General and administrative expense for the three months ended March 31, 2019 was approximately $1.8 million, representing a decrease of approximately $0.2 million the over prior year period. The decrease in general and administrative expense was primarily due to lower compensation expense.

Liquidity and capital resources

Sources of Liquidity

We have funded our operations since inception primarily through private placements of our preferred stock and our common stock and common stock warrants. As of March 31, 2019, we have raised a total of approximately $100.1 million in gross proceeds and $90.9 million, net, from sales of our equity securities.

As of March 31, 2019, we had cash and cash equivalents totaling $39.4 million.

2019 Common Stock Offering

On March 19, 2019, the Company closed an underwritten public offering of its common stock. The offering resulted in the sale of 27,272,727 shares to the public at a price of $1.10 per share. The Company generated net proceeds of approximately $27.9 million. The Company granted the underwriters a 30-day option (the "option") to purchase up to an additional 4,090,909 shares of common stock subject to the same terms and conditions. On March 28, 2019, an additional 2,199,259 shares were sold pursuant to the option at a price of $1.10 per share, resulting in net proceeds to the Company of approximately $2.3 million.

2018 Series B Preferred Stock Offering

On June 19, 2018, the Company entered into a placement agency agreement with ThinkEquity, a Division of Fordham Financial Management, Inc., as placement agent , relating to the offering, issuance and sale of up to 8,000 shares of the Company's Series B Convertible Preferred Stock, par value $0.0001 per share with a stated value of $1,000 per share which are convertible into an aggregate of up to 16,000,000 shares of the Company's common stock, par value $0.0001 per share at an initial conversion price of $0.50 per share of Common Stock and an additional up to 7,200,000 shares of Common Stock issuable upon payment of dividends under the Series B Preferred Stock . The offering closed on June 21, 2018 raising a gross amount of $8 million with a net raise of $7.1 million after deducting issuance costs.

Cash Flows

The following table sets forth the primary sources and uses of cash for each of the period set forth below:

	Three Months Ended March 31 ($ in thousands)	
	2019	**2018**
Cash used in operating activities	$ (3,023)	$ (2,806)
Cash used in investing activities	(14)	(102)
Cash provided by financing activities	30,028	(135)
Net increase in cash and cash equivalents and restricted cash	$ 26,991	$ (3,043)

Operating Activities

We have incurred significant costs in the area of research and development, including clinical, manufacturing, analytical, regulatory and other development costs. In addition, general and administrative expenses are incurred related to being a public company, personnel costs in the Finance and Executive area, as well as costs associated with legal, accounting and investor relation services. Net cash used in operating activities was approximately $3.0 million and $2.8 million for the three months ended March 31, 2019 and 2018, respectively. We expect that there will be a significant increase in cash used in operations during 2019 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 $0.0 million and $0.1 million of cash was used in investing activities for the three months ended March 31, 2019 and 2018, respectively. The investments were primarily related our laboratory facility, which we will continue to invest in during 2019.

Financing Activities

Net cash provided by financing activities was $30.0 million for the three months ended March 31, 2019. The cash provided by financing activities was primarily due to the public offering of common stock.

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 through 2020.

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 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, 2018 as a result of our adoption of Accounting Standards Update No. 2016-02 and its related amendments, which changed our accounting for leases. See Note 1 and Note 6 of Notes to Unaudited Condensed Consolidated Financial Statements contained elsewhere in this report for additional details related to our adoption of the new lease accounting standard.

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. The primary objectives of our investment activities are to preserve principal, provide liquidity and maximize income without significantly increasing risk. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. However, because of the short-term nature 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 other derivative financial instruments.

Item 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures.

Disclosure Controls and Procedures:

As of March 31, 2019, 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 because remediation of the material weaknesses in our internal control over financial reporting described in our 2018 Form 10-K has not been completed as described below, our disclosure controls and procedures were not effective at March 31, 2019.

Management's Report on Internal Control over Financial Reporting.

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

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

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

As previously disclosed in our 2018 Form 10-K, an evaluation was conducted under the supervision and with the participation of management, including our CEO and CFO, on the effectiveness of the Company's internal control over financial reporting as of December 31, 2018 based on criteria related to internal control over financial reporting described in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2013 Framework). Based on this evaluation, management determined that because of the material weaknesses described below, the Company's internal control over financial reporting was not effective as of December 31, 2018.

We did not maintain an effective control environment over the internal control activities to ensure the processing of and reporting of transactions are complete, accurate and timely. Specifically, we have not designed and implemented a sufficient level of formal financial reporting and operating policies and procedures that define how transactions should be initiated, processed, recorded and reported, including presentation and disclosure in the consolidated financial statements.

Furthermore, we did not maintain a sufficient complement of accounting personnel with sufficient knowledge and training in the application of U.S. GAAP. This deficiency led to the failure to maintain, document and apply appropriate account standards in the areas of income tax provisions, convertible equity securities, and stock based compensation.

The material weaknesses identified above could result in a misstatement to the aforementioned account balances and disclosures that would result in a material misstatement to the annual or interim consolidated financial statements would not be prevented or detected on a timely basis. The Company believes the material weakness continues to exist because the Company's remediation effort is ongoing.

Changes in Internal Control Over Financial Reporting:

Except for changes being implemented by the Company to address the material weakness identified below, there have been no changes in our internal control over financial reporting during the quarter ended March 31, 2019, that have materially affected, or are reasonably likely not to materially affect, our internal control over financial reporting.

Remediation Plan:

During 2019, Management has initiated a remediation plan to address the control deficiencies that led to the material weaknesses. The remediation plan includes, but is not limited to:

- The enhancement of our financial reporting and operating policies and procedures, including design and implementation of additional controls over the initiation, processing and recording of transactions to ensure such transactions are complete, accurate and recorded in a timely manner.
- Hiring and training existing personnel on the application of accounting principles and adherence to newly adopted policies, procedures and controls.
- The Company has retained the services of outside consultants, with relevant accounting experience, skills and knowledge in U.S. GAAP, working under the supervision and direction of the Company's management, to supplement the Company's accounting personnel.

PART – II OTHER INFORMATION

Item 1. LEGAL PROCEEDSINGS

None.

Item 1A. RISK FACTORS

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, 2018. You should carefully consider these factors 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, 2018, as well as other reports and statements that we file with the SEC, are not the only risks and uncertainties facing us. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also have a material adverse effect on our financial position, results of operations or cash flows.

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

None.

Item 3. DEFAULTS 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: May 13, 2019

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

/s/ Keith A. Kucinski

Dated: May 13, 2019

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.
** Furnished herewith.
\+ Indicates a management contract or compensation plan, contract or arrangement.

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: May 13, 2019

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: May 13, 2019

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: May 13, 2019

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

Date: May 13, 2019

By: */s/ Keith Kucinski*
Name: Keith 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.