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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

☒QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended June 30, 2021
or
☐TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____
Commission File Number: 001-37758

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)

5300 Memorial Drive, Suite 950 Houston, TX (Address of principal executive offices)	**77007** (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 every Interactive Data File required to be submitted 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 such files). Yes ☒No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See 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 ☐
Non-accelerated filer ☒
Accelerated filer ☐
Smaller reporting company ☒
Emerging growth company ☒

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

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

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

Title of each class	Trading Symbol (s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	MBRX	The NASDAQ Stock Market LLC

The registrant had 28,552,213 shares of common stock outstanding at August 3, 2021.

Moleculin Biotech, Inc.

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PART 1 FINANCIAL INFORMATION

Item 1. Financial Statements

Moleculin Biotech, Inc.
Condensed Consolidated Balance Sheets
(in thousands, except for share and per share data)
(unaudited)

	June 30, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 79,506	$ 15,173
Prepaid expenses and other current assets	2,330	2,025
Total current assets	81,836	17,198
Furniture and equipment, net	395	483
Intangible assets	11,148	11,148
Operating lease right-of-use asset	155	202
Total assets	$ 93,534	$ 29,031
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 1,505	$ 1,129
Accrued expenses and other current liabilities	1,845	1,791
Total current liabilities	3,350	2,920
Operating lease liability - long-term, net of current portion	94	159
Warrant liability - long-term	5,390	8,192
Total liabilities	8,834	11,271
Commitments and contingencies (Note 7)		
Stockholders' equity		
Preferred stock, $0.001 par value; 5,000,000 shares authorized, no shares issued or outstanding	—	—
Common stock, $0.001 par value; 100,000,000 shares authorized; 28,552,213 and 11,536,720 shares issued and outstanding at June 30, 2021 and December 31, 2020, respectively	29	69
Additional paid-in capital	150,231	74,671
Subscription Receivable	(10)	(129)
Accumulated other comprehensive income	55	65
Accumulated deficit	(65,605)	(56,916)
Total stockholders' equity	84,700	17,760
Total liabilities and stockholders' equity	$ 93,534	$ 29,031

See accompanying notes to unaudited condensed consolidated financial statements.

Moleculin Biotech, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenues	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	3,039	3,329	7,145	6,535
General and administrative	2,434	1,653	4,373	3,463
Depreciation and amortization	44	52	88	98
Total operating expenses	5,517	5,034	11,606	10,096
Loss from operations	(5,517)	(5,034)	(11,606)	(10,096)
Other income (loss):				
Gain (loss) from change in fair value of warrant liability	1,173	(5,099)	2,750	(1,254)
Other income, net	8	17	18	22
Interest income, net	92	4	149	7
Net loss	$ (4,244)	$ (10,112)	$ (8,689)	$ (11,321)
Net loss per common share - basic and diluted	$ (0.15)	$ (1.02)	$ (0.35)	$ (1.24)
Weighted average common shares outstanding, basic and diluted	28,451,532	9,913,878	25,148,399	9,117,856
Net Loss	$ (4,244)	$ (10,112)	$ (8,689)	$ (11,321)
Other comprehensive income (loss):				
Foreign currency translation	(6)	25	(10)	(8)
Comprehensive loss	$ (4,250)	$ (10,087)	$ (8,699)	$ (11,329)

See accompanying notes to unaudited condensed consolidated financial statements.

Moleculin Biotech, Inc.
Condensed Consolidated Statements of Cash Flows
(in thousands)
(unaudited)

	Six Months Ended June 30,	
	2021	**2020**
Cash flows from operating activities:		
Net loss	$ (8,689)	$ (11,321)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	88	98
Stock-based compensation	838	805
Change in fair value of warrant liability	(2,750)	1,254
Operating lease, net	109	95
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(305)	(266)
Accounts payable	376	(235)
Accrued expenses and other current liabilities	(72)	295
Net cash used in operating activities	(10,405)	(9,275)
Cash flows from investing activities:		
Purchase of fixed assets	—	(20)
Net cash used in investing activities	—	(20)
Cash flows from financing activities:		
Proceeds from exercise of warrants	63	5
Proceeds from sale of common stock, net of issuance costs	74,685	15,298
Net cash provided by financing activities	74,748	15,303
Effect of exchange rate changes on cash and cash equivalents	(10)	(9)
Net change in cash and cash equivalents	64,333	5,999
Cash and cash equivalents, at beginning of period	15,173	10,735
Cash and cash equivalents, at end of period	$ 79,506	$ 16,734
Supplemental disclosures of cash flow information:		
Cash paid for taxes	$ 7	$ 15
Non-cash investing and financing activities:		
Purchases of property and equipment in accounts payable and accrued liabilities	$ —	$ 21

See accompanying notes to unaudited condensed consolidated financial statements.

Moleculin Biotech, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(in thousands, except for shares)
(unaudited)

	Six Months Ended June 30, 2021								
	Common Stock		Common Stock Subscribed						
	Shares	Par Value Amount	Shares	Par Value Amount	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Subscription Receivable	Stockholder's Equity
Balance, December 31, 2020	11,536,720	$ 69	26,966	$ —	$ 74,671	$ (56,916)	$ 65	$ (129)	$ 17,760
Issuance of common stock, net of issuance costs of $6,159	16,883,420	18	(26,966)	—	74,537	—	—	129	74,684
Reverse stock split	14,285	(60)	—	—	60	—	—	—	—
Warrants exercised	10,000	1	—	—	115	—	—	—	116
Stock-based compensation	—	—	—	—	405	—	—	—	405
Consolidated net loss	—	—	—	—	—	(4,445)	—	—	(4,445)
Cumulative translation adjustment	—	—	—	—	—	—	(4)	—	(4)
Balance, March 31, 2021	28,444,425	$ 28	—	$ —	$ 149,788	$ (61,361)	$ 61	$ —	$ 88,516
Issuance of common stock in connection with equity purchase agreement, net of issuance costs of $403	107,788	1	—	—	—	—	—	—	1
Subscription of common stock in connection with Consulting Agreement	—	—	2,500	—	10	—	—	(10)	—
Stock-based compensation	—	—	—	—	433	—	—	—	433
Consolidated net loss	—	—	—	—	—	(4,244)	—	—	(4,244)
Cumulative translation adjustment	—	—	—	—	—	—	(6)	—	(6)
Balance, June 30, 2021	28,552,213	$ 29	2,500	$ —	$ 150,231	$ (65,605)	$ 55	$ (10)	$ 84,700

	Six Months Ended June 30, 2020								
	Common Stock		Common Stock Subscribed						
	Shares	Par Value Amount	Shares	Par Value Amount	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Subscription Receivable	Stockholders' Equity
Balance, December 31, 2019	7,621,338	$ 46	—	$ —	$ 55,055	$ (39,561)	$ 31	$ —	$ 15,571
Issuance of common stock, net of issuance costs of $709	1,250,000	7	—	—	559	—	—	—	566
Stock-based compensation	—	—	—	—	397	—	—	—	397
Consolidated net loss	—	—	—	—	—	(1,209)	—	—	(1,209)
Cumulative translation adjustment	—	—	—	—	—	—	(33)	—	(33)
Balance, March 31, 2020	8,871,338	$ 53	—	$ —	$ 56,011	$ (40,770)	$ (2)	$ —	$ 15,292
Issued for cash - sale of common stock, net of issuance costs of $336	1,195,162	7	—	—	10,000	—	—	—	10,007
Warrants exercised	750	—	—	—	9	—	—	—	9
Stock-based compensation	—	—	—	—	408	—	—	—	408
Consolidated net loss	—	—	—	—	—	(10,112)	—	—	(10,112)
Cumulative translation adjustment	—	—	—	—	—	—	25	—	25
Balance, June 30, 2020	10,067,250	$ 60	—	$ —	$ 66,428	$ (50,882)	$ 23	$ —	$ 15,629

See accompanying notes to unaudited condensed consolidated financial statements.

Moleculin Biotech, Inc.
Notes to the Unaudited Condensed Consolidated Financial Statements

1. Nature of Business

The terms "MBI" or "the Company", "we", "our", and "us" are used herein to refer to Moleculin Biotech, Inc. MBI is a clinical-stage pharmaceutical company, organized as a Delaware corporation in July 2015. The Company's focus is on the treatment of highly resistant cancers and viruses through the development of its drug candidates. These candidates are based substantially on discoveries licensed from The University of Texas System on behalf of the MD Anderson Cancer Center, which we refer to as MD Anderson. MBI formed Moleculin Australia Pty. Ltd., (MAPL), a wholly owned subsidiary in June 2018, to perform certain preclinical development in Australia. This has enabled the Company to realize the benefits of certain research and development tax credits in Australia. In July 2021, MBI formed Moleculin Amsterdam B.V., a wholly owned subsidiary, to act as its legal representative for clinical trials in Europe for Moleculin Biotech, Inc.

In 2019, the Company sublicensed essentially all of the rights to its technologies in 29 countries in Europe and Asia to WPD Pharmaceuticals Sp.z o.o. (WPD or WPD Pharmaceuticals) in exchange for collaboration on development in Europe. Also in 2019, the Company sublicensed its technologies to Animal Life Sciences, Inc. (ALI), to enable research and commercialization for non-human use and share development data. As part of this agreement, ALI issued to the Company a 10% interest in ALI.

The Company has three core technologies: 1) Annamycin, which the Company refers to as a "next generation" anthracycline; 2) a portfolio of Immune/Transcription Modulators, of which WP1066 is one of the lead molecules; and 3) a portfolio of Metabolism/Glycosylation Inhibitors, of which WP1122 is the lead molecule. The Company has six drug candidates, representing all three core technologies, and three of those have shown human activity in clinical trials. As of the end of 2020, those three drug candidates accounted for five clinical trials in the United States (U.S.) and Europe. Two of those trials are externally funded studies of WP1066 in brain tumors. Two internally funded Phase 1 clinical trials, Annamycin in acute myeloid leukemia (AML), and WP1220 in cutaneous T-cell lymphoma (CTCL), were successfully concluded. An additional internally funded Phase 1/2 clinical trial of Annamycin in AML is currently ongoing in Poland. In the second quarter of 2021, the Company commenced enrollment and dosed the first subject in its U.S. Phase 1b/2 clinical trial evaluating Annamycin for the treatment of soft tissue sarcoma (STS) lung metastases. The Company anticipates that the externally funded WP1066 trial in brain tumors at MD Anderson will be terminated this year and expects to commence a similar WP1066 externally funded trial elsewhere in 2022.

Additionally, MBI expects a second, grant funded Phase 1b/2 clinical trial of Annamycin in STS lung metastases to be primarily investigator-funded in Poland. MBI also plans to begin a Phase 1/2 clinical trial of Annamycin in combination with Ara-C for the treatment of AML in Europe, by seeking approval for its own clinical trial and, possibly, a second, similar grant funded trial through its sublicensee, WPD Pharmaceuticals in Poland. The Company is actively working with regulatory authorities in the United Kingdom (U.K.) to initiate a Phase 1 clinical trial of WP1122 in healthy volunteers with the intent to progress to COVID-19 patients either there or in locations where the prevalence of COVID-19 will adequately support recruitment. The Company intends to internally fund the initial trials of WP1122 but may seek external funding opportunities if encouraging activity is seen in COVID-19 patients. Additionally, the Company is pursuing filing an Investigative New Drug application (IND) in the U.S. with WP1122 for the treatment of certain cancers in 2021. Finally, the Company continues to seek opportunities to collaborate on a potential Phase 2 clinical study of WP1220 in CTCL.

The Company does not have manufacturing facilities and all manufacturing activities are contracted out to third parties. Additionally, the Company does not have and does not intend to have a sales organization. The Company’s overall strategy is to seek potential outlicensing opportunities with development/commercialization strategic partners who are better suited for the marketing, sales and distribution of its drugs, if approved.

COVID-19 - In March 2020, the World Health Organization declared the outbreak of a novel Coronavirus (COVID-19) as a pandemic, which continues to spread throughout the world. The spread of COVID-19 has caused significant volatility in U.S. and international markets, including Poland, where MBI conducts some of its clinical trials and Italy, where its Annamycin drug supply is produced. There has been limited interruption of its drug supply, and most Polish clinics where the Company is conducting trials are limiting access for monitoring activities. Additionally, MBI believes COVID-19 materially slowed the recruitment of patients for its clinical trials, but it is now beginning to see an increase in recruitment. This could worsen or be alleviated at any time. Furthermore, there is significant uncertainty around the breadth and duration of business disruptions related to COVID-19, as well as its impact on the U.S. and international economies and, as such, the Company is unable to determine if it will have a material impact to its operations. Additionally, the Company believes that the potential for impact to its supply chain due to COVID-19 will be reduced as vaccine production normalizes throughout the industry. In view of current worldwide trends with respect to COVID-19, MBI does not expect COVID-19 to materially impact recruitment for current or future oncology trials as COVID-19 hospitalizations have recently decreased. However, the Company cannot be certain that these trends will continue and there is the possibility they may reverse, especially in view of the increases in the D variant cases.

2. Basis of presentation, principles of consolidation, significant accounting policies and liquidity

Reverse Stock Split - On January 29, 2021, the Company filed a Certificate of Amendment to the amended and restated certificate of incorporation with the Secretary of State and the State of Delaware to effect a reverse stock split of all the issued and outstanding shares of the Company's common stock at a ratio of 1 for 6. The accompanying consolidated financial statements and notes to the consolidated financial statements give retroactive effect to the reverse stock split for all periods presented. Certain amounts in the financial statements, the notes thereto, and elsewhere in the Form 10-Q may be slightly different than previously reported due to rounding up of fractional shares as a result of the reverse stock split.

Basis of Presentation – Unaudited Interim Condensed Consolidated Financial Information - The accompanying unaudited interim condensed consolidated financial statements and related notes have been prepared in accordance with accounting principles generally accepted in the U.S. (U.S. GAAP) for financial information, and in accordance with the rules and regulations of the U.S. Securities and Exchange Commission (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 condensed consolidated 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 condensed unaudited consolidated financial statements should be read in conjunction with the audited financial statements of the Company as of December 31, 2020 and December 31, 2019 and notes thereto contained in the Form 10-K filed with the SEC on March 24, 2021.

Principles of Consolidation - The accompanying unaudited condensed consolidated financial statements include the accounts of the Company and its wholly owned subsidiary. All intercompany balances and transactions have been eliminated in consolidation. Any reference in these notes to applicable guidance is meant to refer to U.S. GAAP. The Company views its operations and manages its business in one operating segment. All long-lived assets of the Company reside in the U.S.

Significant Accounting Policies - The Company's significant accounting policies are described in Note 2, *Basis of Presentation, principles of consolidation and significant accounting policies*, to the consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2020. There have been no material changes to the significant accounting policies during the six months ended June 30, 2021, other than those noted below.

Use of Estimates - The preparation of these condensed consolidated financial statements 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 expenses during the reporting period. Actual results could differ from those estimates. Management considers many factors in selecting appropriate financial accounting policies and controls, and in developing the estimates and assumptions that are used in the preparation of these financial statements. Management must apply significant judgment in this process. In addition, other factors may affect estimates, including expected business and operational changes, sensitivity and volatility associated with the assumptions used in developing estimates, and whether historical trends are expected to be representative of future trends. The estimation process often may yield a range of potentially reasonable estimates of the ultimate future outcomes and management must select an amount that falls within that range of reasonable estimates. This process may result in actual results differing materially from those estimated amounts used in the preparation of financial statements. Estimates are used in the following areas, among others: fair value estimates on intangible assets, warrants, and stock-based compensation expense, as well as accrued expenses and taxes.

Liquidity and Financial Condition - The Company is an early stage and emerging growth company (EGC) and has not generated any revenues to date. As such, the Company is subject to all of the risks associated with early stage and emerging growth companies. Since inception, the Company has incurred losses and negative cash flows from operating activities. For the six months ended June 30, 2021 and 2020, the Company incurred net losses of $8.7 million and $11.3 million, respectively, and had net cash flows used in operating activities of $10.4 million and $9.3 million, respectively. At June 30, 2021, the Company had an accumulated deficit of $65.6 million and cash and cash equivalents of $79.5 million. The Company expects its cash on hand as of June 30, 2021 will be sufficient to fund the Company's operations beyond the near term. Such projections are subject to changes in the Company's internally funded preclinical and clinical activities, including unplanned preclinical and clinical activity. The Company does not expect to experience positive cash flows from operating activities in the near future and anticipates incurring operating losses for the next few years as it supports the development of its core technologies to the point of generating revenue, most likely via outlicensing, and continues to invest in research and development for additional applications of the Company's core technologies and potentially increase its pipeline of drug candidates. If the Company needs to raise additional capital in order to continue to execute its business plan, there is no assurance that additional financing will be available when needed or that management will be able to obtain financing on terms acceptable to the Company. A failure to raise sufficient capital could adversely impact the Company's ability to achieve its intended business objectives and meet its financial obligations as they become due and payable.

Cash and Cash Equivalents - Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents. The Company maintains cash accounts principally at one financial institution in the U.S., which at times, may exceed the Federal Deposit Insurance Corporation's limit. The Company has not experienced any losses from cash balances in excess of the insurance limit. The Company's management does not believe the Company is exposed to significant credit risk at this time due to the financial condition of the financial institution where its cash is held.

Fair Value of Financial Instruments - The Company's financial instruments consist primarily of non-trade receivables, accounts payable, accrued expenses and its warrant liability. The carrying amount of non-trade receivables, accounts payable, and accrued expenses approximates their fair value because of the short-term maturity of such.

The Company has categorized its assets and liabilities that are valued at fair value on a recurring basis into a three-level fair value hierarchy in accordance with U.S. 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 sheets 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 following table provides liabilities reported at fair value and measured on a recurring basis at June 30, 2021 and December 31, 2020 (in thousands):

Description	Fair Value	Level 1	Level 2	Level 3
Fair value of warrant liability as of June 30, 2021:	$ 5,390	$ —	$ —	$ 5,390
Fair value of warrant liability as of December 31, 2020:	$ 8,192	$ —	$ —	$ 8,192

The table below of Level 3 liabilities (in thousands) begins with the valuation as of the beginning of the second quarter and then is adjusted for changes in fair value that occurred during the second quarter. The ending balance of the Level 3 financial instrument presented above represents the Company's 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.

Three Months Ended June 30, 2021	Warrant Liability Long-Term	Warrant Liability Total
Balance, March 31, 2021	$ 6,563	$ 6,563
Change in fair value - net	(1,173)	(1,173)
Balance, June 30, 2021	$ 5,390	$ 5,390

The table below of Level 3 liabilities (in thousands) begins with the valuations as of December 31, 2020 and is adjusted for the exercises and for changes in fair value that occurred during the six months ended June 30, 2021. The ending balance of the Level 3 financial instrument presented above represents the Company's 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.

Six Months Ended June 30, 2021	Warrant Liability Long-Term	Warrant Liability Total
Balance, December 31, 2020	$ 8,192	$ 8,192
Exercise of warrants	(52)	(52)
Change in fair value - net	(2,750)	(2,750)
Balance, June 30, 2021	$ 5,390	$ 5,390

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. For purposes of this calculation, options to purchase common stock, restricted stock units subject to vesting and warrants to purchase common stock are considered to be common stock equivalents. 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 antidilutive. For the three months ended June 30, 2021 and 2020, approximately 4.0 million and approximately 3.5 million, respectively, of potentially dilutive shares were excluded from the computation of diluted earnings per share due to their antidilutive effect. For the six months ended June 30, 2021 and 2020, approximately 3.9 million and 3.3 million, respectively, of potentially dilutive shares were excluded from the computation of diluted earnings per share due to their antidilutive effect.

Subsequent Events - The Company’s management reviewed all material events through the date of these unaudited condensed consolidated financial statements. See notes and specifically Note 8 - Subsequent Events.

Recent Accounting Pronouncements

In August 2020, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2020-06, Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40) (ASU 2020-06). ASU 2020-06 simplifies the complexity associated with applying U.S. GAAP for certain financial instruments with characteristics of both liabilities and equity, including convertible instruments and contracts in an entity's own equity. The guidance is effective for the Company beginning on January 1, 2022 and prescribes different transition methods for the various provisions. The Company is currently evaluating the impact that this standard will have, if any, on its consolidated financial statements.

In May 2021, the FASB issued ASU No. 2021-04, Earnings Per Share (Topic 260), Debt - Modifications and Extinguishments (Subtopic 470-50), Compensation - Stock Compensation (Topic 718), and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40): Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options. ASU 2021-04 clarifies certain aspects of the current guidance to promote consistency among reporting of an issuer's accounting for modifications or exchanges of freestanding equity-classified written call options (for example, warrants) that remain equity classified after modification or exchange. The amendments in this update are effective for all entities for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. Early adoption is permitted for all entities, including adoption in an interim period. The Company is currently evaluating the potential impact this standard will have, if any, on its consolidated 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 condensed consolidated financial statements.

3. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following components (in thousands):

	June 30, 2021	December 31, 2020
Accrued research and development	$ 1,098	$ 907
Accrued legal, regulatory, professional and other	437	262
Operating lease liability - current	126	118
Accrued payroll and bonuses	106	426
Accrued related party	78	78
Total accrued expenses and other current liabilities	$ 1,845	$ 1,791

Additionally, accounts payable includes $48,000 as of June 30, 2021 and December 31, 2020, respectively, for a related party payable.

4. Warrants

Liability Classified Warrants

The Company uses the Black-Scholes option pricing model to determine the fair value of its warrants at the date of issue and outstanding at each reporting date. The risk-free interest rate assumption is based upon observed interest rates on zero coupon U.S. Treasury bonds linearly interpolated to obtain a maturity period commensurate with the term of the warrants. Estimated volatility is a measure of the amount by which the Company's stock price is expected to fluctuate each year during the expected life of the warrants. Beginning in 2020, only the volatility of the Company's own stock is used in the Black-Scholes option pricing model as it now has sufficient historic data in its stock price.

The assumptions used in determining the fair value of the liability classified warrants are as follows:

	June 30, 2021	December 31, 2020
Risk-free interest rate	0.1% to 0.7%	0.1% to 0.3%
Volatility	87.6% to 129.1%	113.7% to 127.4%
Expected life (years)	0.6 to 4.1	1.1 to 4.6
Dividend yield	—%	—%

A summary of the Company's liability classified warrant activity during the six months ended June 30, 2021 and related information follows:

	Number of Shares Under Warrant	Range of Warrant Exercise Price per Share		Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (Years)
Balance at January 1, 2021	2,733,645	$ 6.30	$ 16.80	$ 9.45	3.6
Granted	—	—	—	—	—
Exercised	(10,000)	6.30	6.30	6.30	—
Expired	—	—	—	—	—
Balance at June 30, 2021	2,723,645	$ 6.30	$ 16.80	$ 9.46	3.1
Exercisable at June 30, 2021	2,723,645	$ 6.30	$ 16.80	$ 9.46	3.1

For a summary of the changes in fair value associated with the Company's warrant liability for the six months ended June 30, 2021, see Note 2 - Basis of presentation, principles of consolidation and significant accounting policies - Fair Value of Financial Instruments.

Equity Classified Warrants

During the six months ended June 30, 2021, the Company granted equity-classified warrants to purchase 71,500 shares of common stock vesting quarterly over five years while services are being rendered.

At June 30, 2021, the Company had 146,502 equity classified warrants outstanding and 54,410 warrants were exercisable. At December 31, 2020, the Company had 109,639 equity classified warrants outstanding and 85,472 warrants were exercisable.

The Company recorded stock compensation expense for equity classified warrants of $11,000 and $5,000 for the three and six months ended June 30, 2021 and 2020, respectively and $328,000 of unrecognized stock compensation expense related to the Company's equity classified warrants.

5. Equity

2021 Stock Issuances

In June 2021, the Company entered into an At Market Issuance Sales Agreement (2021 ATM Agreement) with Oppenheimer & Co. Inc. Pursuant to the terms of the 2021 ATM Agreement, the Company may offer and sell, from time to time through Oppenheimer shares of the Company's common stock with an aggregate sales price of up to $50.0 million. As of the date of this report, there have been no issuances under the 2021 ATM Agreement.

In June 2021, the Company entered into a Purchase Agreement with Lincoln Park Capital Fund. Pursuant to the terms of the Purchase Agreement, Lincoln Park agreed to purchase from the Company up to $20.0 million of common stock (subject to certain limitations) from time to time during the term of the Purchase Agreement. Pursuant to the terms of the Purchase Agreement, at the time the Company signed the Purchase Agreement, the Company issued 107,788 shares of common stock to Lincoln Park as an initial fee for its commitment to purchase shares of the Company's common stock under the Purchase Agreement, and has agreed to issue Lincoln Park up to an additional 53,893 shares of common stock as commitment shares pro-rata when and if Lincoln Park purchases (at our discretion) the $20.0 million aggregate commitment. The initial commitment shares issued in June 2021 were valued at $0.4 million, recorded as an addition to equity for the issuance of common stock and treated as a reduction to equity as a cost of capital to be raised under the Purchase Agreement.

In February 2021, the Company entered into an underwritten public offering for the sale by the Company of 14,273,684 shares of its common stock at a public offering price of $4.75 per share and granted the underwriters a 30-day option to purchase up to an additional 2,141,052 shares of common stock offered in the public offering, which was exercised. The Company received total proceeds of $78.0 million, prior to deducting the underwriting discount and other estimated offering expenses. In January 2021 the Company issued 468,684 shares for gross proceeds of $2.9 million using the Company's 2020 At The Market Agreement (2020 ATM Agreement) with Oppenheimer & Co., Inc. The Company terminated the 2020 ATM Agreement on February 2, 2021.

Stock-Based Compensation and Outstanding Awards

The 2015 Stock Plan provides for the grant of stock options, stock awards, stock unit awards, and stock appreciation rights. As of June 30, 2021, there were 43,628 shares remaining to be issued under the 2015 Stock Plan.

Stock-based compensation for the three and six months ended June 30, 2021 and 2020, respectively (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
General and administrative	$ 332	$ 329	$ 641	$ 664
Research and development	101	79	197	141
Total stock-based compensation expense	$ 433	$ 408	$ 838	$ 805

During the six months ended June 30, 2021, the Company granted 532,865 stock options with a weighted average fair value of $3.24 per share and 150,000 shares of restricted stock units with a weighted average fair value of $3.73 per share. These stock options have a weighted average exercise price of $3.75 per share and vest over a one to three-year period from the grant date on a straight-line basis over the requisite service period for each separately vesting portion of the award as if the award was, in substance, multiple awards. These restricted stock units vest annually in four equal installments.

6. Income Taxes

Deferred income tax assets and liabilities are determined based upon differences between the financial reporting and tax basis 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.

The Company does not expect to pay any significant federal, state, or foreign income taxes in 2021 as a result of the losses recorded during the three and six months ended June 30, 2021 and the additional losses expected for the remainder of 2021 and cumulative net operating loss carryforwards. 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 a result, as of June 30, 2021 and December 31, 2020, the Company maintained a full valuation allowance for all deferred tax assets.

The Company recorded no income tax provision for the three and six months ended June 30, 2021 and 2020, respectively. The effective tax rate for the six months ended June 30, 2021 and 2020 is 0%. The income tax rates vary from the federal and state statutory rates primarily due to the change in fair value of the stock warrants and 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 allowance 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

In addition to the commitments and contingencies described elsewhere in these notes, see below for a discussion of the Company's commitments and contingencies as of June 30, 2021.

Lease Obligations Payable

The following summarizes quantitative information about the Company's operating leases for the three and six months ended June 30, 2021 and 2020, respectively (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Lease cost:				
Operating lease cost	$ 29	$ 29	$ 58	$ 58
Variable lease cost	7	7	14	14
Short-term lease cost	—	4	—	9
Total	$ 36	$ 40	$ 72	$ 81

The Company recorded approximately $10,000 and $21,000 in sublease income from a related party for the three and six months ended June 30, 2021 and 2020, respectively. Sublease income is recorded as other income, net on the Company's condensed consolidated statement of operations and comprehensive loss. Operating cash flows from operating leases was $34,000 and $33,000 for the three months ended June 30, 2021 and 2020, respectively, and $68,000 and $66,000 for the six months ended June 30, 2021 and 2020, respectively.

Licenses

MD Anderson - Total expenses related to the Company's license agreements with MD Anderson were $56,000 and $61,000 for the three months ended June 30, 2021 and 2020, respectively, and $94,000 and $122,000 for the six months ended June 30, 2021 and 2020, respectively.

HPI - On March 16, 2020, the Company entered into two agreements with a related party, Houston Pharmaceuticals, Inc. (HPI). The first agreement, which has a term of two years, continues a prior consulting arrangement with HPI on the Company's licensed molecules and requires payments of $43,500 per quarter to HPI. The second agreement, which can be cancelled with sixty days' notice by either party, allows the Company's employees access to laboratory equipment owned by HPI for a payment of $15,000 per quarter to HPI. Total expenses related to the Company's agreements with HPI were $59,000 for the three months ended June 30, 2021 and 2020, respectively, and $117,000 and $167,000 for the six months ended June 30, 2021 and 2020, respectively.

Sponsored Research Agreements with MD Anderson - MBI has a Sponsored Laboratory Study Agreement with MD Anderson expiring December 31, 2022. The expenses recognized under this MD Anderson agreement with regards to the Sponsored Laboratory Study Agreements were $184,000 and $212,000 for the three months ended June 30, 2021 and 2020, respectively, and $278,000 and $358,000 for the six months ended June 30, 2021 and 2020, respectively.

8. Subsequent Events

In addition to the subsequent events discussed elsewhere in these notes, see below for a discussion of the Company's subsequent events occurring after June 30, 2021.

In July 2021, the Company amended its Sponsored Laboratory Study Agreement with MD Anderson for total payment of $0.2 million to support the continuation of the project.

On August 10, 2021, the Company entered into a portfolio development advisory agreement with an entity affiliated with Dr. Waldemar Priebe. In connection with the services to be provided pursuant to the agreement, the Company agreed to issue the entity a ten-year warrant to purchase 250,000 shares of Company common stock with an exercise price of $3.08, which was equal to the market price of the Company’s common stock on the effective date of the agreement. The warrant vest as follows: (a) 50% vests upon execution of the agreement, provided the advisor does not terminate the agreement prior to the end of the one-year term; and (b) 50% vests 60 days after the end of the one-year term, subject to the Company’s Board of Directors determining that the services to be provided have been adequately performed; provided that the warrant shall vest in full upon a change of control event.

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

This Form 10-Q, including the Management's Discussion and Analysis of Financial Condition and Results of Operations, 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:

- The success or the lack thereof, including the ability to recruit patients of our clinical trials through all phases of clinical development;
- Our ability to satisfy any requirements imposed by the FDA (or its foreign equivalents) as a condition of our clinical trials proceeding or beginning as planned;
- The impact of COVID-19 on our clinical trials, clinical drug candidate supplies, preclinical activities and our ability to raise future financing;
- Our ability to continue our relationship with MD Anderson, including our ability to maintain current licenses and license future intellectual property resulting from our sponsored research agreements with MD Anderson;
- Our ability to obtain additional funding to commence or continue our clinical trials, fund operations and develop our product candidates;
- The need to obtain and retain regulatory approval of our drug candidates, both in the United States and in Europe, and in countries deemed necessary for future trials;
- Our ability to complete our clinical trials in a timely fashion and within our expected budget and resources;
- Compliance with obligations under intellectual property licenses with third parties;
- Any delays in regulatory review and approval of drug candidates in clinical development;
- Potential efficacy of our drug candidates;
- Our ability to commercialize our drug candidates;
- Market acceptance of our drug candidates;
- Competition from existing therapies or new therapies that may emerge;
- Potential product liability claims;
- Our dependency on third-party manufacturers to successfully, and timely, supply or manufacture our drug candidates for our preclinical work and our clinical trials;
- Our ability to establish or maintain collaborations, licensing or other arrangements;
- The ability of our sublicense partners to successfully develop our product candidates in accordance with our sublicense agreements;
- 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.

Overview

We are a clinical stage pharmaceutical company focused on the treatment of highly resistant cancers and viruses. We have three core technologies, based substantially on discoveries made at M.D. Anderson Cancer Center (MD Anderson). These three core technologies are Annamycin, the WP1066 Portfolio, and the WP1122 Portfolio and include a total of six drug candidates, three of which have now shown human activity in clinical trials.

Three Core Technologies

We consider Annamycin to be a "next generation" anthracycline, unlike any currently approved anthracyclines, as it is designed to avoid multidrug resistance mechanisms with little to no cardiotoxicity (the efficacy of all currently approved anthracyclines is limited by both multidrug resistance and cardiotoxicity). WP1066 is one of several Immune/Transcription Modulators, designed to stimulate the immune response to tumors by inhibiting the errant activity of Regulatory T-Cells (TRegs) while also inhibiting key oncogenic transcription factors, including p-STAT3 (phosphorylated signal transducer and activator of transcription 3), c-Myc (a cellular signal transducer named after a homologous avian virus called Myelocytomatosis) and HIF-1α (hypoxia inducible factor 1α). These transcription factors are widely sought targets that are believed to contribute to an increase in cell survival and proliferation, and the angiogenesis (coopting vasculature for blood supply), invasion, metastasis and inflammation associated with tumors. They may also play a role in the inability of immune checkpoint inhibitors to affect more resistant tumors. WP1220 is a close analog to WP1066 that we have developed as a potential topical therapy for skin-related diseases.

Our third core technology is centered on new compounds designed to target the roles of glycolysis and glycosylation in both cancer and viral diseases. As an example, 2-deoxy-D-glucose (2-DG) is a glucose decoy that is capable of inhibiting glycolysis, thereby cutting off the primary fuel supply for both cancer cells and viral host cells by taking advantage of their high level of dependence on glucose in comparison to healthy cells. In addition, 2-DG is capable of altering glycosylation, a process by which, when coopted by tumors, cancer cells are believed to evade the body's immune response. In the case of viruses like SARS-CoV-2 (the virus responsible for COVID-19), glycosylation forms the glycoprotein spikes surrounding the coronavirus that give it its name and enable both evasion of the immune response and the ability to infect new host cells. One of the limitations of 2-DG, however, is how rapidly it is metabolized, resulting in a short circulation time and limited tissue/organ distribution characteristics. Our lead Metabolism/Glycosylation Inhibitor, WP1122, is a prodrug of 2-DG that appears to improve the drug-like properties of 2-DG by increasing its circulation time and improving tissue/organ distribution. Recent published research has identified that 2-DG has antiviral potential against SARS-CoV-2 *in vitro* and, based on publicly available information, a recently completed Phase 2 clinical trial by an unrelated company in India has reported efficacy in COVID-19 patients, resulting in the Emergency Use Authorization of 2-DG by the Drugs Controller General of India. New research also points to the potential for 2-DG to be capable of enhancing the usefulness of checkpoint inhibitors. Considering that WP1122 generally outperforms 2-DG alone in both *in vitro* and *in vivo* tumor models and in viral *in vitro* models, we believe WP1122 has the potential to become an important drug to potentiate existing therapies, including checkpoint inhibitors. We are also engaged in preclinical development of additional antimetabolites (WP1096 and WP1097) targeting glycolysis and glycosylation.

Clinical Trials

During 2020, three of our drug candidates accounted for five clinical trials in the U.S. and Europe. Two of those trials are ongoing externally funded studies of WP1066 in brain tumors. Two of our internally funded Phase 1 clinical trials have concluded. The U.S. trial for Annamycin in acute myeloid leukemia (AML) successfully met its safety endpoint, and the trial for WP1220 in cutaneous T-cell lymphoma (CTCL) demonstrated an objective response rate of 45% and a clinical benefit rate of 100%. An additional Phase 1/2 clinical trial of Annamycin in AML is also internally funded and is currently ongoing. In 2021, we anticipate the initiation of four or more new clinical trials in addition to the three trials continuing from 2020. We anticipate that the brain tumor trial at MD Anderson will be terminated this year and we expect a new, similar externally funded trial to begin elsewhere in 2022.

Below we use certain terms to describe our clinical trials. By "internally funded" we mean that the primary costs of the preclinical activity and clinical trials are funded by us. "Externally funded" drug candidates include those for which preclinical work is funded and performed by external collaborators and for which clinical trials are physician sponsored. For externally funded research, any grant funds that support such preclinical work or clinical trials and most of the associated expenses are not reflected in our financial statements. However, the costs of drug product and other minor supporting activities that we provide for externally funded preclinical activities and clinical trials are included in our financial statements.

Recently reported data from our sponsored research demonstrates that in AML mouse models, the combination of Annamycin with Ara-C (a chemotherapy drug commonly used in AML patients) has a synergistic effect, suggesting that this combination may be more beneficial for AML patients than Annamycin as a single agent. Accordingly, we plan to begin a Phase 1/2 clinical trial of Annamycin in combination with Ara-C for the treatment of AML in Europe, by seeking approval for our own internally funded clinical trial in Europe and possibly a second, similar trial through our sublicensee, WPD Pharmaceuticals, in Poland. Furthermore, we received U.S. Food and Drug Administration (FDA) clearance in late 2020 to proceed with a Phase 1b/2 clinical trial of Annamycin for the treatment of soft tissue sarcoma (STS) lung metastases and we began this internally funded trial in the U.S. in the third quarter of 2021. Additionally, we expect in 2021 a second Phase 1b/2 clinical trial of Annamycin in sarcoma lung metastases to be primarily investigator-funded in Europe.

WP1066 is currently in two U.S. physician-sponsored Phase 1 trials, one at MD Anderson for the treatment of glioblastoma (GBM) in adults and another at Emory University for the treatment of pediatric brain tumors (including DIPG and medulloblastoma). We began and completed a "proof-of-concept" Phase 1 clinical trial in 2020 in Poland for a third drug, WP1220 (a molecule in the WP1066 Portfolio), for the topical treatment of cutaneous T-cell lymphoma (CTCL). We are actively seeking collaboration with a strategic partner in the near term for external funding for the continued development of WP1220 in a Phase 2 clinical trial as a topical therapy for CTCL, and based on the pace of current discussions, we do not anticipate this trial to begin this year. If we are not successful in this outreach, we may choose to use internal funds to generate additional human data to facilitate such outreach efforts.

Finally, we are also in discussions with regulatory authorities in the United Kingdom (U.K.) to initiate a Phase 1 clinical trial of WP1122 in healthy volunteers with the intent to progress to COVID-19 patients either there or in locations where the prevalence of COVID-19 will adequately support recruitment. We intend to internally fund the initial trials of WP1122 but may seek external funding opportunities. Additionally, we are planning to file an IND in the U.S. for the treatment of certain cancers with WP1122.

In summary, we had five clinical trials underway or concluded in 2020 and we now expect up to seven or more clinical trials to be underway or approved in 2021, including externally funded trials.

Update on Clinical Trials and Licensing

Annamycin

Annamycin is currently in one Phase 1/2 clinical trial in Europe, and the Phase 1 portion of another Phase 1/2 AML trial in the U.S. has been concluded, subject to final database lock and closure, which should occur in the third quarter of 2021.

The trial in Poland is in its fifth cohort, where patients are being treated at 240 mg/m2. Patient 2 in this cohort experienced certain elevated liver enzymes (AST and ALT), which under the original clinical trial protocol, were considered a dose limiting toxicity (DLT). In this instance, the DLT was secondarily related to concomitant medication not being withheld. Although that DLT resolved, in accordance with the trial protocol, the cohort was expanded and has now enrolled a total of five patients. In March 2021, patient 4 in this cohort experienced a similar DLT, which also resolved. Although treatment was discontinued for Patients 2 and 4, a total of three patients in this cohort received the full dose of Annamycin without any DLTs and, based on preliminary data, all three responded to treatment, with one relapsed patient experiencing a complete response (CR), a refractory patient experiencing a partial response (PR) and another relapsed patient completely clearing circulating blasts. With this preliminary data, 67% of the patients receiving a full course of treatment at 240 mg/m2 experienced clinical benefit. One of these patients was a refractory patient which experienced the PR.

Although the elevated liver enzymes described above meet the test of a "Dose Limiting Toxicity" per the original clinical trial protocol, our medical advisors have determined that these instances were transient and self-limited with no evidence of serious sequalae (related longer-term negative effects) and, therefore, should not be considered DLTs in future patients unless these elevated enzyme levels do not return to near baseline (baseline or less than or equal to grade 1) within a reasonable time or if there is other evidence of serious sequalae. Based on this new data, we amended the protocol for this trial in Poland to change the DLT criteria as it relates to transient grade 3 elevations to allow us to dose three additional patients in the 240 mg/m2 cohort. This amendment was approved and granted allowance by regulatory authorities in Poland in July 2021. If no DLT is experienced with these next three patients, we will escalate dosing in new cohorts by 30 mg/m2 instead of the 60 mg/m2 previously planned, and with a de-escalation of 15 mg/m2 at the DLT dose if future patients experience a DLT.

Additionally, our sublicense partner, WPD Pharmaceuticals Sp.z o.o. (WPD), recently announced that it was conditionally awarded a reimbursement grant of approximately $6.7 million (20.4 million PLN) from the Polish National Center for Research and Development (NCRD), for the development of Annamycin. The funds may be used for the continued development of Annamycin, including a possible clinical trial of Annamycin in combination with Ara-C for which this grant is expected to cover the reimbursement of about 60% of planned costs. WPD is a sub-licensee of certain technologies from us in 29 countries in Europe and Asia. We plan to commence a similar trial combining Annamycin with Ara-C for the treatment of AML prior to the end of 2021 and possibly prior to this grant funded trial starting. The grant-funded trial may begin in 2021 but since this is an externally funded trial subject to ongoing granting authority oversight, we cannot provide any assurance as to when or if it will commence.

Regarding our planned U.S. clinical trial of Annamycin for the treatment of STS lung metastases, we executed a clinical trial agreement with Sarcoma Oncology Research Center, an institution in Santa Monica, CA to be the first clinical site. In the second quarter of 2021 this trial began enrolling and dosing patients in its U.S. Phase 1b/2 clinical trial evaluating Annamycin for the treatment of STS lung metastases.

Earlier in 2021, we announced that the Agencja Badań Medycznych (The Medical Research Agency) a Polish state agency responsible for development of scientific research in the field of medical and health sciences, awarded a grant equivalent to $1.5 million to the Maria Sklodowska-Curie National Research Institute to fund a Phase 1b/2 clinical trial of Annamycin for the treatment of STS lung metastases. The grant-funded clinical trial will be led by Prof. Piotr Rutkowski, MD, PhD, Head of Department of Soft Tissue/Bone Sarcoma and Melanoma at the Maria Sklodowska-Curie National Research Institute of Oncology in Warsaw, Poland. Prof. Piotr Rutkowski will be assisted, in part, by WPD who will provide support in preparation for and conduct of the clinical trial, which is expected to begin this year. As a part of the collaboration between Moleculin and Prof. Rutkowski, Moleculin will be supplying the drug product and other ancillary services necessary for the clinical trial, but Moleculin will not participate in conducting the clinical trial. This trial is independent from and will be in addition to the U.S. clinical trial Moleculin is planning to conduct with Annamycin in STS lung metastases. As an important point of differentiation, the clinical protocol for the Polish trial provides for a different dosing regimen than the U.S. trial.

WP1066

The clinical trial of WP1066 for the treatment of adult brain tumors at MD Anderson has completed the fourth cohort at 8mg/kg in the dose escalation phase. In the first quarter of 2021, we were notified that the physician sponsoring this trial would be leaving MD Anderson. As a result, and as expected, MD Anderson has notified us that they will be closing this trial. Several additional institutions have expressed an interest in sponsoring similar research on WP1066 in brain tumors, so to help ensure the potential continuation of this important research, regardless of the sponsoring institution, we have requested the right to reference the MD Anderson IND, as provided for under our Clinical Trial Agreement with MD Anderson, in our own IND. We are working to continue this research in additional physician-sponsored trials in 2022.

Three patients have now been treated in the second cohort of the Phase 1 dose escalation portion of physician-sponsored clinical trial at Emory University for the treatment of pediatric brain tumors with WP1066 at the dose level of 8mg/kg and this dose has been deemed to be safe. Two more patients will be treated at this dose level, and one of these patients has now begun treatment. Emory University is amending its protocol to allow dosing at 16 mg/kg after these two additional patients have been dosed.

WP1122

Based on previously announced data demonstrating the antiviral potential of our lead antimetabolite molecule, WP1122, we intend to test the drug candidate for the potential treatment of COVID-19. Although we have previously disclosed that antiviral clinical trials in the U.S. will be dependent upon demonstrating efficacy in an appropriate COVID-19 animal model, we recently engaged in discussions with the Medicines and Healthcare Products Regulatory Agency (MHRA) in the United Kingdom (U.K.) regarding the potential for beginning clinical trials of WP1122 without the need for additional preclinical animal efficacy models. Based on our initial discussions with the MHRA, we believe that a COVID-19 animal model will not be required in order to receive approval for a clinical trial application (CTA) for a Phase 1 clinical trial beginning with healthy volunteers in that country, although no final determination has been made by the MHRA. During the second quarter these discussions continued. Based on their feedback, in August 2021 we submitted a CTA for a Phase 1 clinical trial of WP1122 in the U.K.

The preclinical work to evaluate molecules within the WP1122 portfolio of antimetabolites (which include molecules capable of inhibiting glycolysis and altering glycosylation) for viral indications is mostly similar to the preclinical work we originally planned as part of developing WP1122 for cancer indications. Accordingly, we believe the preclinical work we have completed for WP1122 will also support an IND application or its equivalent in other countries for cancer-related clinical trials. We continue to plan to submit such an IND in the U.S. in 2021.

COVID-19 Impact on Clinical Trials

The spread of COVID-19 has caused significant volatility in U.S. and international markets, including Poland, where we conduct some of our clinical trials, and Italy, where our Annamycin drug supply is produced. There has been limited interruption of our drug supply, and most Polish clinics where we are conducting trials are limiting access for monitoring activities, which could delay our ability to collect data and authorize new patient recruitment. Additionally, we believe COVID-19 has materially slowed the ability of approved sites to recruit patients for our trials. Although we have seen recent recruitment increase, this could worsen or be alleviated at any time. Furthermore, there is significant uncertainty around the breadth and duration of business disruptions related to COVID-19, as well as its impact on the U.S. and international economies and, as such, we are unable to determine if it will have a material impact to our operations. Recently, we continue to experience a limited increase in activity with regard to recruitment of new patients in Poland. Additionally, we believe that the potential for impact to our supply chain due to COVID-19 has been reduced as vaccine production normalizes throughout the industry. Considering current worldwide trends with respect to COVID-19, we cannot determine whether COVID-19 will materially impact recruitment for current or future trials.

Licensing

We are currently in discussions with MD Anderson regarding amendments to existing licenses and new licenses related to Annamycin and WP1122. In the second quarter, we amended the WP1122 license to allow for an additional six-month extension to file a U.S. IND for the application of WP1122 until February 2022 on the condition that we file a similar application in another country. On August 3, 2021, we filed a CTA for the application of WP1122 in the United Kingdom, which filing satisfied the requirements under the license agreement. In addition, we intend to file a U.S. IND for the application of WP1122 by February 2022. We retain the right to further extend these dates within the amended agreement.

Recent Business Developments

Below are recent business developments.

Annamycin

Approval to Extend Dose Escalation in Phase 1/2 European Clinical Trial Evaluating Annamycin for the Treatment of Acute Myeloid Leukemia

On July 13, 2021, we announced that we had received approval from the Bioethics Committee of the Medical University of Karol Marcinkiewicz in Poznań (Ethics Committee) as well as an allowance from the Polish Department of Registration of Medicinal Products (URPL) for a protocol amendment for our Phase 1/2 evaluating Annamycin for the treatment of subjects with acute myeloid leukemia (AML) that is refractory to or relapsed after induction therapy.

First Subject Enrolled and Dosed in Phase 1b/2 Clinical Trial of Annamycin for the Treatment of Sarcoma Lung Metastases

On June 21, 2021, we announced that we commenced enrollment and dosed the first subject in our U.S. Phase 1b/2 clinical trial evaluating Annamycin for the treatment of STS lung metastases.

Receives Clearance to Commence Phase 1b/2 Clinical Trial of Annamycin for the Treatment of Sarcoma Lung Metastases

On May 25, 2021, we announced that we received clearance to initiate our Phase 1b/2 clinical trial evaluating Annamycin for the treatment of STS lung metastases. We announced that the first of several planned clinical sites was open and we expected to begin patient enrollment.

FDA Approval of Fast Track Designation for Annamycin in the Treatment of Sarcoma Lung Metastases

On March 30, 2021, we announced that the FDA had approved our request for Fast Track Designation for our drug, Annamycin, for the treatment of STS lung metastases.

WP1066

Awarded New Rare Pediatric Disease Designation from U.S. FDA for WP1066 for the Treatment of Ependymoma

On April 14, 2021, we announced that the FDA had granted Rare Pediatric Disease Designation (RPD) to our p-STAT3 inhibitor, WP1066, for the treatment of ependymoma.

WP1122

IQVIA to Manage Potential COVID-19 Clinical Trial

On April 6, 2021, we announced the engagement of IQVIA Biotech, a contract research organization (CRO) to manage our efforts to begin potential clinical trials of WP1122 for the treatment of COVID-19.

Corporate

Inclusion in the Russell 2000 Index

On June 15, 2021, we announced that as part of the annual reconstitution of the Russell stock indexes, we were selected to be added to the Russell 2000 Index effective after the close of the U.S. equity markets on June 25, 2021.

Results of Operations

The following table sets forth, for the periods indicated, data derived from our statement of operations (in thousands) and such changes in the periods are discussed below in approximate amounts:

Moleculin Biotech, Inc.
Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Revenues	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	3,039	3,329	7,145	6,535
General and administrative	2,434	1,653	4,373	3,463
Depreciation and amortization	44	52	88	98
Total operating expenses	5,517	5,034	11,606	10,096
Loss from operations	(5,517)	(5,034)	(11,606)	(10,096)
Other income (loss):				
Gain (loss) from change in fair value of warrant liability	1,173	(5,099)	2,750	(1,254)
Other income, net	8	17	18	22
Interest income, net	92	4	149	7
Net loss	$ (4,244)	$ (10,112)	$ (8,689)	$ (11,321)

Three Months Ended June 30, 2021 Compared to Three Months Ended June 30, 2020

Research and Development Expense. Research and development (R&D) expense was $3.0 million and $3.3 million for the three months ended June 30, 2021 and 2020, respectively. The decrease of $0.3 million is mainly related to the timing of costs incurred in 2020 of producing additional drug product for Annamycin clinical trials.

General and Administrative Expense. General and administrative expense was $2.4 million and $1.7 million for the three months ended June 30, 2021 and 2020, respectively. The increase of $0.7 million is mainly related to an increase in consulting and advisory fees and an increase in our corporate insurance.

Gain from Change in Fair Value of Warrant Liability. We recorded a net gain of $1.2 million in the second quarter of 2021 as compared to a net loss of $5.1 million in the second quarter of 2020, for the change in fair value on revaluation of our warrant liability associated with our warrants issued in conjunction with our stock offerings. We are required to revalue our liability-classified warrants at the time of each warrant exercise, if applicable, and 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 calculated the fair value of the warrants outstanding using the Black-Scholes model. A gain results principally from a decline in our share price during the period and a loss results principally from an increase in our share price.

Six Months Ended June 30, 2021 Compared to Six Months Ended June 30, 2020

Research and Development Expense. Research and development (R&D) expense was $7.1 million and $6.5 million for the six months ended June 30, 2021 and 2020, respectively. The increase of $0.6 million is mainly related to increased clinical trial activity as described above, and costs related to manufacturing of additional drug product.

General and Administrative Expense. General and administrative expense was $4.4 million and $3.5 million for the six months ended June 30, 2021 and 2020, respectively. The increase of $0.9 million is mainly related to an increase in consulting and advisory fees and an increase in our corporate insurance.

Gain from Change in Fair Value of Warrant Liability. We recorded a net gain of $2.8 million in the second quarter of 2021 as compared to a net loss of $1.3 million in the second quarter of 2020, for the change in fair value on revaluation of our warrant liability associated with our warrants issued in conjunction with our stock offerings. We are required to revalue our liability-classified warrants at the time of each warrant exercise, if applicable, and 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 calculated the fair value of the warrants outstanding using the Black-Scholes model. A gain results principally from a decline in our share price during the period and a loss results principally from an increase in our share price.

Liquidity and Capital Resources

The following table sets forth our primary sources and uses of cash for the period indicated (in thousands):

	Six Months Ended June 30,	
	2021	**2020**
Net cash used in operating activities	$ (10,405)	$ (9,275)
Net cash used in investing activities	—	(20)
Net cash provided by financing activities	74,748	15,303
Effect of exchange rate changes on cash and cash equivalents	(10)	(9)
Net increase in cash and cash equivalents	$ 64,333	$ 5,999

As of June 30, 2021, there was $0.3 million of cash on hand in a bank account in Australia and we know of no related limitations impacting our liquidity in Australia.

Cash used in operating activities

Cash used in operations was $10.4 million for the six months ended June 30, 2021. This $1.1 million increase over the prior year period of $9.3 million was primarily due to: 1) payments for developing, manufacturing and testing drug product as we prepared for clinical trials; 2) an increase in R&D contractor headcount and associated costs; 3) an increase in license fees and 4) increases in consulting and advisory fees as well as an increase in our corporate insurance. These are all a reflection of the ongoing clinical and pre-clinical activity and the associated increase in general and administrative support for our three core drug technologies.

Cash provided in financing activities

In June 2021, we entered into an At Market Issuance Sales Agreement (2021 ATM Agreement) with Oppenheimer & Co. Inc. Pursuant to the terms of the 2021 ATM Agreement, we may offer and sell, from time to time through Oppenheimer shares of our common stock with an aggregate sales price of up to $50.0 million. As of the date of this report, there have been no issuances under the 2021 ATM Agreement.

In June 2021, we entered into a Purchase Agreement with Lincoln Park Capital Fund. Pursuant to the terms of the Purchase Agreement, Lincoln Park agreed to purchase from us up to $20.0 million of common stock (subject to certain limitations) from time to time during the term of the Purchase Agreement. Pursuant to the terms of the Purchase Agreement, at the time we signed the Purchase Agreement, we issued 107,788 shares of common stock to Lincoln Park as an initial fee for its commitment to purchase shares of our common stock under the Purchase Agreement, and have agreed to issue Lincoln Park up to an additional 53,893 shares of common stock as commitment shares pro-rata when and if Lincoln Park purchases (at our discretion) the $20.0 million aggregate commitment.

In February 2021, we completed an underwritten public offering of an aggregate of 14,273,684 shares of common stock at a public offering price of $4.75 per share. We granted the underwriters a 30-day option to purchase up to an additional 2,141,052 shares of common stock offered in the public offering. The offering closed on February 5, 2021 and gross proceeds of the offering were approximately $67.8 million, prior to deducting the underwriting discount and other offering expenses. On February 10, 2021, the underwriters of the public offering exercised in full their option to purchase an additional 2,141,052 shares of common stock at the public offering price of $4.75 per share, bringing total gross proceeds to approximately $78.0 million before underwriting discount.

In January 2021 we issued 468,684 shares for gross proceeds of $2.9 million using our 2020 ATM Agreement with Oppenheimer & Co., Inc. We terminated the 2020 ATM Agreement on February 2, 2021. Additionally, during the first quarter of 2021, 10,000 shares were issued due to the exercise of warrants related to past public offerings. Gross proceeds received due to these exercises approximated $63,000.

In February 2020, we entered into subscription agreements with institutional investors to purchase 1,250,000 shares of our common stock and warrants to purchase 937,501 shares of common stock at a combined public offering price of $4.80 per share and related warrant resulting in gross proceeds of $6.0 million. Each warrant has an exercise price of $6.30 per share and were exercisable six months from the date of issuance and will expire five years from the date they were first exercisable.

In April 2020, we issued 1,195,162 shares of common stock at an average price of $8.65 per share pursuant to the 2020 ATM Agreement. We received total proceeds of $10.3 million, prior to deducting transaction expenses. Additionally, during the second quarter of 2020, 750 shares were issued due to the exercise of warrants related to past public offerings. Gross proceeds received due to these exercises approximated $5,000.

We believe that our existing cash and cash equivalents as of June 30, 2021 will be sufficient to meet our projected operating requirements, which include a forecasted increase over our current R&D rate of expenditures, into the year 2024. Such projections are subject to changes in our internally funded preclinical and clinical activities, including unplanned preclinical and clinical activity. We anticipate incurring operating losses for the next several years as we support the preclinical and clinical activities necessary to prepare our drug candidates for successful out licensing, including our efforts to expand our technologies. These factors raise uncertainties about our ability to fund operations in future years. If we need to raise additional capital in order to continue to execute our business plan, there is no assurance that additional financing will be available when needed or that we will be able to obtain financing on terms acceptable to us. A failure to raise sufficient capital could adversely impact our ability to achieve our intended business objectives and meet our financial obligations as they become due and payable.

Critical Accounting Policies and Significant Judgments and Estimates

There have been no material changes to our critical accounting policies and use of estimates from those disclosed in our Form 10-K for the year ended December 31, 2020. For a discussion of our critical accounting policies and use of estimates, refer to Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies and Significant Estimates in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2020.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISKS

Not applicable 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 Securities Exchange Act of 1934, as amended, 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), who is our principal executive officer, and Chief Financial Officer (CFO), who is our principal financial and accounting officer, 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 effective as of June 30, 2021.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15-d-15(f) under the Exchange Act) during the six months ended June 30, 2021 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. Our employees are working remotely due to the COVID-19 pandemic, but we do not believe that our adjustments to how we work have materially impacted our internal controls over financial reporting. We continue to monitor and assess the potential impact of the COVID-19 pandemic on our internal controls and strive to minimize the impact on our internal control design and operating effectiveness.

PART II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

None.

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, 2020, and in Part II, Item 1A in our prior quarterly reports on Form 10-Q filed during this fiscal year. 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, 2020 and in our prior quarterly reports on Form 10-Q filed during this fiscal year, each as filed with the SEC.

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

The Company entered into an agreement with an investor relations consultant and as part of that agreement 5,000 shares of common stock will be issued as they vest in the aggregate between April 1, 2021 and December 31, 2021. Additionally, the Company entered to a clinical trial advisory agreement on April 29, 2021 with an advisory firm, pursuant to which the Company issued a warrant to purchase 71,500 shares of common stock which will vest equally and quarterly over five years, or earlier upon a change of control, and only while services are being rendered. The foregoing securities were issued pursuant to Section 4(a)(2) of the Securities Act.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 5. OTHER INFORMATION.

None.

ITEM 6. EXHIBITS

Exhibit No.	Description
10.1	At Market Issuance Sales Agreement, dated June 25, 2021, by and among the Company and Oppenheimer & Co. Inc. (incorporated by reference to exhibit 1.1 of the Company's Form 8-K filed June 25, 2021)
10.2	Purchase Agreement dated June 25, 2021 by and between Moleculin Biotech, Inc. and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.1 of the Company's Form 8-K filed June 25, 2021)
10.3	Registration Rights Agreement dated June 25, 2021 by and between Moleculin Biotech, Inc. and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.2 of the Company's Form 8-K filed June 25, 2021)
10.4* +	Amendment No. 4 to Patent and Technology License Agreement, dated June 15, 2021, between the Parties dated April 2, 2012, as previously amended by Amendment No. 1 dated October 19, 2015 and Amendment No. 2 dated November 1, 2018, and Amendment No. 3 dated May 20, 2020
10.5*	Form of Indemnification Agreement between Moleculin Biotech, Inc. and its officers and directors
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 Accounting and 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*	Inline XBRL Instance Document (the Instance Document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Filed herewith.
+ Pursuant to Item 601(b)(10)(iv) of Regulation S-K promulgated by the SEC, certain portions of this exhibit have been redacted. The Company hereby agrees to furnish supplementally to the SEC, upon its request, an unredacted copy of this exhibit.

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: August 11, 2021

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

Date: August 11, 2021

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

Exhibit 10.4

AMENDMENT NO. 4 TO
PATENT AND TECHNOLOGY LICENSE AGREEMENT

This Amendment No. 4, effective as of the date fully executed by both Parties ("Amendment No. 4 Effective Date"), to that certain Patent and Technology License Agreement between the Parties dated April 2, 2012, as previously amended by Amendment No.1 dated October 19, 2015 and Amendment No. 2 dated November 1, 2018, and Amendment No. 3 dated May 20, 2020 (as so amended, the "Original License"), is made by and between the Board of Regents ("Board") of The University of Texas System ("System"), an agency of the State of Texas, on behalf of The University of Texas M. D. Anderson Cancer Center (hereinafter "UTMDACC"), a member institution of System, and Moleculin Biotech, Inc. (hereinafter "Licensee"), a Delaware corporation having a principal place of business located at 5300 Memorial Dr., Suite 950, Houston, Texas 77007. Board, on behalf of UTMDACC, and Licensee may herein be referred to collectively as the "Parties."

RECITALS

A. Moleculin Biotech, Inc. is the assignee of the Original License pursuant to that certain Assignment and Assumption Agreement dated November 17, 2015. Accordingly, Moleculin Biotech, Inc. may be referenced herein as the "Licensee."

B. Board and Licensee desire to amend the Original License.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the sufficiency of which is hereby acknowledged, the Parties hereby agree to the following:

AMENDED TERMS

1. Subsections (b) and (c) of Section 13.2 of the Original License shall be deleted in their entirety and replaced with the following:

(b) within nine (9) months after the Amendment No. 3 Effective Date, file an INVESTIGATIONAL NEW DRUG APPLICATION with the FDA for a PHASE I STUDY for a LICENSED PRODUCT;

(c) within two and one-half (2.5) years after the Amendment No. 3 Effective Date, commence a PHASE I STUDY for a LICENSED PRODUCT; and

(d) within four and one-half (4.5) years after the Amendment No. 3 Effective Date, commence a PHASE II STUDY for a LICENSED PRODUCT.

As used in Subsections 13.2(c) and 13.2(d) above, a PHASE I STUDY, or a PHASE II STUDY, shall be deemed to commence upon the administration of a LICENSED PRODUCT or placebo to the first patient enrolled in the PHASE I STUDY, or PHASE II STUDY, respectively.

Licensee may extend any of the deadlines for achieving the milestones set forth in Subsections (b) – (d) above, up to a maximum of three (3) times, upon written notice to UTMDACC requesting an extension and full payment of the Extension Fee, as defined below, prior to expiration of the respective deadline. For purposes of this Agreement, the term "Extension Fee" shall mean the amount set forth in Table 13.2 below for each deadline extension request. Upon payment of each Extension Fee with respect to any of such milestones, an additional six months will be added to the time for completion of such milestone and all other as yet unmet milestones in Subsections (b) – (d) above. It is understood and agreed that time is of the essence with respect to payment of the Extension Fee, and failure to timely pay an Extension Fee shall not be subject to any cure period. In no event shall any of the deadlines in Subsections (b) – (d) above be subject to more than three (3) six month extensions.

Table 13.2

Extension	Extension Fee
First six (6) month extension	$[***]
Second six (6) month extension	$[***]
Third six (6) month extension	$[***]

CERTAIN IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. THE REDACTED TERMS HAVE BEEN MARKED WITH THREE ASTERISKS [***]

The parties agree that Licensee has requested and paid the Extension Fee for a first extension. Notwithstanding the preceding paragraph of this section 13.2, the Parties agree that if Moleculin files the equivalent of an INVESTIGATIONAL NEW DRUG APPLICATION for a PHASE I STUDY for a LICENSED PRODUCT in the United Kingdom, India, Australia, or Brazil prior to August 20, 2021, then the Extension Fee for a second six month extension in order to meet the requirements of Section 13.2(b) shall be waived; *provided, however*, Moleculin must still request such extension even though no payment is required and such request will be applied to the three (3) allotted requests. For clarity, if Moleculin requires the second six month extension in order to meet the requirement of Section 13.2(b), but has not yet filed the equivalent of an INVESTIGATIONAL NEW DRUG APPLICATION for a PHASE I STUDY for a LICENSED PRODUCT in at least one (1) of the above named jurisdictions prior to prior to August 20, 2021, then a second Extension Fee shall be required.

2. Licensee shall be solely responsible for timely submission of this Amendment No. 4, or any portions thereof, to any securities exchange or any governmental or quasi- governmental entity if required by applicable law or regulation.

3. This Amendment No. 4 shall be construed and enforced in accordance with the laws of the United States of America and the State of Texas, without regard to its conflict of law provisions.

4. The Parties acknowledge and agree that, except as set forth in this Amendment No. 4, the terms and conditions of the Original License shall remain in full force and effect. Moreover, this Amendment No. 4 shall not modify or supersede any other agreements between the Parties.

IN WITNESS WHEREOF, the Parties hereto have caused their duly authorized representatives to execute this Amendment No. 4.

BOARD OF REGENTS OF THE UNIVERSITY OF TEXAS System, on behalf of THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER	MOLECULIN BIOTECH, INC.
By [***]_____	By: /s/ Jonathan P. Foster_____
Printed Name: [***]_____	Printed Name: Jonathan P. Foster
Title: [***]_____	Title: EVP / CFO
Date: 6/15/2021	Date: 5/31/2021

Approved as to Content:

By [***]_____
[***], J.D., Ph.D.
Senior Vice President
Research Administration & Industry Relations
M. D. Anderson Cancer Center

Date: 6/15/2021

CERTAIN IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. THE REDACTED TERMS HAVE BEEN MARKED WITH THREE ASTERISKS [***]

Exhibit 10.5

INDEMNIFICATION AND ADVANCEMENT AGREEMENT

This Indemnification Agreement (this "Agreement") is made as of _____, 2021, by and between Moleculin Biotech, Inc., a Delaware corporation (the "Company"), and _____ ("Indemnitee"). Capitalized terms used but not otherwise defined herein have the meanings set forth in Section 12.

RECITALS

WHEREAS, in the current market and legal environment, qualified persons have become more reluctant to serve corporations as directors and/or officers unless they are provided with adequate protection through insurance or adequate indemnification against significant risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

WHEREAS, directors and/or officers and other persons in service to business enterprises are being increasingly subjected to expensive and time consuming litigation;

WHEREAS, the uncertainties relating to liability insurance and to indemnification have increased the difficulty of retaining existing and attracting future qualified persons to serve on the board and to serve the company in other capacities;

WHEREAS, the Board of Directors of the Company (the "Board") has determined that, in order to retain current and attract future qualified individuals to serve on the Board or to act as executive officers of the Company, the Company will attempt to maintain on an ongoing basis, at its sole expense, liability insurance to protect persons serving the Company and its subsidiaries from certain liabilities, even if, given current market conditions and trends, such insurance may be available to it in the future only at higher premiums and with more exclusions;

WHEREAS, the Board has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Company's stockholders and that the Company should act to assure such persons that there will be increased certainty of such protection in the future;

WHEREAS, the Company desires and intends hereby to provide certain rights to indemnification and advancement of expenses against certain liabilities asserted against or incurred by Indemnitee as allowed by the General Corporation Law of the State of Delaware (the "DGCL") (including section 145 of the DGCL), and further desires and intends that the terms of indemnification and advancement of costs be reduced to written agreement; and

WHEREAS, this Agreement is a supplement to and in furtherance of the indemnification provisions of the Company's Certificate of Incorporation, as amended to date, and any resolutions adopted pursuant thereto, and except as specifically provided herein shall not be a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder or otherwise.

NOW THEREFORE, in consideration of the premises and the covenants contained herein and Indemnitee's agreement to provide services to the Company, the receipt and sufficiency of which are hereby acknowledged, the Company and Indemnitee do hereby covenant and agree as follows:

1. **Indemnification.**

(a) **Third-Party Proceedings.** To the fullest extent permitted by applicable law, the Company shall indemnify Indemnitee, if Indemnitee was, is or is threatened to be made, a party to or a participant (as a witness or otherwise) in any Proceeding (other than a Proceeding by or in the right of the Company to procure a judgment in the Company's favor, for which Indemnitee will be indemnified pursuant to Section 1(b)), against all reasonable Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee in connection with such Proceeding if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal Proceeding, had no reasonable cause to believe Indemnitee's conduct was unlawful.

(b) **Proceedings By or in the Right of the Company.** To the fullest extent permitted by applicable law, the Company shall indemnify Indemnitee, if Indemnitee was, is or is threatened to be made a party to or a participant (as a witness or otherwise) in any Proceeding by or in the right of the Company to procure a judgment in the Company's favor, against all Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee in connection with such Proceeding if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, except that no indemnification shall be made in respect of any claim, issue or matter as to which Indemnitee shall have been finally adjudicated by court order or judgment to be liable to the Company unless and only to the extent that the Court of Chancery or the court in which such Proceeding is or was pending shall determine upon application that, in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

(c) **Success on the Merits.** To the fullest extent permitted by applicable law and to the extent that Indemnitee has been successful on the merits or otherwise in defense of any Proceeding referred to in Section 1(a) or Section 1(b) or the defense of any claim, issue or matter therein, in whole or in part, the Company shall indemnify Indemnitee against all Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee in connection therewith. No standard of conduct determination shall be required. Without limiting the generality of the foregoing, if Indemnitee is successful on the merits or otherwise as to one or more but less than all claims, issues or matters in a Proceeding, the Company shall indemnify Indemnitee against all Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee in connection with such successfully resolved claims, issues or matters to the fullest extent permitted by applicable law. Without limiting the generality of the foregoing, Indemnitee shall be considered for the purposes hereof to have been wholly successful with respect to a Proceeding if such Proceeding is disposed of on the merits or otherwise (including a disposition without prejudice) without (i) the disposition being adverse to Indemnitee, (ii) an adjudication that Indemnitee was liable to the Company, (iii) a plea of guilty by Indemnitee, (iv) an adjudication that Indemnitee did not act in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, and (v) with respect to any criminal Proceeding, an adjudication that Indemnitee had reasonable cause to believe Indemnitee's conduct was unlawful.

(d) **Witness Expenses.** To the fullest extent permitted by applicable law and to the extent that Indemnitee is a witness or otherwise asked to participate in any Proceeding to which Indemnitee is not a party, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee in connection with such Proceeding.

(e) **Payment of Indemnification.** To the extent payments are required to be made hereunder, the Company shall pay to Indemnitee such amounts within ten (10) days after the receipt by the Company of Indemnitee's request.

2. **Additional Indemnity.** In addition to, and without regard to any limitations on, the indemnification provided for in Section 1, the Company shall and hereby does indemnify and hold harmless Indemnitee against all Expenses, judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee or on Indemnitee's behalf if Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding (including a Proceeding by or in the right of the Company), including all liability arising out of the negligence or active or passive wrongdoing of Indemnitee. The only limitation that shall exist upon the Company's obligations pursuant to this Agreement shall be that the Company shall not be obligated to make any payment to Indemnitee that is finally determined (under the procedures, and subject to the presumptions, set forth in Sections 3 and 4) to be unlawful.

3. **Advancement of Expenses and Indemnification Procedure.**

(a) **Advancement of Expenses.** The Company shall advance all Expenses actually and reasonably paid or incurred by Indemnitee in connection with a Proceeding within ten (10) days after receipt by the Company of a statement requesting such advances from time to time, whether prior to or after final disposition of any Proceeding. Indemnitee's right to such advancement is not subject to the satisfaction of any standard of conduct. Such advances shall be unsecured and interest free and shall be made without regard to Indemnitee's ability to repay the Expenses and without regard to Indemnitee's ultimate entitlement to indemnification under the other provisions of this Agreement. In connection with any request for Expense advances, Indemnitee shall not be required to provide any documentation or information to the extent that the provision thereof would undermine or otherwise jeopardize attorney-client privilege. Indemnitee shall be entitled to continue to receive advancement of Expenses pursuant to this Section 3(a) unless and until the matter of Indemnitee's entitlement to indemnification hereunder has been finally adjudicated by court order or judgment from which no further right of appeal exists. Indemnitee hereby undertakes to repay such amounts advanced only if, and to the extent that, it ultimately is determined that Indemnitee is not entitled to be indemnified by the Company under the other provisions of this Agreement. Indemnitee shall qualify for advances upon the execution and delivery of this Agreement, which shall constitute the requisite undertaking with respect to repayment of advances made hereunder and no other form of undertaking shall be required to qualify for advances made hereunder other than the execution of this Agreement. Notwithstanding any of the foregoing or anything else in this Agreement or any other document to the contrary, except to the extent required by legal service or court order, any action by an Indemnitee, as determined by a non-appealable decision of a court of competent jurisdiction, that assists a third party plaintiff or proposed third party plaintiff in formulating or prosecuting a claim against the Company, or any director or officer or former director and officer of the Company for actions or inactions taken with respect to the Company, will vitiate the advancement of expenses obligation contemplated hereunder ab initio; provided, however, that such vitiation shall not be applicable if Indemnitee's action is in connection with a whistleblower or similar claim or a claim for indemnification or advancement of expenses.

(b) **Notice and Cooperation by Indemnitee.** Indemnitee shall promptly notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter for which indemnification will or could be sought under this Agreement. Such notice to the Company shall include a description of the nature of, and facts underlying, the Proceeding, shall be directed to the Chief Executive Officer of the Company and shall be given in accordance with the provisions of Section 13(d). In addition, Indemnitee shall give the Company such additional information and cooperation as the Company or its counsel may reasonably request, provided that such documentation and information may exclude any privileged or similarly protected information. Indemnitee's failure to so notify, provide information and otherwise cooperate with the Company shall not relieve the Company of any obligation which it may have to Indemnitee under this Agreement, except to the extent that the Company is adversely affected by such failure.

(c) **Determination of Entitlement.** Notwithstanding any other provision in this Agreement to the contrary, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of a Proceeding. Subject to the foregoing, promptly after receipt of a statement requesting payment with respect to the indemnification rights set forth in Section 1, to the extent required by applicable law, the Company shall take the steps necessary to authorize such payment in the manner set forth in Section 145 of the DGCL. If the determination of entitlement to indemnification is to be made by Independent Counsel (as defined below) pursuant to Section 145(d)(3) of the DGCL, the Independent Counsel shall be selected by the Board and written notice of such selection shall be given to Indemnitee. Indemnitee may, within ten (10) days after such written notice of selection shall have been given, deliver to the Company a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 12, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If a written objection is made and substantiated, the Independent Counsel selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court has determined that such objection is without merit. If, within twenty (20) days after submission by Indemnitee of a written request for indemnification pursuant to Section 3, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition the Delaware Court or other court of competent jurisdiction for resolution of any objection which shall have been made by Indemnitee to the Company's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel. The Company shall pay any and all reasonable fees and expenses of Independent Counsel incurred by such Independent Counsel in connection with acting pursuant to this Agreement, and the Company shall pay all reasonable fees and expenses incident to the procedures of this Agreement, regardless of the manner in which such Independent Counsel was selected or appointed. The Company shall pay any claims made under this Agreement, under any statute, or under any provision of the Company's Certificate of Incorporation or Bylaws providing for indemnification or advancement of Expenses, within ten (10) days after a written request for payment thereof has first been received by the Company, and if such claim is not paid in full within such ten (10) day-period, Indemnitee may, but need not, at any time thereafter bring an action against the Company in the Delaware Court of Chancery to recover the unpaid amount of the claim and Indemnitee shall also be entitled to be paid for all Expenses actually and reasonably incurred by Indemnitee in connection with bringing such action. It shall be a defense to any such action (other than an action brought to enforce a claim for advancement of Expenses under Section 3(a)) that Indemnitee has not met the standards of conduct which make it permissible under applicable law for the Company to advance expenses to Indemnitee or to indemnify Indemnitee for the amount claimed. In making a determination with respect to entitlement to indemnification (but not advancement) hereunder, the person or persons or entity making such determination shall presume that Indemnitee is entitled to indemnification under this Agreement and the Company shall have the burden of proof to overcome that presumption with clear and convincing evidence to the contrary. The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in or not opposed to the best interests of the Company, or, in the case of a criminal Proceeding, that Indemnitee had reasonable cause to believe that Indemnitee's conduct was unlawful. In addition, it is the parties' intention that if the Company contests Indemnitee's right to indemnification, the question of Indemnitee's right to indemnification shall be for the court to decide, and neither the failure of the Company (including its Board, any committee or subgroup of the Board, Independent Counsel or its stockholders) to have made a determination that indemnification of Indemnitee is proper in the circumstances because Indemnitee has met the applicable standard of conduct required by applicable law, nor an actual determination by the Company (including its Board, any committee or subgroup of the Board, Independent Counsel or its stockholders) that Indemnitee has not met such applicable standard of conduct, shall create a presumption that Indemnitee has or has not met the applicable standard of conduct.

(d) **Payment Directions.** To the extent payments are required to be made hereunder, the Company shall, in accordance with Indemnitee's request (but without duplication), (i) pay such Expenses on behalf of Indemnitee, (ii) advance to Indemnitee funds in an amount sufficient to pay such Expenses, or (iii) reimburse Indemnitee for such Expenses.

(e) **Notice to Insurers.** If, at the time of the receipt of a notice of a claim pursuant to Section 3(b), the Company has director and officer liability insurance in effect, the Company shall give prompt notice of the commencement of such Proceeding to the insurers in accordance with the procedures set forth in the respective policies. The Company shall thereafter take all reasonably necessary action to cause such insurers to pay, on behalf of Indemnitee, all amounts payable as a result of such Proceeding in accordance with the terms of such policies.

(f) **Defense of Claim and Selection of Counsel.** In the event the Company shall be obligated under Section 3(a) to advance Expenses with respect to any Proceeding, the Company, if appropriate, shall be entitled to assume the defense of such Proceeding, with counsel reasonably acceptable to Indemnitee, upon the delivery to Indemnitee of written notice of its election so to do. After delivery of such notice, approval of such counsel by Indemnitee and the retention of such counsel by the Company, the Company will not be liable to Indemnitee under this Agreement for any fees of counsel subsequently incurred by Indemnitee with respect to the same Proceeding, provided that (i) Indemnitee shall have the right to employ counsel in any such Proceeding at Indemnitee's expense; and (ii) if (A) the employment of counsel by Indemnitee has been previously authorized by the Company, (B) appointed counsel shall have concluded that there may be a conflict of interest between the Company and Indemnitee in the conduct of any such defense that precludes such counsel's representation of Indemnitee, and the Company shall have failed to appoint alternative counsel within thirty days' of being notified in writing that appointed counsel shall have concluded that there may be a conflict of interest between the Company and Indemnitee in the conduct of any such defense that precludes such counsel's representation of Indemnitee or (C) the Company shall not, in fact, have employed counsel to assume the defense of such Proceeding, then the fees and expenses of Indemnitee's counsel shall be at the expense of the Company. In addition, if there exists a potential, but not an actual conflict of interest between the Company and Indemnitee, the actual and reasonable legal fees and expenses incurred by Indemnitee for separate counsel (approved in advance by the Company) retained by Indemnitee to monitor the Proceeding (so that such counsel may assume Indemnitee's defense if the conflict of interest between the Company and Indemnitee becomes an actual conflict of interest) shall be deemed to be Expenses that are subject to indemnification hereunder. The existence of an actual or potential conflict of interest, and whether such conflict may be waived, shall be determined pursuant to the rules of attorney professional conduct and applicable law. The Company shall not be required to obtain the consent of Indemnitee for the settlement of any Proceeding the Company has undertaken to defend if the Company assumes full and sole responsibility for each such settlement; provided, however, that the Company shall be required to obtain Indemnitee's prior written approval, which shall not be unreasonably withheld, before entering into any settlement which (1) does not grant Indemnitee a complete release of liability, (2) would impose any penalty or limitation on Indemnitee, or (3) would admit any liability or misconduct by Indemnitee.

(g) **Further Instruction.** If the person, persons or entity empowered or selected to determine whether Indemnitee is entitled to indemnification shall not have made a determination within sixty (60) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall be deemed to have been made and Indemnitee shall be entitled to such indemnification absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law; provided, however, that such 60-day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making such determination with respect to entitlement to indemnification in good faith requires such additional time to obtain or evaluate documentation and/or information relating thereto; and provided, further, that the foregoing provisions of this Section 3(g) shall not apply if the determination of entitlement to indemnification is to be made by the stockholders pursuant to Section 145(d)(4) of the DGCL and if (A) within fifteen (15) days after receipt by the Company of the request for such determination, the Board or the disinterested directors, if appropriate, resolve to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held within seventy-five (75) days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within fifteen (15) days after such receipt for the purpose of making such determination, such meeting is held for such purpose within sixty (60) days after having been so called and such determination is made thereat. Indemnitee shall reasonably cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any Independent Counsel, member of the Board or stockholder of the Company shall act reasonably and in good faith in making a determination regarding Indemnitee's entitlement to indemnification under this Agreement. Any costs or expenses (including attorneys' fees and disbursements) incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

4. **Remedies of Indemnitee**.

(a) In the event that (i) a determination is made pursuant to Section 3 that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 3, (iii) no determination of entitlement to indemnification is made pursuant to Section 3 within the applicable period of time set forth above after receipt by the Company of the request for indemnification, (iv) payment of indemnification is not made pursuant to this Agreement within ten (10) days after receipt by the Company of a written request therefor, (v) payment of indemnification is not made within ten (10) days after a determination has been made that Indemnitee is entitled to indemnification or such determination is deemed to have been made pursuant to Section 3 or (vi) the Company or any other person takes any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or Proceeding designed to deny, or to recover from, Indemnitee the benefits provided or intended to be provided hereunder, then, in each case, Indemnitee shall be entitled to an adjudication in an appropriate court of the State of Delaware, or in any other court of competent jurisdiction, of Indemnitee's entitlement to such indemnification. The Company shall not oppose Indemnitee's right to seek any such adjudication.

(b) In the event that a determination shall have been made pursuant to Section 3 that Indemnitee is not entitled to indemnification, any judicial proceeding commenced pursuant to this Section 4 shall be conducted in all respects as a de novo trial on the merits, and Indemnitee shall not be prejudiced by reason of the adverse determination under Section 3.

(c) If a determination shall have been made pursuant to Section 3 that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding commenced pursuant to this Section 4, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's misstatement not materially misleading in connection with the application for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) In the event that Indemnitee, pursuant to this Section 4, seeks a judicial adjudication of Indemnitee's rights under, or to recover damages for breach of, this Agreement, or to recover under any directors' and officers' liability insurance policies maintained by the Company, the Company shall pay on Indemnitee's behalf, in advance, any and all expenses (of the types described in the definition of Expenses in Section 12) actually and reasonably incurred by Indemnitee in such judicial adjudication, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of expenses or insurance recovery. The Company irrevocably authorizes Indemnitee from time to time to retain counsel of Indemnitee's choice, at the expense of the Company to the extent provided hereunder or under applicable law, to advise and represent Indemnitee in connection with any such judicial adjudication or recovery, including the initiation or defense of any litigation or other legal action, whether by or against the Company or any director, officer, stockholder or other person affiliated with the Company. Notwithstanding any existing or prior attorney-client relationship between the Company and such counsel, the Company irrevocably consents to Indemnitee's entering into an attorney-client relationship with such counsel, and in that connection the Company and Indemnitee agree that a confidential relationship shall exist between Indemnitee and such counsel.

(e) The Company shall be precluded from asserting in any judicial proceeding commenced pursuant to this Section 4 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement. The Company shall indemnify Indemnitee against any and all Expenses and, if requested by Indemnitee, shall (within ten (10) days after receipt by the Company of a written request therefor) advance, to the extent not prohibited by law, such expenses to Indemnitee, which are incurred by Indemnitee in connection with any action brought by Indemnitee for indemnification or advancement of Expenses from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of Expenses or insurance recovery, as the case may be.

(f) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification under this Agreement shall be required to be made prior to the final disposition of the Proceeding.

5. **Additional Indemnification Rights.**

(a) **Scope.** Notwithstanding any other provision of this Agreement, the Company shall indemnify Indemnitee to the fullest extent permitted by law, notwithstanding that such indemnification is not specifically authorized by the other provisions of this Agreement, the Company's Certificate of Incorporation, the Company's Bylaws, in each case, as may be then in effect, or by statute. In the event of any change, after the date of this Agreement, in any applicable law, statute, or rule which expands the right of a Delaware corporation to indemnify a member of its board of directors or an officer, such changes shall be deemed to be within the purview of Indemnitee's rights and the Company's obligations under this Agreement. In the event of any change in any applicable law, statute or rule which narrows the right of a Delaware corporation to indemnify a member of its board of directors or an officer, such changes, to the extent not otherwise required by such law, statute or rule to be applied to this Agreement shall have no effect on this Agreement or the parties' rights and obligations hereunder. The Company shall not adopt any amendment to, or otherwise repeal or alter, any of the Certificate of Incorporation, the Bylaws or other constituent documents containing indemnification rights to the extent such action would have the effect of denying, diminishing or encumbering Indemnitee's right to indemnification under this Agreement or any other indemnity rights. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) **Nonexclusivity.** The indemnification provided by this Agreement shall not be deemed exclusive of any rights to which Indemnitee may be entitled under the Company's Certificate of Incorporation, its Bylaws, any agreement, any vote of stockholders or disinterested members of the Board, the DGCL, or otherwise, both as to action in Indemnitee's official capacity and as to action in another capacity while holding such office.

(c) **Interest on Unpaid Amounts.** If any payment to be made by the Company to Indemnitee hereunder is delayed by more than thirty (30) days from the date the duly prepared request for such payment is received by the Company, interest shall be paid by the Company to Indemnitee at the legal rate under Delaware law for amounts which the Company indemnifies or is obligated to indemnify for the period commencing with the date on which Indemnitee actually incurs such Expense or pays such judgment, fine or amount in settlement and ending with the date on which such payment is made to Indemnitee by the Company.

(d) **Insurance.** For the duration of Indemnitee's service as a director or officer of the Company, and thereafter for so long as Indemnitee shall be subject to any pending claim relating to an indemnifiable event hereunder, the Company shall use commercially reasonable efforts (taking into account the scope and amount of coverage available relative to the cost thereof) to continue to maintain in effect policies of directors' and officers' liability insurance providing coverage that is at least substantially comparable in scope and amount to that provided by the Company's current policies of directors' and officers' liability insurance. In all policies of directors' and officers' liability insurance maintained by the Company, Indemnitee shall be named as an insured in such a manner as to provide Indemnitee the same rights and benefits as are provided to the most favorably insured of the Company's directors by such policy. Upon request, the Company shall provide to Indemnitee copies of all directors' and officers' liability insurance applications, binders, policies, declarations, endorsements and other related materials.

6. **Partial Indemnification.** If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of the Expenses, judgments, fines or amounts paid in settlement, actually and reasonably incurred in connection with a Proceeding, but not, however, for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion of such Expenses, judgments, fines and amounts paid in settlement to which Indemnitee is entitled.

7. **Severability.** Nothing in this Agreement is intended to require or shall be construed as requiring the Company to do or fail to do any act in violation of applicable law. The Company's inability, pursuant to court order, to perform its obligations under this Agreement shall not constitute a breach of this Agreement. If this Agreement or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Company shall nevertheless indemnify Indemnitee to the full extent permitted by any applicable portion of this Agreement that shall not have been invalidated, and the balance of this Agreement not so invalidated shall be enforceable in accordance with its terms.

8. **Exclusions.** Any other provision herein to the contrary notwithstanding, the Company shall not be obligated pursuant to the terms of this Agreement:

(a) **Claims Initiated or Assisted by Indemnitee.** To indemnify or advance Expenses to Indemnitee with respect to Proceedings initiated or brought voluntarily by Indemnitee, except with respect to Proceedings (i) the initiation of which was consented to by the Board or (ii) brought to establish, enforce or interpret a right to indemnification under this Agreement or any other statute or law or otherwise as required under Section 145 of the DGCL, provided, that, in each case, such indemnification or advancement of Expenses may be provided by the Company in specific cases if the Board finds it to be appropriate and in the Company's interest; provided, further, however, that, notwithstanding the foregoing, the Company shall be obligated to indemnify Indemnitee and advance Expenses in the event of any investigation initiated or brought by Indemnitee to the extent reasonably necessary or advisable in support of Indemnitee's defense of a Proceeding to which Indemnitee was, is or is threatened to be made, a party;

(b) **Lack of Good Faith.** To indemnify Indemnitee for any Expenses incurred by Indemnitee with respect to any Proceeding instituted by Indemnitee to establish, enforce or interpret a right to indemnification under this Agreement or any other statute or law or otherwise as required under Section 145 of the DGCL, if a court of competent jurisdiction determines that each of the material assertions made by Indemnitee in such proceeding was not made in good faith;

(c) **Insured Claims.** To indemnify Indemnitee for Expenses to the extent such Expenses have been paid directly to Indemnitee by an insurance carrier under an insurance policy maintained by the Company; or

(d) **Certain Securities Exchange Act of 1934 Claims.** To indemnify Indemnitee in connection with any claim made against Indemnitee for (i) an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Exchange Act or any similar successor statute or any similar provisions of state statutory law or common law, (ii) any reimbursement of the Company by Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by Indemnitee from the sale of securities of the Company, as required in each case under the Exchange Act (including any such reimbursements that arise from an accounting restatement of the Company pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), or the payment to the Company of profits arising from the purchase and sale by Indemnitee of securities in violation of Section 306 of the Sarbanes-Oxley Act), or (iii) any fines payable under state or federal securities laws; provided, however, that to the fullest extent permitted by applicable law and to the extent Indemnitee is successful on the merits or otherwise with respect to any such Proceeding, the Expenses actually and reasonably incurred by Indemnitee in connection with any such Proceeding shall be deemed to be Expenses that are subject to indemnification hereunder.

9. **Contribution**.

(a) Whether or not the indemnification provided in this Agreement is available, in respect of any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall pay, in the first instance, the entire amount of any judgment or settlement of such action, suit or proceeding without requiring Indemnitee to contribute to such payment, and the Company hereby waives and relinquishes any right of contribution it may have at any time against Indemnitee. The Company shall not enter into any settlement of any action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding) unless such settlement provides for a full and final release of all claims asserted against Indemnitee.

(b) Without diminishing or impairing the obligations of the Company set forth in the preceding subparagraph, if, for any reason, Indemnitee shall elect or be required to pay all or any portion of any judgment or settlement in any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall contribute to the amount of Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred and paid or payable by Indemnitee in proportion to the relative benefits received by the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, from the transaction or events from which such action, suit or proceeding arose; provided, however, that the proportion determined on the basis of relative benefit may, to the extent necessary to conform to law, be further adjusted by reference to the relative fault of the Company and all officers, directors or employees of the Company other than Indemnitee who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, in connection with the transactions or events that resulted in such Expenses, judgments, fines or settlement amounts, as well as any other equitable considerations which applicable law may require to be considered. The relative fault of the Company and all officers, directors or employees of the Company, other than Indemnitee, who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, shall be determined by reference to, among other things, the degree to which their actions were motivated by intent to gain personal profit or advantage, the degree to which their liability is primary or secondary and the degree to which their conduct is active or passive.

(c) The Company shall fully indemnify and hold Indemnitee harmless from any claims of contribution which may be brought by officers, directors or employees of the Company, other than Indemnitee, who may be jointly liable with Indemnitee.

(d) To the fullest extent permissible under applicable law and without diminishing or impairing the obligations of the Company set forth in the preceding subparagraphs of this Section 9, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

10. **No Imputation.** The knowledge and/or actions, or failure to act, of any director, officer, agent or employee of the Company or the Company itself shall not be imputed to Indemnitee for purposes of determining any rights under this Agreement.

11. **Determination of Good Faith.** For purposes of any determination of good faith, Indemnitee shall be deemed to have acted in good faith if Indemnitee's action is based on the records or books of account of the Enterprise, including financial statements, or on information, opinion, reports or statements supplied to Indemnitee by the officers or employees of the Enterprise in the course of their duties, or on the advice of legal counsel for the Enterprise or the Board of Directors of the Enterprise or any counsel selected by any committee of the Board of Directors of the Enterprise or on information or records given or reports made to the Enterprise by an independent certified public accountant or by an appraiser, investment banker, compensation consultant, or other expert selected with reasonable care by the Enterprise or the Board of Directors of the Enterprise or any committee thereof. The provisions of this Section 11 shall not be deemed to be exclusive or to limit in any way the other circumstances in which Indemnitee may be deemed to have met the applicable standard of conduct. Whether or not the foregoing provisions of this Section are satisfied, it shall in any event be presumed that Indemnitee has at all times acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

12. **Defined Terms and Phrases.** For purposes of this Agreement, the following terms shall have the following meanings:

(a) "Company" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that if Indemnitee is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, trustee, general partner, managing member, fiduciary, employee or agent of any other enterprise, Indemnitee shall stand in the same position under the provisions of this Agreement with respect to the resulting or surviving corporation as Indemnitee would have with respect to such constituent corporation if its separate existence had continued.

(b) "Enterprise" means the Company and any other enterprise that Indemnitee was or is serving at the request of the Company as a director, officer, partner (general, limited or otherwise), member (managing or otherwise), trustee, fiduciary, employee or agent.

(c) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(d) "Expenses" shall include all direct and indirect costs, fees and expenses of any type or nature whatsoever, including all attorneys' fees and costs, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, fees of private investigators and professional advisors, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, any federal, state, local or foreign taxes imposed on Indemnitee as a result of the actual or deemed receipt of any payment under this Agreement (including taxes that may be imposed upon the actual or deemed receipt of payments under this Agreement with respect to the imposition of federal, state, local or foreign taxes), fax transmission charges, secretarial services and all other disbursements, obligations or expenses in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, settlement or appeal of, or otherwise participating in a Proceeding. Expenses also shall include any of the forgoing expenses incurred in connection with any appeal resulting from any Proceeding, including the principal, premium, security for, and other costs relating to any costs bond, supersedes bond, or other appeal bond or its equivalent. Expenses also shall include any interest, assessment or other charges imposed thereon and costs incurred in preparing statements in support of payment requests hereunder. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee. For the purposes of any advancement of Expenses for which Indemnitee has made written demand to the Company in accordance with this Agreement, all Expenses included in such demand that are certified by affidavit of Indemnitee's counsel as being reasonable shall be presumed conclusively to be reasonable.

(e) "Independent Counsel" means a law firm, or a member of a law firm, that is of regional or national recognition and experienced in matters of corporation law, and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Company shall pay the reasonable fees of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or its engagement pursuant hereto.

(f) "Proceeding" shall include any actual, threatened, pending or completed action, suit, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought by a third party, a government agency, the Company or its Board or a committee thereof, whether in the right of the Company or otherwise and whether of a civil (including intentional or unintentional tort claims), criminal, administrative, legislative or investigative (formal or informal) nature, including any appeal therefrom, in which Indemnitee was, is, will or might be involved as a party, potential party, non-party witness or otherwise by reason of the fact that Indemnitee is or was a director, officer, employee or agent of the Company, by reason of any action (or failure to act) taken by Indemnitee or of any action (or failure to act) on Indemnitee's part while acting as a director, officer, employee or agent of the Company, or by reason of the fact that Indemnitee is or was serving at the request of the Company as a director, officer, partner (general, limited or otherwise), member (managing or otherwise), trustee, fiduciary, employee or agent of any other enterprise, in each case whether or not serving in such capacity at the time any liability or expense is incurred for which indemnification, reimbursement or advancement of expenses can be provided under this Agreement, including one pending on or before the date of this Agreement, but excluding one initiated by Indemnitee pursuant to Section 4 to enforce Indemnitee's rights under this Agreement.

(g) In addition, references to "other enterprise" shall include another corporation, partnership, limited liability company, joint venture, trust, employee benefit plan or any other enterprise; references to "fines" shall include any excise taxes assessed on Indemnitee with respect to an employee benefit plan; references to "serving at the request of the Company" shall include any service as a director, officer, employee or agent of the Company which imposes duties on, or involves services by Indemnitee with respect to an employee benefit plan, its participants, or beneficiaries; and if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan, Indemnitee shall be deemed to have acted in a manner "not opposed to the best interests of the Company" as referred to in this Agreement; references to "applicable law" in Section 1 refer to applicable law (including the laws of the State of Delaware) in effect on the date hereof, or as such laws may hereafter be amended from time to time to increase the scope of permitted indemnification; references to "include" or "including" shall mean include or including, without limitation; references to Sections, paragraphs or clauses are to Sections, paragraphs or clauses in this Agreement unless otherwise specified; and the Company and Indemnitee are individually referred to herein as a "party" and collectively as the "parties."

13. **Miscellaneous.**

(a) **Governing Law.** This Agreement and all acts and transactions pursuant hereto and the rights and obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of Delaware, without giving effect to principles of conflicts of law.

(b) **Entire Agreement; Binding Effect.** Without limiting any of the rights of Indemnitee described in Section 5(b), this Agreement sets forth the entire agreement and understanding of the parties relating to the subject matter herein and merges all prior discussions and supersedes any and all previous agreements between them covering the subject matter herein. The indemnification provided under this Agreement applies with respect to events occurring before or after the effective date of this Agreement, and shall continue to apply even after Indemnitee has ceased to serve the Company in any and all indemnified capacities.

(c) **Amendments and Waivers.** No modification of or amendment to this Agreement, nor any waiver of any rights under this Agreement, shall be effective unless in writing signed by the parties to this Agreement. The failure by either party to enforce any rights under this Agreement shall not be construed as a waiver of any rights of such party.

(d) **Notices.** Any notice, demand or request required or permitted to be given under this Agreement shall be in writing and shall be deemed sufficient (i) when delivered personally, (ii) 48 hours after being sent by nationally-recognized courier or deposited in the U.S. mail, as certified or registered mail, with postage prepaid, and addressed to the party to be notified at such party's address as set forth below or as subsequently modified by written notice, or (iii) upon confirmation of receipt by the recipient when sent by electronic mail or facsimile. All communications shall be sent:

To Indemnitee at:

The address listed on the signature page hereto.

To the Company at:

5300 Memorial Drive
Suite 950
Houston, TX 77007
Attn: Chief Executive Officer

or to such other address as may have been furnished to Indemnitee by the Company or to the Company by Indemnitee, as the case may be.

(e) **Successors and Assigns.** This Agreement shall be binding upon the Company and its successors (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business and/or assets of the Company) and assigns, and inure to the benefit of Indemnitee and Indemnitee's heirs, executors, administrators, legal representatives and assigns. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of the Company, by written agreement in form and substance satisfactory to Indemnitee, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

(f) **No Employment Rights.** Nothing contained in this Agreement is intended to create in Indemnitee any right to continued employment.

(g) **Company Position.** The Company shall be precluded from asserting, in any Proceeding brought for purposes of establishing, enforcing or interpreting any right to indemnification under this Agreement, that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement and is precluded from making any assertion to the contrary.

(h) **Subrogation.** In the event of payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all documents required and shall do all acts that may be necessary to secure such rights and to enable the Company to effectively bring suit to enforce such rights.

(i) **Third Party Beneficiaries.** There are no intended third party beneficiaries of this Agreement.

(j) **Reliance and Enforcement.** The Company expressly confirms and agrees that it has entered into this Agreement and assumes the obligations imposed on it hereby in order to induce Indemnitee to serve as an officer or director of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as an officer or director of the Company. The Company shall not seek from a court, or agree to, a "bar order" which would have the effect of prohibiting or limiting Indemnitee's rights to receive advancement of expenses under this Agreement.

(k) **Headings; Recitals.** The headings in this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof. The recitals hereto are incorporated herein and made a part hereof.

(l) **Security.** To the extent requested by Indemnitee and approved by the Board (not to be unreasonably withheld, conditioned or delayed), the Company may at any time and from time to time provide security to Indemnitee for the Company's obligations hereunder through an irrevocable bank line of credit, funded trust or other collateral. Any such security, once provided to Indemnitee, may not be revoked or released without the prior written consent of Indemnitee.

(m) **Duration.** All agreements and obligations of the Company contained herein shall continue during the period that Indemnitee is a director or officer of the Company (or is serving at the request of the Company as a director, officer, employee, member, trustee or agent of another Enterprise) and shall continue thereafter (i) so long as Indemnitee may be subject to any possible Proceeding and (ii) throughout the pendency of any Proceeding commenced by Indemnitee to enforce or interpret Indemnitee's rights under this Agreement, even if, in either case, Indemnitee may have ceased to serve in such capacity at the time of any such Proceeding**.**

(e) **Counterparts.** This Agreement may be executed by original, facsimile signature, electronic mail or other transmission method in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument.

[Signature Page Follows]

The parties have executed this Agreement as of the date first set forth above.

THE COMPANY:

MOLECULIN BIOTECH, INC.

By: _____
(Signature)

Name: _____
Title: _____

AGREED TO AND ACCEPTED:

INDEMNITEE:

[_____**]**

_____
(Signature)

Address for notices: _____
_____
_____

DC:82310041.1

Exhibit 31.1

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

I, Walter V. 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.

August 11, 2021

By: /s/ Walter V. Klemp
Walter V. 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 P. 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.

August 11, 2021

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 June 30, 2021 of Moleculin Biotech, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Walter V. 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.

Date: August 11, 2021

By: /s/ Walter V. Klemp
Walter V. 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 June 30, 2021 of Moleculin Biotech, Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jonathan P. 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.

Date: August 11, 2021

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.