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

FORM 10-Q

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

For the quarterly period ended March 31, 2017

or

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

For the transition period from _____ to _____

MOLECULIN BIOTECH, INC.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**47-4671997**
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(IRS Employer Identification Number)

2575 West Bellfort, Suite 333 **Houston, TX** (Address of principal executive offices)	**77054** (Zip Code)

713-300-5160
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted to its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Registration S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐	Accelerated filer ☐
Non-accelerated filer ☐ (Do not check if a smaller reporting company)	Smaller reporting company ☒
	Emerging growth company ☒

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

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

The registrant had 17,756,862 shares of common stock outstanding at May 6, 2017

Moleculin Biotech, Inc.
Form 10-Q
For the quarterly period ended March 31, 2017

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements.

Moleculin Biotech, Inc.
Balance Sheets
(in thousands except for par and share amounts)

	March 31, 2017 (Unaudited)	December 31, 2016
Assets		
Current Assets:		
Cash and cash equivalents	$ 8,881	$ 5,007
Prepaid expenses	269	215
Total current assets	9,150	5,222
Long-Term Assets:		
Furniture and equipment, net of accumulated depreciation of $10 and $6, respectively	19	23
Intangible assets	11,148	11,148
Total Assets	$ 20,317	$ 16,393
Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts payable and accrued expenses	$ 858	$ 1,069
Convertible notes payable	108	276
Warrant liability – current portion	1,238	–
Total current liabilities	2,204	1,345
Warrant liability	1,846	-
Long-term deferred compensation – related party	125	88
Total Liabilities	4,175	1,433
Commitments and contingencies (Note 7)		
Stockholders' Equity:		
Preferred stock, $0.001 par value; 5,000,000 authorized, no shares issued and outstanding	–	–
Common stock, $0.001 par value; 75,000,000 authorized, 17,756,862 and 12,164,852 shares issued and outstanding, respectively	18	12
Additional paid-in capital	21,128	19,623
Accumulated deficit	(5,004)	(4,675)
Total Stockholders' Equity	16,142	14,960
Total Liabilities and Stockholders' Equity	$ 20,317	$ 16,393

See accompanying notes to the financial statements.

Moleculin Biotech, Inc.
Statements of Operations
(Unaudited)
(in thousands, except for share and per share amounts)

	Three Months Ended March 31, 2017	2016
Revenue	$ –	–
Operating expenses:		
Research and development	683	15
General and administrative	848	306
Depreciation	4	-
Total Operating Expenses	1,535	321
Loss from operations	(1,535)	(321)
Other income (expense):		
Gain from change in fair value of warrant liability	1,059	–
Gain from settlement of liability	149	–
Other expense	(1)	–
Interest expense	(1)	(11)
Net loss	$ (329)	$ (332)
Net loss per common share - basic and diluted	$ (0.02)	$ (0.05)
Weighted average common shares outstanding - basic and diluted	14,590,220	6,717,767

See accompanying notes to the financial statements.

Moleculin Biotech, Inc.
Statements of Cash Flows
(Unaudited)
(in thousands)

	Three Months Ended March 31,	
	2017	2016
Cash Flows from Operating Activities:		
Net loss	$ (329)	$ (332)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	4	-
Stock-based compensation	110	2
Deferred CEO compensation	38	-
Change in fair value of warrant liability	(1,059)	-
Gain in settlement of liability	(149)	-
Changes in operating assets and liabilities:		-
Prepaid expenses	(55)	-
Accounts payable and accrued expenses	49	40
Net Cash Used in Operating Activities	(1,391)	(290)
Cash Flows from Investing Activities:		
Investment in note receivable – Moleculin, LLC	-	(30)
Net Cash Used in Investing Activities	-	(30)
Cash Flows from Financing Activities:		
Proceeds from notes payable	-	165
Proceeds from exercise of warrants	805	-
Proceeds from sale of common stock and warrants, net of cash stock issuance costs	4,460	387
Net Cash Provided by Financing Activities	5,265	552
Net change in cash and cash equivalents	3,874	232
Cash and cash equivalents, at beginning of period	5,007	28
Cash and cash equivalents, at end of period	$ 8,881	$ 260
Supplemental disclosures of cash flow information:		
Cash paid for interest	$ -	$ -
Cash paid for income taxes	$ -	$ -
Supplemental disclosure of non-cash investing and financing activities:		
Common stock issued for conversion of debt	$ 190	$ -
Common stock issued for services provided	$ 89	$ -

See accompanying notes to the financial statements.

Moleculin Biotech, Inc.
Statements of Stockholders' Equity
(Unaudited)
(in thousands except for shares and per unit)

	Common Stock				
	Number of Shares	Amount	Additional Paid-In-Capital	Accumulated Deficit	Stockholders' Equity
Balance at December 31, 2016	12,164,852	$ 12	$ 19,623	$ (4,675)	$ 14,960
Issued for cash – sale of units at $1.35 per unit, net of stock issuance costs of $550	3,710,000	4	313	–	317
Warrants exercised	596,300	1	804	–	805
Stock based compensation			110	–	110
Issued for convertible debt	1,206,543	1	189	–	190
Issued for settlement of service	79,167	–	89	–	89
Net loss				(329)	$ (329)
Balance at March 31, 2017	17,756,862	$ 18	$ 21,128	$ (5,004)	$ 16,142

See accompanying notes to the financial statements.

Moleculin Biotech, Inc.
Notes to the Financial Statements
(Unaudited)

1. Nature of Business and Liquidity

The terms "MBI" or "the Company", "we", "our" and "us" are used herein to refer to Moleculin Biotech, Inc. MBI is a preclinical pharmaceutical company organized as a Delaware corporation in July 2015 to focus on the development of anti-cancer drug candidates, some of which are based on license agreements with The University of Texas System on behalf of the M.D. Anderson Cancer Center, which we refer to as MD Anderson.

Our lead drug candidate is liposomal Annamycin, which we refer to as Annamycin, an anthracycline being studied for the treatment of relapsed or refractory acute myeloid leukemia, or AML. In 2015, the Company entered into a rights transfer agreement with AnnaMed, Inc. ("AnnaMed"), a company affiliated with certain members of the Company's management and board of directors, pursuant to which, in exchange for shares of the Company's common stock, AnnaMed agreed to transfer to MBI any and all data it had regarding the development of Annamycin and the Annamycin investigative new drug application ("IND") it had previously filed with the U.S. Food and Drug Administration ("FDA"), including all trade secrets, know-how, confidential information and other intellectual property rights held by AnnaMed. Annamycin was in clinical trials pursuant to an IND that had been filed with the FDA but the IND was terminated due to a lack of activity by a prior drug developer. During the course of our review of that data in 2016, we identified that Annamycin may have greater potential for efficacy than we originally believed, based on an unexpected potential opportunity to increase the drug's Maximum Tolerable Dose ("MTD"). As a result, we determined to adjust our clinical strategy by adding in a Phase I arm to our next Phase II trial.

Because the prior developer of Annamycin allowed their IND to lapse, we are required to submit a new IND for continued clinical trials with Annamycin. We filed our IND application, with the clinical strategy of increasing the MTD mentioned above, for Annamycin on February 10, 2017. In subsequent discussions with us, FDA requested certain revisions to the protocol, additional information, and additional data related to Chemistry, Manufacturing and Controls ("CMC"). We have the additional information, have made the requested revisions to the protocol, and we are working on developing the CMC data. In the interim, we have withdrawn the IND application in order to resubmit it when the requested data are available. We believe that resubmission of the IND application will occur in time for the IND to go into effect by the end of July 2017, and we may begin clinical trials. This will mean that IRB ("Institutional Review Board") approvals and site initiations of various clinical sites participating in our Phase I/II clinical trial of Annamycin should occur later in the second half of 2017. However, if we are unable to obtain the required CMC data on a timely basis, we will be delayed in resubmitting our IND application, which will delay the commencement of our clinical trials beyond July 2017.

The Annamycin drug substance is no longer covered by any existing patent protection. We intend to submit patent applications for formulation, synthetic process and reconstitution related to our Annamycin drug product candidate, although there is no assurance that we will be successful in obtaining such patent protection. On March 21, 2017, we received Orphan Drug designation from the FDA for Annamycin for the treatment of AML. Orphan Drug status could entitle us to market exclusivity of up to 7 years from the date of approval of a New Drug Application ("NDA"), and 10 years' exclusivity from the date of approval of a Marketing Authorization Application ("MAA"), in the US and the European Union ("EU"). Separately, the FDA may also grant market exclusivity of up to 5 years for newly approved new chemical entities (of which Annamycin would be one), but there can be no assurance that any of these exclusivities will be granted.

We have two other drug development projects in progress, one involving a portfolio of small molecules, which we refer to as the WP1066 Portfolio, focused on the modulation of key oncogenic transcription factors involved in the progression of cancer, and the WP1122 Portfolio, a suite of molecules targeting the metabolic processes involved in cancer in general, and glioblastoma (the most common form of brain tumor) in particular. We have been granted royalty-bearing, worldwide, exclusive licenses for the patent and technology rights related to our WP1066 Portfolio and WP1122 Portfolio drug technologies, as these patent rights are owned by MD Anderson.

In accordance with FASB ASC Topic 280, Segment Reporting, we view our operations and manage our business as principally one segment. As a result, the financial information disclosed herein represents all the material financial information related to our principal operating segment.

2. Summary of Significant Accounting Policies

Basis of Presentation – Unaudited Interim Financial Information – The accompanying unaudited interim financial statements and related notes have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") for financial information, and in accordance with the rules and regulations of the United States Securities and Exchange Commission (the "SEC") with respect to Form 10-Q and Article 8 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by U.S. GAAP for complete financial statements. The unaudited interim financial statements furnished reflect all adjustments (consisting of normal recurring adjustments), which are, in the opinion of management, necessary for a fair statement of results for the interim periods presented. Interim results are not necessarily indicative of the results for the full year. These interim unaudited financial statements should be read in conjunction with the audited financial statements of the Company for the year ended December 31, 2016 and for the period from July 28, 2015 (inception) to December 31, 2015 and notes thereto contained in the Registration Statement on Form S-1 filed with the SEC on April 27, 2016 and the Form 10-K filed with the SEC on April 3, 2017.

Use of Estimates in Financial Statement Presentation – The preparation of these financial statements in conformity with accounting principles generally accepted in the United States of America 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 revenues and expenses during the reporting period. Actual results could differ from those estimates.

Going Concern – These financial statements have been prepared on a going concern basis, which assumes the Company will continue to realize its assets and discharge its liabilities in the normal course of business. The continuation of the Company as a going concern is dependent upon the ability of the Company to obtain continued financial support from its stockholders', necessary equity financing to continue operations and the attainment of profitable operations. As of March 31, 2017, the Company has incurred an accumulated deficit of $5.0 million since inception, and had not yet generated any revenue from operations. Additionally, management anticipates that its cash on hand as of March 31, 2017 is sufficient to fund its planned operations into but not beyond the near term. These factors raise substantial doubt regarding the Company's ability to continue as a going concern. These financial statements do not include any adjustments to the recoverability and classification of recorded asset amounts and classification of liabilities that might be necessary should the Company be unable to continue as a going concern. The Company may seek additional funding through a combination of equity offerings, debt financings, government or other third-party funding, commercialization, marketing and distribution arrangements, other collaborations, strategic alliances and licensing arrangements and delay planned cash outlays or a combination thereof. Management cannot be certain that such events or a combination thereof can be achieved.

Fair Value of Financial Instruments – Our financial instruments consist primarily of accounts payables, accrued expenses, warrant liability and short and long-term debt. The carrying amount of accounts payables and accrued expenses approximates our fair value because of the short-term maturity of such instruments and they are considered Level 1 liabilities under the fair value hierarchy. The carrying amount of our debt approximates fair value. Interest rates that are currently available to us for issuance of short and long-term debt with similar terms and remaining maturities are used to estimate the fair value of our short and long-term debt and would be considered Level 3 inputs under the fair value hierarchy.

We have categorized our assets and liabilities that are valued at fair value on a recurring basis into three-level fair value hierarchy in accordance with GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets and liabilities (Level 1) and lowest priority to unobservable inputs (Level 3).

Assets and liabilities recorded in the balance sheet at fair value are categorized based on a hierarchy of inputs as follows:

Level 1 – Unadjusted quoted prices in active markets of identical assets or liabilities.
Level 2 – Quoted prices for similar assets or liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.
Level 3 – Unobservable inputs for the asset or liability.

The Company's financial assets and liabilities recorded at fair value on a recurring basis include the fair value of warrant liability discussed in Note 4. The fair value of this warrant liability is included in both short and long-term liabilities on the accompanying financial statements.

The following table provides the financial assets and liabilities reported at fair value and measured on a recurring basis at March 31:

In thousands

Description		Liabilities Measured at Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Other Unobservable Inputs (Level 3)
Fair value of warrant liability:					
	2017	$ 3,084	$ -	$ -	$ 3,084

The following table provides a summary of changes in fair value associated with the Level 3 liabilities for the quarter ended March 31:

Fair Value Measurements Using Significant Unobservable Inputs (Level 3) – in thousands

	Warrant Liability – Current	Warrant Liability – Long-Term	Warrant Liability – Total
Balance, beginning of period	$ -	$ -	$ -
Issuances of warrants	2,453	1,690	4,143
Change in fair value	(964)	(95)	(1,059)
Transfer in/out (exercise of warrants)	(251)	251	-
Balance, end of period	$ 1,238	$ 1,846	$ 3,084

The above table of Level 3 liabilities begins with the initial valuation given the issuances occurred in the current quarter and adjusts the balances for changes that occurred during the current quarter. The ending balance of the Level 3 financial instruments presented above represent our best estimates and may not be substantiated by comparison to independent markets and, in many cases, could not be realized in immediate settlement of the instruments.

Loss Per Common Share - Basic net loss per common share is computed by dividing net loss available to common shareholders by the weighted-average number of common shares outstanding during the period. Diluted net loss per common share is determined using the weighted-average number of common shares outstanding during the period, adjusted for the dilutive effect of common stock equivalents. In periods when losses are reported, the weighted-average number of common shares outstanding excludes common stock equivalents, because their inclusion would be anti-dilutive. As of March 31, 2017, the Company's potentially dilutive shares, which were not included in the calculation of net loss per share, included notes convertible to 772,486 common shares, options to purchase 530,000 common shares and warrants to purchase 7,747,425 common shares.

Reclassifications – A reclassification was made to the December 31, 2016 financial statements to conform to the 2017 presentation. Such reclassification did not affect net loss as previously reported. Historically, accrued interest associated with "convertible notes payable" was included in the line item "accounts payable and accrued expenses". Management believes that these costs are best shown included in the amounts shown for "convertible notes payable" and, as such, a reclassification was made to the balance sheet for the year ended December 31, 2016 by reducing "accounts payable and accrued expenses" and increasing "convertible notes payable" by $0.02 million.

Research and Development Costs - Research and development costs are expensed as incurred.

Subsequent Events - The Company's management reviewed all material events through the date these financial statements were issued for subsequent events disclosure consideration and has noted an event in Note 8 below.

Recent Accounting Pronouncements

In May 2014, the FASB issued Accounting Standard Update ("ASU") 2014-09, Revenue from Contracts with Customers (Topic 606), which will replace numerous requirements in U.S. GAAP, including industry-specific requirements, and provide companies with a single revenue recognition model for recognizing revenue from contracts with customers. The core principle of the new standard is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In August 2015, the FASB approved a proposal to defer the effective date of the guidance until annual and interim reporting periods beginning after December 15, 2017. The Company is currently evaluating the impact that this standard will have on its financial statements at the time the Company starts to generate revenue or enters into other contractual arrangements, which the Company does not expect in the near term.

In August 2014, the FASB issued ASU 2014-15, Presentation of Financial Statements-Going Concern (Subtopic 205-40): Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern. Under the new guidance, management will be required to assess an entity's ability to continue as a going concern, and to provide related footnote disclosures in certain circumstances. The provisions of this ASU are effective for annual periods ending after December 15, 2016, and for annual and interim periods thereafter; early adoption is permitted. This disclosure was adopted for the year ended December 31, 2016.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments – Overall: Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01"). ASU 2016-01 affects the accounting for equity investments, financial liabilities under the fair value option and the presentation and disclosure requirements of financial instruments. ASU 2016-01 is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. The Company is currently evaluating the impact that this standard will have on its financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842) ("ASU 2016-02"). Under ASU 2016-02, an entity will be required to recognize right-of-use assets and lease liabilities on its balance sheet and disclose key information about leasing arrangements. ASU 2016-02 offers specific accounting guidance for a lessee, a lessor and sale and leaseback transactions. Lessees and lessors are required to disclose qualitative and quantitative information about leasing arrangements to enable a user of the financial statements to assess the amount, timing and uncertainty of cash flows arising from leases. For public companies, ASU 2016-02 is effective for annual reporting periods beginning after December 15, 2018, including interim periods within that reporting period, and requires a modified retrospective adoption, with early adoption permitted. The Company is currently evaluating the impact that this standard will have on its financial statements.

In March 2016, the FASB issued ASU 2016-09, Compensation-Stock Compensation (Topic 718). The new guidance changes the accounting and simplifies various aspects of the accounting for share-based payments to employees. The guidance allows for a policy election to account for forfeitures as they occur or based on an estimated number of awards that are expected to vest. The policy we elected was to expense forfeitures as they occur. ASU 2016-09 is effective for annual periods beginning after December 15, 2016, with early adoption permitted. The adoption of this standard on January 1, 2017, did not have a significant impact on the Company's financial statements.

In August 2016, the FASB issued ASU, Statement of Cash Flows (Topic 230). This ASU applies to all entities that are required to present a statement of cash flows under Topic 230. The amendments provide guidance on eight specific cash flow issues and includes clarification on how these items should be classified in the statement of cash flows and is designed to help eliminate diversity in practice as to where items are classified in the cash flow statement. Furthermore, in November 2016, the FASB issued additional guidance on this Topic that requires amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the statement of cash flows. This ASU is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with earlier application permitted for all entities. We plan to adopt the provisions of this ASU for our fiscal year beginning January 1, 2018 and are currently evaluating the impact the adoption of this new accounting standard will have on our financial statements.

The Company does not believe that any other recently issued effective pronouncements, or pronouncements issued but not yet effective, if adopted, would have a material effect on the accompanying financial statements.

3. Convertible Notes Payable

On various dates from August 31, 2015 through January 19, 2016, each as amended on March 10, 2016, the Company entered into seven unsecured promissory notes with three separate third party investors. Each note bears interest at 8.0% per annum and was to mature on the earlier of June 30, 2016 or the completion of an IPO of the Company's securities.

Since the completion of the IPO occurred prior to June 30, 2016, these notes were to be automatically converted according to their terms into shares of the Company's common stock at applicable conversion price upon the Company's IPO to the extent and provided that no holder of these notes was or will be permitted to convert such notes to the extent that the holder or any of its affiliates would beneficially own in excess of 4.99% of our common stock after such conversion. Due to this 4.99% limitation, a portion of these notes was not converted at the time of the IPO and the remaining unconverted principal and accrued interest amounts of the effected notes will remain outstanding and will be converted into shares of our common stock at such time as the 4.99% limitation continues to be met. Until such time as the notes are converted into shares of common stock, the maturity date of the notes will automatically be extended and we will not be required to repay the notes or the accrued interest relating to the notes in cash.

The IPO was completed on May 31, 2016. On May 31, 2016, pursuant to the conversion feature of the foregoing notes and with restriction of the 4.99% beneficially owned condition limitation, discussed above, the Company issued 1,166,503 common shares in total, reducing convertible debt principal by $0.18 million and accrued interest by $0.02 million. Subsequent to these transactions and through March 31, 2017, an additional 2,116,640 common shares were issued due to the number of common shares outstanding allowing for conversion of additional shares under the 4.99% beneficially owned condition limitation. This reduced the convertible debt principal by $0.32 million and accrued interest by $0.03 million. Of these amounts, 1,206,543 shares were issued in the first quarter of 2017, thereby reducing convertible debt principal by $0.19 million.

The convertible notes were analyzed for a beneficial conversion feature on various issuance dates, at which time it was concluded that a beneficial conversion feature did not exist.

The table below represents the shares that are convertible at March 31, 2017 relating to the principal amounts of these convertible notes payable and excludes any shares that are convertible relating to the associated accrued interest:

In thousands (except conversion rate and share information)

Issuance Date	March 31, 2017	December 31, 2016	Conversion Rate	Shares Convertible at March 31, 2017
August 31, 2015(a)	$ 38	$ 38	$ 0.1299	294,831
September 3, 2015(d)	48	125	0.1299	370,174
October 6, 2015(a)(b)	--	30	0.20	--
January 19, 2016(c)	22	83	0.20	107,481
Total	$ 108	$ 276		772,486

(a) Debt partially converted on May 31, 2016, August 19, 2016 and on September 1, 2016.
(b) Debt fully converted to common shares on March 7, 2017.
(c) Debt partially converted to common shares effective March 7, 2017.
(d) Debt partially converted to common shares effective February 21, 2017 and on March 1, 2017,

The common shares relating to the above mentioned convertible notes payable contain the following trading restrictions: (a) beginning 90 days after the initial closing of our IPO and until the one-year anniversary of the initial closing of the IPO, which will occur on May 31, 2017, the holder of the note will be able to sell 1% of the number of shares of common stock underlying the note on a monthly basis, subject to a maximum sale on any trading day of 4% of the daily volume; (b) if the common stock price is over $7.00 per share for five consecutive trading days then the holder of the note can sell up to 3% of the number of shares of common stock underlying the note on a monthly basis, subject to a maximum sale on any trading day of 4% of the daily volume; (c) if the common stock price is over $10.00 per share for five consecutive trading days then the holder of the note can sell up to an additional 5% of the number of shares of common stock underlying the note on a monthly basis, subject to a maximum sale on any trading day of 7% of the daily volume; and (d) if the common stock price is over $14.00 per share then the holder of the note is not restricted from making any sales until such time as the common stock price falls back below $14.00 per share; and (b) thereafter, until the two-year anniversary of the initial closing of IPO, the holder of the note can sell on any trading day 10% of the daily volume; provided that if the common stock price is over $10.00 per share then the holder of the note is not restricted from making any sales until such time as the common stock falls back below $10.00 per share. The foregoing lock-up restrictions relate to public sales and do not restrict the transfer of the shares privately, if permitted by applicable law, provided the acquirer of the shares agrees to comply with the above restrictions with respect to any public sales.

4. Warrant Liability

On February 9, 2017, the Company entered into an Underwriting Agreement (the "Underwriting Agreement") with Roth Capital Partners, LLC, as representative of the several underwriters identified therein (collectively, the "Underwriters"), pursuant to which we sold in a registered public offering (the "Offering"), 3,710,000 units, priced at a public offering price of $1.35 per unit (the closing price that day was $1.50), with each unit consisting of: (i) one share of common stock, (ii) a five-year Series A warrant to purchase 0.50 of a share of common stock, (iii) a 90-day Series B warrant to purchase one share of common stock, and (iv) a five-year Series C warrant to purchase 0.50 of a share of common stock. The Series C warrants in a unit may only be exercised to the extent and in proportion to a holder of the Series C warrants exercising its Series B warrants included in the unit. The Series A and Series C warrant have an exercise price of $1.50 per share of common stock. The Series B warrant has an exercise price of $1.35 per share of common stock.

Under the terms of the Underwriting Agreement, we granted the Underwriters a 45-day option to purchase an additional 556,500 shares of common stock and/or an additional 556,500 warrant combinations (comprised of an aggregate of 278,250 Series A warrants, 556,500 Series B warrants and 278,250 Series C warrants), in any combinations thereof, from us to cover over-allotments at the public offering price per share of $1.349 and public offering price per warrant combination of $.001, respectively, less the underwriting discounts and commissions. Upon the closing of the Offering, the Underwriters exercised the over-allotment option with respect to 278,100 warrant combinations. We received approximately $4.5 million in net proceeds from the Offering, after deducting underwriting discounts and commissions and estimated offering expenses.

The basis of value is fair value, which is defined pursuant to Accounting Standards Codification ("ASC") 820 to be "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". The Company estimated the fair value of the Warrants under ASC 820 as of the closing date of February 14, 2017 for financial reporting purposes. We used the Black-Scholes option pricing model ("BSM") to determine the fair value of the Series A, Series B, and Series C Vested Common Warrants and a Monte Carlo simulation ("MCM") with regard to the Series C Unvested Common Warrants in consideration of path dependent vesting terms of the contract. Both the BSM and MCM models are acceptable in accordance with GAAP. The BSM requires the use of a number of assumptions including volatility of the stock price, the weighted average risk-free interest rate, and the weighted average term of the Warrant. The MCM simulates the Company's common stock price from the valuation date through the Series B Warrant and the unvested Series C Warrant expiration dates using Geometric Browman Motion on a risk-neutral basis - thereby impacting the likelihood that the Series B Warrants will be exercised and, subsequently, the Series C Warrants will then vest.

The risk-free interest rate assumption is based upon observed interest rates on zero coupon U.S. Treasury bonds whose maturity period is appropriate for the term of the Warrants and is calculated by using the average daily historical stock prices through the day preceding the grant date.

Estimated volatility is a measure of the amount by which our stock price is expected to fluctuate each year during the expected life of the Warrants. Our estimated volatility is an average of the historical volatility of our stock prices (and that of peer entities whose stock prices were publicly available) over a period equal to the expected life of the Warrants. Where appropriate we used the historical volatility of peer entities due to the lack of sufficient historical data of our stock price during 2016-2017.

The assumptions used in the BSM and MCM models for the Warrants are as follows:

	Three Months Ended March 31, 2017	Year Ended December 31, 2016
Risk- free interest rate	0.54%-1.96%	-
Volatility	82.5%-160.11%	-
Expect life (years)	0.25-5.0	-
Dividend yield	0.00%	-

A summary of our Warrant activity and related information follows:

	Number of Shares Under Warrant	Range of Warrant Price Per Share	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life
Balance at January 1, 2017	-	-	-	-
Granted	8,235,923	$1.35-$1.50	$ 1.43	1.6
Exercised	(596,300)	$1.35	$ 1.35	.25
Expired	-	-	-	-
Balance at March 31, 2017	7,639,623	$1.35-$1.50	$ 1.43	1.8
Vested and Exercisable at March 31, 2017	5,943,718	$1.35-$1.50	$ 1.41	2.3

Warrant Activity During the First Quarter of 2017:

On February 14, 2017, 8,235,923 warrants were granted, as discussed above.

On March 24, 2017, 596,300 Series B warrants were exercised for an equivalent amount of common shares which vested 298,150 Series C Warrants.

On March 31, 2017, the Warrants were revalued with a fair value determination of $3.08 million which included a fair value adjustment of $1.06 million which was included as a change in fair value of warranty liability in the accompanying financial statements.

Series B and Series C Warrants

As noted above, Series C Common Warrants vest and become eligible for exercise ratably in proportion to the Warrant holder's exercising of their Series B Common Warrants. The Series B Warrants and the unvested Series C Warrants expire May 15, 2017. Therefore, the associated warranty liability of $1.24 million, which is shown as a "Warrant Liability – Current" on the balance sheet, may be extinguished on May 15, 2017 if no other Series B Warrants are exercised prior to that date.

5. Equity

On May 2, 2016, the Company amended and restated its certificate of incorporation to increase the number of shares authorized to 80,000,000 of which 5,000,000 shares of preferred stock are authorized and 75,000,000 shares of common stock are authorized.

Preferred Stock

We are authorized to issue up to 5,000,000 shares of preferred stock. Our certificate of incorporation authorizes the board to issue these shares in one or more series, to determine the designations and the powers, preferences and relative, participating, optional or other special rights and the qualifications, limitations and restrictions thereof, including the dividend rights, conversion or exchange rights, voting rights (including the number of votes per share), redemption rights and terms, liquidation preferences, sinking fund provisions and the number of shares constituting the series. As of March 31, 2017, there was no issued preferred stock.

Common Stock

On January 13, 2017, the Company agreed to issue 79,167 shares of common stock to a consultant in full settlement for prior services rendered to the Company. Settlement occurred February 21, 2017 with the issuance of the shares, resulting in a gain on settlement of $0.15 million recorded in Gain in settlement of liability on the Statements of Operations. The obligation of $0.24 million had been recorded by the Company in Accounts payable and accrued expenses as of December 31, 2016.

On February 14, 2017, the Company completed a public offering and sold 3,923,923 shares of the Company's common stock. The offering price per share was $1.35. The Company received net cash proceeds of $4.46 million after deducting underwriting discounts, commissions and direct offering expenses payable by us. See Note 4 above regarding Warrant issuance related to our February public offering.

Adoption of 2015 Stock Plan

On December 5, 2015, the Board of Directors of the Company approved the Company's 2015 Stock Plan, which was amended on April 22, 2016. The expiration date of the plan is December 5, 2025 and the total number of underlying shares of the Company's common stock available for grant to employees, directors and consultants under the plan is 2,500,000 shares. The awards under the 2015 Stock Plan can be in the form of stock options, stock awards or stock unit awards. The following is a summary of option activities for the periods ended December 31, 2016 and the three months ended 2017:

	Number of Shares	Weighted Average Grant Date Fair Value	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding, December 31, 2015	200,000	$ 0.14	$ 0.20		
Granted - 2016	460,000	3.75	5.83		
Cancelled	(150,000)	0.14	0.20		
Outstanding, December 31, 2016	510,000	$ 3.40	$ 5.28	9.29	$ 48,500
Granted - Q1 2017	20,000	$ 1 .76	$ 2.31		
Cancelled – Q1 2017	-	–	–		–
Outstanding, March 31, 2017	530,000	$ 3.33	$ 5.17	8.82	$ 48,500
Exercisable, March 31, 2017	50,000	$ 0.14	$ 0.20	3.17	$ 48,500

During the quarter ended March 31, 2017, the Company granted members of its science advisory board options in the aggregate, to purchase 20,000 shares of the Company's common stock with an exercise price $2.31, a term of 10 years, and a vesting period of 4 years. The exercise price was based upon the closing price of stock on the day of the grant. These options have an aggregated fair value of $35,196 that was calculated using the Black-Scholes option-pricing model.

Variables used in the Black-Scholes option-pricing model include ranges of: (1) discount of 1.30-2.24% (2) expected lives of 6 to 6.25 years, (3) expected volatility of 70.18% to 89.11%, and (4) zero expected dividends. The Company, due to the limited number of participants in the plan and their positions within the Company, uses a 0% estimated forfeiture rate. During the quarter ended March 31, 2017, the Company recorded $0.11 million in stock-based compensation in relation to the options. As of March 31, 2017, there was $1.49 million of unrecognized compensation cost, net of estimated forfeitures, related to the Company's non-vested equity awards, which is expected to be recognized over a weighted average period of 3.28 years.

The fair value of each stock option is estimated on the date of grant using the Black-Scholes option valuation model that uses the assumptions noted in the above paragraph. The expected term of the options was computed using the "plain vanilla" method as prescribed by the Securities and Exchange Commission Staff Accounting Bulletin 107 because we do not have sufficient data regarding employee exercise behavior to estimate the expected term. The volatility was determined by referring to the average historical volatility of a peer group of public companies because we do not have sufficient trading history to determine our historical volatility. The risk-free rate for periods within the contractual life of the option is based on the U.S. Treasury yield curve in effect at the time of grant.

6. Income Taxes

Deferred income tax assets and liabilities are determined based upon differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. We do not expect to pay any significant federal or state income tax for 2017 as a result of the losses recorded during the three months ended March 31, 2017 and the additional losses expected for the remainder of 2017 and net operating loss carry forwards from prior years. Accounting standards require the consideration of a valuation allowance for deferred tax assets if it is "more likely than not" that some component or all of the benefits of deferred tax assets will not be realized. As of March 31, 2017, we maintained a full valuation allowance for all deferred tax assets.

The Company recorded no income tax provision for the three months ended March 31, 2017 and 2016. The effective tax rate for the three months ended March 31, 2017 and 2016 was 0%. The income tax rates vary from the federal and state statutory rates primarily due to the valuation allowances on the Company's deferred tax assets. The Company estimates its annual effective tax rate at the end of each quarterly period. Jurisdictions with a projected loss for the year where no tax benefit can be recognized due to the valuation allowances on the Company's deferred tax assets are excluded from the estimated annual effective tax rate. The impact of such an exclusion could result in a higher or lower effective tax rate during a particular quarter depending on the mix and timing of actual earnings versus annual projections.

7. Commitments and Contingencies

MD Anderson – IntertechBio Agreement

In 2015, the Company acquired the rights and obligations under the Patent and Technology License Agreement entered into between IntertechBio and MD Anderson dated April 2, 2012. Pursuant to the agreement, IntertechBio obtained a royalty-bearing, worldwide, exclusive license to intellectual property including patent rights related to the Company's drug product candidate, WP1122. Under the agreement, IntertechBio agreed to pay annual maintenance fees in the amount of $10,000 on the first anniversary of the effective date of the agreement, $20,000 on the second anniversary of the effective date of the agreement, $40,000 on the third anniversary of the effective date of the agreement, $60,000 on the fourth anniversary of the effective date of the agreement, $80,000 on the fifth anniversary of the effective date of the agreement and $100,000 on the sixth anniversary of the effective date of the agreement, except that such payments will no longer be due upon the first sale of a licensed product. Under the agreement, IntertechBio also agreed to make a minimum annual royalty payment in the amount of $200,000 for the first anniversary following the first sale of a licensed product, $400,000 for the second anniversary following the first sale of a licensed product, and $600,000 for the third year following the first sale of a licensed product. IntertechBio also agreed to make certain milestone payments. Pursuant to an amendment on October 19, 2015, the Company will pay milestone payments as follows:

In thousands (except conversion rate and share information)

Phase	Amount
Commencement of Phase II Study for a licensed product	$ 200
Commencement of Phase III Study for a licensed product	$ 250
Filing of a New Drug Application for a licensed product	$ 400
Receipt of market approval for a licensed product	$ 500

Per the October 2015 amendment to the agreement, MD Anderson has the right to terminate the license agreement if (i) a preclinical toxicology program for a licensed product is not initiated within one year of the effective date of the amendment (which has occurred), (ii) an investigational new drug application is not filed with the Food and Drug Administration for a Phase I study for a licensed product within three years of the effective date of the amendment, or (iii) a Phase I study for a licensed product is not commenced within five years of the effective date of the amendment. The agreement will expire upon the expiration of the licensed intellectual property. The rights obtained by the Company pursuant to the agreement are made subject to the rights of the U.S. government to the extent that the technology covered by the licensed intellectual property was developed under a funding agreement between MD Anderson and the U.S. government. All out-of-pocket expenses incurred by MD Anderson in filing, prosecuting and maintaining the licensed patents have been and shall continue to be assumed by the Company.

MD Anderson – Patent & Technology License Agreement

Upon the Company's acquisition of Moleculin, LLC on May 2, 2016, we obtained a royalty-bearing, worldwide, exclusive license to intellectual property rights, including patent rights related to our WP1066 drug product candidate from MD Anderson through a Patent and Technology License Agreement Moleculin, LLC entered with MD Anderson on June 21, 2010 (the "Moleculin License Agreement"). Under the Moleculin License Agreement, Moleculin, LLC obtained the right to manufacture, have manufactured, use, import, offer to sell or sell products worldwide for any indication under the licensed intellectual property with the right to sublicense. In consideration, Moleculin, LLC agreed to make payments to MD Anderson including an up-front payment, milestone payments and minimum annual royalty payments for sales of products developed under the license agreement. Specifically, under the Moleculin License Agreement, Moleculin, LLC agreed to pay a nonrefundable upfront documentation fee and an annual maintenance fee in the amount of $20,000 on June 21, 2011, which has and shall increase in $10,000 increments on an annual basis thereafter up to a maximum of $100,000, except that such payments will no longer be due upon marketing approval in any country of a licensed product. Under the Moleculin License Agreement, Moleculin, LLC also agreed to make a minimum annual royalty payment.

Upon completion of our acquisition of Moleculin, LLC, we assumed the rights and obligations of Moleculin, LLC. However, the rights we have obtained pursuant to the assignment of the Moleculin License Agreement are made subject to the rights of the U.S. government to the extent that the technology covered by the licensed intellectual property was developed under a funding agreement between MD Anderson and the U.S. government. All out-of-pocket expenses incurred by MD Anderson in filing, prosecuting and maintaining the licensed patents have been and shall continue to be assumed by us.

On October 8, 2015, Moleculin, LLC entered into a letter agreement with MD Anderson for Moleculin, LLC's past due fees to MD Anderson in the amount of $691,186 of which $300,000 had been paid prior to the letter agreement. Pursuant to the letter agreement, MD Anderson agreed to receive the remaining past due fee in three installments: a) $125,000 on October 31, 2015; b) $175,000 on January 31, 2016; and c) $91,186 on April 30, 2016. Moleculin, LLC paid $125,000 to MD Anderson on November 2, 2015.

On October 19, 2015, the agreement was amended for the milestone payments. The amended milestone payments are as follows: (i) commencement of Phase III Study for first licensed drug/product within the United States, Europe, China or Japan - $150,000; (ii) submission of the first NDA within the United States - $500,000; and (iii) receipt of first marketing approval for sale of a license product in the United States - $600,000.

On January 28, 2016, the Company and Moleculin, LLC entered into a letter agreement with MD Anderson where MD Anderson agreed to receive the remaining outstanding amount on or before the earlier of April 30, 2016 or four days after our IPO. This date was amended and per the amended agreement, the Company paid the outstanding Moleculin, LLC fees on May 31, 2016 in the amount of $306,186 in cash.

On January 9, 2017, the Company amended its Sponsored Laboratory Study Agreement with MD Anderson whereby the Company would pay $302,500 in 2017 and the agreement is extended to October 31, 2018. Of this amount, $202,500 had been paid as of March 31, 2017. The remaining $100,000 is due on July 31, 2017.

Houston Pharmaceuticals, Inc.

Our acquisition of Moleculin, LLC, occurring prior to our IPO offering, provided us with the rights of the license agreement that Moleculin, LLC had with MD Anderson covering the WP1066 Portfolio. We are obligated to make payments to HPI totaling $0.75 million over a three-year period commencing after the IPO offering in exchange for HPI allowing us to access any data, information or know-how resulting from the research and development conducted by HPI. Pursuant to the HPI Out-Licensing Agreement, we have the right within three years of the date we enter into the agreement to buy-out from HPI all rights granted to HPI under the agreement for a payment of $1.0 million. Upon our exercise of the buy-out we will no longer be obligated to make any payments to HPI remaining from the $0.75 million obligation discussed above. We will need to raise additional funds to make the buy-out payment. We cannot assure that such additional funding will be available on satisfactory terms, or at all.

8. Subsequent Events

On April 11, 2017, the Company announced that it has appointed Theradex Systems, Inc. as its contract research organization for its planned Phase I/II clinical trial for Annamycin for the treatment of relapsed or refractory AML. Engaging Theradex is a key step in preparing to initiate the Company's Phase I/II clinical trial for Annamycin. The Company's IND for Annamycin must go into effect for clinical trials to begin.

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") contains certain forward-looking statements. Historical results may not indicate future performance. Our forward-looking statements reflect our current views about future events, are based on assumptions and are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those contemplated by these statements.

Forward-looking statements include, but are not limited to, statements about:

- our ability to obtain additional funding to develop our product candidates;
- the need to obtain regulatory approval of our product candidates;
- the success of our clinical trials through all phases of clinical development;
- our ability to complete our clinical trials in a timely fashion and within our expected budget;
- compliance with obligations under intellectual property licenses with third parties;
- any delays in regulatory review and approval of product candidates in clinical development;
- our ability to commercialize our product candidates;
- market acceptance of our product candidates;
- competition from existing products or new products that may emerge;
- potential product liability claims;
- our dependency on third-party manufacturers to supply or manufacture our products;
- our ability to establish or maintain collaborations, licensing or other arrangements;
- our ability and third parties' abilities to protect intellectual property rights;
- our ability to adequately support future growth; and
- our ability to attract and retain key personnel to manage our business effectively.

We undertake no obligation to publicly update or revise any forward-looking statements, including any changes that might result from any facts, events, or circumstances after the date hereof that may bear upon forward-looking statements. Furthermore, we cannot guarantee future results, events, levels of activity, performance, or achievements.

Highlights

We are a preclinical-stage pharmaceutical development company organized as a Delaware corporation in July 2015 to focus on the development of anti-cancer drug candidates. We have three drug development projects. Our lead drug candidate is liposomal Annamycin, which is referred to as Annamycin, an anthracycline being studied for the treatment of relapsed or refractory acute myeloid leukemia ("AML"). Annamycin was in clinical trials pursuant to an investigational new drug application ("IND") that had been filed with the U.S. Food and Drug Administration ("FDA"), but the IND was terminated because of a lack of development activity by a prior drug developer.

We filed our IND application, with a Phase I/II approach with the intent of increasing the Maximum Tolerable Dose ("MTD"), for Annamycin on February 10, 2017. In subsequent discussions, FDA requested certain revisions to the protocol, additional information, and additional data related to Chemistry, Manufacturing and Controls ("CMC"). We have the additional information, have made the requested revisions to the protocol, and we are working on developing the CMC data. In the interim, we have withdrawn the IND application in order to resubmit it when the requested data are available. We believe that resubmission of the IND application will occur in time for the IND to go into effect by the end of July 2017, and that we may begin clinical trials. This will mean that the IRB ("Institutional Review Board") approvals and site initiations of various clinical sites participating in our Phase I/II clinical trial of Annamycin should occur later in the second half of 2017. However, if we are unable to obtain the required CMC data on a timely basis, we will be delayed in resubmitting our IND application, which will delay the effective date of our IND beyond July 2017. Furthermore, on March 21, 2017, we received notice from the FDA that we have obtained Orphan Drug designation for Annamycin for the treatment of AML.

We have two other drug development projects in progress. One of them involves a collection of small molecules we refer to as the WP1066 Portfolio that was obtained via our acquisition of Moleculin, LLC and is focused on the modulation of key regulatory transcription factors involved in the progression of cancer. The other, which we call the WP1122 Portfolio, is a suite of molecules targeting the metabolic processes involved in cancer in general, and glioblastoma in particular, that we acquired from IntertechBio Corporation. Both of these technologies are licensed on a worldwide exclusive basis from The University of Texas M.D. Anderson Cancer Center, or MD Anderson.

Overview

MBI was founded in 2015 in order to combine and consolidate the development efforts involving several anti-cancer technologies, some of which are based on license agreements with MD Anderson. This effort began with the acquisition of the Annamycin development project from AnnaMed, Inc., or AnnaMed, followed by the acquisition of the license rights to the WP1122 Portfolio from IntertechBio Corporation, or IntertechBio. Further, we, on Moleculin, LLC's behalf, entered into a co-development agreement with Houston Pharmaceuticals, Inc., or HPI, which culminated with the merger of Moleculin, LLC into MBI coincident with our initial public offering, allowing us to gain control of the WP1066 Portfolio.

AnnaMed was formed in 2012 to take over the development of Annamycin from a prior drug development company, Callisto Pharmaceuticals, Inc., or Callisto. Callisto ceased development work on Annamycin leading to the termination of its IND by the FDA. In order to satisfy unmet license obligations, Callisto agreed to transfer all available Annamycin data to AnnaMed, which data we used in our initial filing of an IND.

IntertechBio was formed in 2009 to license and begin development on the WP1122 Portfolio. In August 2015, IntertechBio agreed to assign all license rights to us in exchange for 630,000 shares of our common stock.

Moleculin, LLC was formed in 2006 and was working to develop the WP1066 Portfolio it licensed from MD Anderson. On May 2, 2016, Moleculin, LLC was merged with and into MBI. As a result of the merger, we issued the holders of Moleculin, LLC equity interests and convertible notes, in aggregate, approximately 999,931 shares of our common stock.

Since Moleculin, LLC commenced operations in 2006, substantially all of its efforts had been focused on research, development and the advancement of the WP1066 Portfolio. Moleculin, LLC did not generate any revenue from product sales and, as a result, incurred significant losses.

Neither Moleculin, LLC nor MBI has manufacturing facilities and all manufacturing activities are contracted out to third parties. Additionally, Moleculin, LLC utilized third-party clinical research organizations to carry out clinical trials. Neither Moleculin, LLC nor MBI have a sales organization.

Portfolio Status

Below are important milestones for each drug/portfolio of the Company.

Annamycin

- Received Orphan Drug Status for Annamycin – On March 21, 2017 we received notice from the FDA that we had obtained Orphan Drug designation for Annamycin for the treatment of AML effective March 20, 2017.

- Plan for Clinical Trials for Annamycin – In October 2016, we identified some significantly positive findings from our detailed review of the last clinical trial for Annamycin by a prior developer, which gave rise to a modification of our own clinical development plan. That prior developer had conducted a clinical trial with Annamycin, but then subsequently failed to maintain their IND with the FDA. We identified that Annamycin may have greater potential for efficacy than we originally believed, based on an unexpected potential opportunity to increase the drug's MTD.

  Based on the results of the prior clinical trials, we believe Annamycin may be different from currently approved induction therapy drugs in four key ways: (i) it has demonstrated clinical activity in a patient population for whom there are currently no effective therapies, (ii) it appears to be capable of avoiding the "multi-drug resistance" mechanisms that have been associated with limiting the effectiveness of currently approved anthracyclines; (iii) it has been shown to be non-cardiotoxic in animal models and little to no cardiotoxicity has been reported from the use of Annamycin in 114 patients; and (iv) in certain AML cell lines, it has been shown to be more potent than one of the leading approved anthracyclines.

- Possible Increase in MTD – In particular, the Dose Limiting Toxicities ("DLTs") reported in that previous trial that led to the establishment of the current MTD of 150 mg/m2 were all from patients who had an unusually high number of first-line induction therapy failures prior to being treated with Annamycin. Specifically, of the three patients in the last clinical trial who experienced these DLTs, one of them had failed nineteen prior induction therapy attempts, another had failed sixteen and the other had failed fifteen before being enrolled in the trial. We concluded from our review of this data that, if the heavily treated patients are excluded from the data set, the MTD could have been closer to 250 mg/m2, substantially higher than the level that was actually set by this previous trial.

  We view this as an encouraging development because it means we may have an opportunity to increase the MTD for our next trial from 150 mg/m2 to 200 or even 250 mg/m2. If that turns out to be the case, we believe it could increase the chance for positive outcomes in our next trial.

  With the discovery that we may be able to increase our MTD, we determined to adjust our clinical strategy by adding in a Phase I arm to our next Phase II trial, which will add some expense to our development effort. We believe this change in strategy will add several months to the eventual final approval of the drug, however, we believe that we will publicly announce results from our Phase I/II clinical trial sometime in 2018.

- Filing of an IND for Annamycin – We filed our IND application, with the clinical strategy of increasing the MTD mentioned above, for Annamycin on February 10, 2017. In subsequent discussions, FDA requested certain revisions to the protocol, additional information, and additional data related to CMC. We have the additional information, we have made the requested revisions to the protocol, and we are developing the CMC data. In the interim, we have withdrawn the IND application, in order to resubmit it when the requested data are available. We believe that resubmission of the IND application will occur in time for the IND to become effective by the end of July 2017 and that we may begin Phase I/II clinical trials. IRB ("Institutional Review Board") approvals and site initiations of various clinical sites participating in our Phase I/II clinical trial of Annamycin should occur later in the second half of 2017. However, if we are unable to obtain the required CMC data on a timely basis, we will be delayed in resubmitting our IND application, which will delay the commencement of our clinical trials beyond July 2017.

- Relationship with Dermin – The Company has established relations with a company in Poland - Dermin Sp. Zo. O. ("Dermin"). The Company intends to utilize Dermin's supply of active pharmaceutical ingredient ("API") for Annamycin in its upcoming clinical Phase I/II trial. Moleculin, LLC previously licensed Annamycin to Dermin within a limited region in Europe, enabling Dermin to deploy Polish grant funds toward producing Annamycin. We believe Dermin benefits from a data sharing arrangement giving it access to our clinical data on a faster timeline than it would be able to develop on its own. The additional use of drug product in obtaining the CMC data, mentioned above, will require the Company to manufacture, at an estimated cost of $0.5 million, additional drug product using the Dermin API later in 2017.

WP1066

- Clinician Sponsored IND – A clinician at MD Anderson has advised us that she has submitted to FDA an IND for a physician-sponsored clinical trial involving WP1066 for the treatment of brain tumors. We are participating in a support role, but have no influence on the design or conduct of the clinical trial, or on the IND process. The clinician has indicated that the IND is on hold until documentation of Good Manufacturing Process or GMP production of WP1066 can be presented to the FDA. We anticipate, but are not in a position to influence, let alone guarantee, that this IND will eventually move forward in 2017 and will produce publishable clinical results in 2018.

WP1122

- Advancement of Preclinical Testing for Brain Tumors with WP1122 –WP1122 is our unique inhibitor of glucose metabolism, which is thought to be an important driver of glycolytic brain tumor progression and survival. A similar chemical structure to that which turns morphine into heroine has been used to allow WP1122 to successfully enter the brain and increase circulation time. On October 25, 2016, we announced initial results of the preclinical toxicology work on WP1122, in what we view as an important step toward future clinical trials for WP1122. We indicated that preliminary escalating single dose toxicity testing in mice (oral administration) was successfully completed, in that at even the highest possible dose, no toxic death was observed. In multiple therapeutic doses, WP1122 was well tolerated during intense twice-daily oral dosing. We believe moving forward with preclinical toxicology is the key to our ability to generate proof of concept in humans. We had previously announced the presentation of promising preclinical data in July 2016, supporting the potential for using WP1122 as a treatment for glioblastoma.

Recent Business Developments

Commitment to Supply WP1066 for a potentially grant funded study - Physician-scientists at another major US cancer center have requested and Moleculin has agreed to supply them with WP1066 for testing in a potential grant-funded clinical trial for children with Diffuse Intrinsic Pontine Gliomas (DIPG), a rare and very aggressive form of brain tumor. Studies conducted at this center have suggested that DIPG may be particularly sensitive to the inhibition of the activated form of a cell-signaling protein called STAT3, a primary target of WP1066, and their studies have demonstrated significant anti-tumor activity of WP1066 in DIPG *in vitro* and *in vivo* tumor models.

Closing of a Follow-On Public Offering - In February 2017, we completed a public offering of our common stock and warrants, pursuant to which we received $4.5 million in net proceeds, after deducting underwriting discounts and commissions and estimated offering expenses. On March 24, 2017, warrants associated with this offering were exercised generating an additional $0.80 million in net proceeds.

Results of Operations

The following table sets forth, for the periods indicated, data derived from our statement of operations:

In thousands (unaudited)	Three Months Ended March 31, 2017	2016
Revenue	$ –	$ –
Operating expenses:		
Research and development	683	15
General and administrative	848	306
Depreciation	4	---
Total operating expense	1,535	321
Loss from operations	(1,535)	(321)
Other income (expense):		
Gain from change in fair value of warrant liability	1,059	–
Gain from settlement of liability	149	–
Other expense	(1)	
Interest expense	(1)	(11)
Net loss	$ (329)	$ (332)

Three Months Ended March 31, 2017 compared to three months ended March 31, 2016

Research and Development Expense. Research and development (R&D) expense was $0.68 million and $0.02 million for the three months ended March 31, 2017 and 2016, respectively. The increase of approximately $0.66 million is mainly due to the Company becoming fully operational post its June 1, 2016 IPO. The difference mainly consists of increases by $0.15 million in sponsored research and research consultants, $0.13 million in employee related costs, $0.14 million in manufacturing and stability costs associated with the Company's IND application for Annamycin, $0.1 million in regulatory counsel, $0.07 million in costs associated with the Company's licenses, and $0.07 million of other costs. This increased activity represents the Company's efforts in obtaining Orphan Drug designation for Annamycin and the associated IND application with the FDA.

General and Administrative Expense. General and administrative ("G&A") expense was $0.85 million and $0.31 million for the three months ended March 31, 2017 and 2016, respectively. The expense increase of approximately $0.54 million is mainly due to the Company becoming fully operational post the June 1, 2016 IPO. Specifically, these increases were attributable to $0.25 million associated with the added headcount and associated payroll costs, $0.23 million in legal, auditing, and accounting costs, and $0.06 million in other G&A costs.

Gain from Change in Fair Value of Warrant Liability. The Company recorded a gain of $1.06 million in the first quarter of 2017 for the change in fair value on revaluation of its warrant liability associated with the warrants issued in conjunction with its stock offering on February 14, 2017. The Company is required to revalue certain of its 2017 warrants at the end of each reporting period and reflect in the statement of operations a gain or loss from the change in fair value of the warrant in the period in which the change occurred. We calculate the fair value of the warrants outstanding using the Black-Scholes and Monte Carlo Simulation models. A gain results principally from a decline in the Company's share price during the period and a loss results principally from an increase in the Company's share price.

Gain from settlement of service. During the period, the Company settled a previously incurred expense utilizing shares of its common stock with an attributed value of $3 per share. The gain of $0.15 million reflects the difference in the Company's share price in the open market as of the settlement date and $3 per share.

Interest expense. Interest expense includes expense accrued on our convertible promissory notes issued in 2015 and 2016 bearing interest at the rate of 8% per annum.

Net Loss. The net loss for the three months ended March 31, 2017 was $0.33 million which included the non-cash gains mentioned above aggregating to $1.21 million. Excluding this amount, the net loss for the period was $1.54 million which is an increase of $1.21 million over the previous year's $0.33 million net loss. Included in both net loss numbers for the three months presented was $0.11 million and $0.00 million for the 2017 and 2016, respectively, in stock based compensation.

Liquidity and Capital Resources

As of March 31, 2017, we had $8.88 million of cash and cash equivalents compared to $5.00 million at December 31, 2016. In February 2017, we completed a public offering of our common stock and warrants, pursuant to which we received approximately $4.5 million in net proceeds, after deducting underwriting discounts and commissions and estimated offering expenses. Additionally, during the three months ended March 31, 2017, $0.80 million in cash was received due to warrants being exercised. Cash used in operations was $1.39 million for the first quarter of 2017. We believe that our existing cash and cash equivalents as of March 31, 2017 continues to be sufficient to fund our planned operations into the first quarter of 2018.

We will not generate revenue from product sales unless and until we successfully complete development of, obtain regulatory approval for and begin to commercialize one or more of our product candidates, which we expect will take a number of years and is subject to significant uncertainty. Accordingly, we anticipate that we will need to raise additional capital to fund our future operations. Until such time that we can generate substantial revenue from product sales, if ever, we expect to finance our operating activities through a combination of equity offerings and debt financings and we may seek to raise additional capital through strategic collaborations. However, we may be unable to raise additional funds or enter into such arrangements when needed on favorable terms, or at all, which would have a negative impact on our financial condition and could force us to delay, limit, reduce or terminate our development programs or commercialization efforts or grant to others rights to develop or market product candidates that we would otherwise prefer to develop and market ourselves. Failure to receive additional funding could cause us to cease operations, in part or in full. Furthermore, even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital due to favorable market conditions or strategic considerations, which may cause dilution to our existing stockholders.

The following table sets forth the primary sources and uses of cash of MBI for the period indicated:

In thousands (unaudited)	Three Months Ended March 31,	
	2017	2016
Net cash used in operating activities	$ (1,391)	$ (290)
Net cash used in investing activities	–	(30)
Net cash provided by financing activities	5,265	552
Net increase in cash and cash equivalents	$ 3,874	$ 232

Cash used in operating activities

Net cash used in operating activities was $1.39 million for the three months ended March 31, 2017 compared to $0.29 million for the three months ended March 31, 2016. This increase in use of cash for operations is due to our becoming operational post IPO in mid-2016 as discussed above.

Cash used in investing activities

Net cash used in investing activities was $0 for the three months ended March 31, 2017 compared to $0.03 million for the three months ended March 31, 2016 which was related to note receivable activity in the prior year period.

Cash provided by financing activities

Net cash provided by financing activities was $5.26 million for the three months ended March 31, 2017 compared to $0.55 million for the three months ended March 31, 2016. The activity in 2016 is related to the issuance of convertible notes and in 2017 is related to the Company's follow-on public offering issuing of shares and warrants of its common stock. Of this latter amount, $0.80 million is related to the exercise of warrants post the follow-on offering.

Critical Accounting Policies and Significant Judgments and Estimates

The financial statements have been prepared in accordance with generally accepted accounting principles in the United States, or GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe that the following accounting policies are the most critical to aid in fully understanding and evaluating our reported financial results, and they require our most difficult, subjective or complex judgments, resulting from the need to make estimates about the effect of matters that are inherently uncertain**.**

Acquisition

We acquired Moleculin, LLC on May 2, 2016, and, going forward our financial statements will include the operations of Moleculin, LLC. We account for acquired businesses using the acquisition method of accounting, which requires, among other things, that most assets acquired and liabilities assumed be recognized at their estimated fair values as of the acquisition date and that the fair value of acquired in-process research and development ("IPR&D") be recorded on the balance sheet. Transaction costs are expensed as incurred. Any excess of the consideration transferred over the assigned values of the net assets acquired will be recorded as goodwill. The Company obtained input from third-parties regarding its tangible and intangible assets and other information necessary to measure the fair value of the assets acquired and liabilities assumed in connection with the acquisition of Moleculin, LLC.

Beneficial Conversion Feature

From time to time, we may issue convertible notes that have conversion prices that create an embedded beneficial conversion feature on the issuance date. A beneficial conversion feature exists on the date a convertible note is issued when the fair value of the underlying common stock to which the note is convertible into is in excess of the remaining unallocated proceeds of the note after first considering the allocation of a portion of the note proceeds to the fair value of any attached equity instruments, if any related equity instruments were granted with the debt. We estimate the fair value of our common stock using the most recent selling price available. The intrinsic value of the beneficial conversion feature is recorded as a debt discount with a corresponding amount to additional paid-in capital. The debt discount is amortized to interest expense over the life of the note using the effective interest method.

Research and Development Costs

We record accrued expenses for estimated costs of our research and development activities conducted by third-party service providers, which include the conduct of pre-clinical studies and preparation for clinical trials and contract manufacturing activities. We record the estimated costs of research and development activities based upon the estimated amount of services provided but not yet invoiced, and we include these costs in accrued liabilities in the balance sheets and within research and development expense in the statement of operations. These costs are a significant component of our research and development expenses. We record accrued expenses for these costs based on the estimated amount of work completed and in accordance with agreements established with these third parties.

We estimate the amount of work completed through discussions with internal personnel and external service providers as to the progress or stage of completion of the services and the agreed-upon fee to be paid for such services. We make significant judgments and estimates in determining the accrued balance in each reporting period. As actual costs become known, we adjust our accrued estimates. 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 may vary from our estimates and could result in us reporting amounts that are too high or too low in any particular period. Our accrued expenses are dependent, in part, upon the receipt of timely and accurate reporting from clinical research organizations and other third-party service providers. To date, there have been no material differences from our accrued expenses to actual expenses.

Impairment of Long-Lived Assets

Management reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be realizable or at a minimum annually during the fourth quarter of the year. If an evaluation is required, the estimated future undiscounted cash flows associated with the asset are compared to the asset's carrying value to determine if an impairment of such asset is necessary. The effect of any impairment would be to expense the difference between the fair value of such asset and its carrying value.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISKS

Not applicable to us, as we are a smaller reporting company.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures.

We maintain disclosure controls and procedures designed to ensure that material information required to be disclosed in our filings under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that material information is accumulated and communicated to our management, including our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), as appropriate, to allow timely decisions regarding required disclosures. Our CEO and CFO have evaluated these disclosure controls and procedures as of the end of the period covered by this quarterly report on Form 10-Q and have determined that such disclosure controls and procedures were not effective as disclosed below.

In light of the material weakness described below, we performed additional procedures during the quarter and additional analysis and procedures post-closing to ensure our financial statements were prepared in accordance with generally accepted accounting principles. Accordingly, we believe that the financial statements included in this report fairly present, in all material respects, our financial condition, results of operations and cash flows for the periods presented.

A material weakness is a control deficiency (within the meaning of the Public Company Accounting Oversight Board (PCAOB) Auditing Standard 1305) or combination of control deficiencies that result in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected.

During the last quarter of fiscal 2016, and as our operational activities increased, management determined that it does not have sufficient segregation of duties within its accounting functions, which is a basic internal control. Due to our size and nature, segregation of all conflicting duties may not always be possible and may not be economically feasible. However, to the extent possible, the initiation of transactions, the custody of assets and the recording of transactions should be performed by separate individuals. Management evaluated the impact of our failure to maintain effective segregation of duties on our assessment of our internal control over financial reporting and has concluded that the control deficiency represents a material weakness. Management intends to increase its accounting staff, as soon as economically feasible and sustainable, to remediate this material weakness.

There has been no change in our internal control over financial reporting during our most recent calendar quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are not a party to any pending legal proceedings.

ITEM 1A. RISK FACTORS

For information regarding factors that could affect our results of operations, financial condition and liquidity, refer to the section entitled "Risk Factors" in Part I, Item 1A in our annual report on Form 10-K for the year ended December 31, 2016.

Except as updated below, there have been no material changes from the risk factors previously disclosed in our annual report on Form 10-K for the year ended December 31, 2016 as filed with the SEC.

If we are unable to maintain compliance with the listing requirements of The Nasdaq Capital Market, our common stock may be delisted from The Nasdaq Capital Market which could have a material adverse effect on our financial condition and could make it more difficult for you to sell your shares.

Our common stock is listed on The Nasdaq Capital Market, and we are therefore subject to its continued listing requirements, including requirements with respect to the market value of publicly-held shares, market value of listed shares, minimum bid price per share, and minimum stockholder's equity, among others, and requirements relating to board and committee independence. If we fail to satisfy one or more of the requirements, we may be delisted from The Nasdaq Capital Market.

Pursuant to NASDAQ Listing Rule 5550(a)(2), we are not currently in compliance with the $1.00 minimum closing bid price requirement set forth in such rule as our stock price is currently trading below $1.00 and has been below such threshold since April 5, 2017. Pursuant to NASDAQ Listing Rule 5810(c)(3)(A), if our common stock bid price continues to trade below $1.00 for a period of 30 consecutive business days we will be deemed to have failed to meet the continued listing requirement set forth in NASDAQ Listing Rule 5550(a)(2). If such failure occurs, we will be notified promptly and will have a period of 180 calendar days from such notification to achieve compliance. If we fail to regain compliance during the applicable period, we will receive notification from NASDAQ that our common stock is subject to delisting.

Delisting from The Nasdaq Capital Market may adversely affect our ability to raise additional financing through the public or private sale of equity securities, may significantly affect the ability of investors to trade our securities and may negatively affect the value and liquidity of our common stock. Delisting also could have other negative results, including the potential loss of employee confidence, the loss of institutional investors or interest in business development opportunities.

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

On various dates from August 31, 2015 through January 19, 2016, each as amended on March 10, 2016, we issued certain 8% unsecured promissory notes in aggregate principal amount of $615,000 to certain accredited investors. Upon the completion of the IPO, these notes provided that they be automatically converted into shares of our common stock at their applicable conversion prices, which were $0.1299 with respect to $250,000 in notes and $0.20 per share with respect to the remaining $365,000, to the extent and provided that no holder of these notes was or will be permitted to convert such notes to the extent that the holder or any of its affiliates would beneficially own in excess of 4.99% of our common stock after such conversion. Due to this 4.99% limitation, the remaining principal and accrued interest amounts of the effected notes will remain outstanding and will be converted into shares of our common stock at such time as the 4.99% limitation continues to be met. The IPO was completed on May 31, 2016. On May 31, 2016, pursuant to the conversion feature of the foregoing notes and with restriction of the 4.99% beneficially owned condition limitation, we issued 1,166,503 common shares in total, reducing convertible debt principal by $183,356 and accrued interest by $17,699. Subsequent to these transactions and through March 31, 2017, an additional 2,116,640 common shares were issued due to the number of common shares outstanding allowing for conversion of additional shares under the 4.99% beneficially owned condition limitation. This reduced the convertible debt principal by $323,764 and accrued interest by $30,753. The remaining convertible debt without consideration of accrued interest as of March 31, 2017, if converted on March 31, 2017, would result in an additional 772,484 common shares to be issued. See Note 3 of our financial statements for more information regarding the issuance of the notes.

On January 13, 2017, we agreed to issue 79,167 shares of common stock to a consultant in full settlement for prior services rendered to us. Settlement occurred February 21, 2017 with the issuance of the shares. The consultant was an accredited investor.

We believe that each of the issuances above were exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act regarding transactions not involving a public offering.

On May 31, 2016, we completed our initial public offering, which commenced on May 2, 2016, pursuant to which we sold 1,540,026 shares of our common stock at $6.00 per share with gross proceeds of $9,240,156 and net proceeds of $8,464,183 after deducting underwriting discounts and commissions and offering expenses payable by us. The offer and sale of all the shares in the offering were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-209323), which was declared effective by the SEC on May 2, 2016. Bonwick Capital Partners LLC and Network 1 Financial Securities, Inc. acted as underwriters for the offering.

There has been no material change in the planned use of proceeds from our IPO as described in our final prospectus filed with the SEC on May 3, 2016 pursuant to Rule 424(b). No direct or indirect payments were made by us to any of our directors or officers or their associates, to persons owning ten percent or more of our common stock or to their associates, or to our affiliates, other than payments in the ordinary course of business to officers for salaries and those payments disclosed in “Item 1. Business” of our Form 10-K for the fiscal year 2016 with regard to the license arrangements with HPI. Pending the uses described, we intend to invest the net proceeds in short-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 5. OTHER INFORMATION.

None.

ITEM 6. EXHIBITS

Exhibit Number	Description
4.1	Form of Series A/B/C Warrant Agreement issued in February 2017 offering (incorporated by reference to Exhibit 4.1 of the Form 8-K filed February 9, 2017)
31.1 *	Certification of Principal Executive Officer Pursuant to Section 302 of Sarbanes-Oxley Act of 2002
31.2 *	Certification of Principal Financial Officer Pursuant to Section 302 of Sarbanes-Oxley Act of 2002
32.1 *	Certification of Principal Executive Officer Pursuant to Section 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2 *	Certification of Principal Financial Officer Pursuant to Section 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS *	XBRL Instance Document
101.SCH *	XBRL Taxonomy Extension Schema Document
101.CAL *	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF *	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB *	XBRL Taxonomy Extension Label Linkbase Document
101.PRE *	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

MOLECULIN BIOTECH, INC.

Date: May 12, 2017

By: /s/ Walter V. Klemp
Walter V. Klemp,
Chief Executive Officer and Chairman
(Principal Executive Officer)

Date: May 12, 2017

By: /s/ Jonathan P. Foster
Jonathan P. Foster
Executive Vice President & Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 31.1

OFFICER'S CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Walter Klemp, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Moleculin Biotech, 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.

May 12, 2017

By: /s/ Walter Klemp
Walter Klemp
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

OFFICER'S CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Jonathan Foster, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Moleculin Biotech, 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.

May 12, 2017

By: /s/ Jonathan P. Foster
Jonathan P. Foster
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 of Moleculin Biotech, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Walter Klemp, Chief Executive Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C 78m or 78o(d)); and

- The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

May 12, 2017

By: /s/ Walter Klemp
Walter Klemp
Chief Executive Officer
(Principal Executive Officer)

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

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-Q for the quarter ended March 31, 2017 of Moleculin Biotech, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jonathan Foster, Chief Financial Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C 78m or 78o(d)); and

- The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

May 12, 2017

By: /s/ Jonathan P. Foster
Jonathan P. Foster
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

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