March 28, 2018

Moleculin Biotech, Inc. Reports Financial Results for the Year Ended December 31, 2017

HOUSTON -- (Marketwired) -- 03/28/18 -- Moleculin Biotech, Inc.(NASDAQ: MBRX) ("Moleculin" or the "Company"), a clinical stage pharmaceutical company focused on the development of oncology drug candidates, all of which are based on license agreements with The University of Texas System on behalf of the M.D. Anderson Cancer Center, today announced its financial results for the year ended December 31, 2017. Additionally, the Company announced potential upcoming milestones and recent corporate developments.

Management Discussion

Walter Klemp, Chairman and CEO of Moleculin, said, "We continued to make significant progress in developing Moleculin's distinctive cancer treatment technologies during 2017. We firmly believe that all three of our highly differentiated technologies have breakthrough potential in effectively treating various cancers. From those three core technologies, we now have six potential drug candidates, two of which we expect will commence clinical trials in 2018, with the possibility of a third before the end of the year.

"Our potentially disruptive technologies include Annamycin, a chemotherapy agent that is active against multidrug resistant tumor cells and has been designed to be non-cardio toxic (unlike currently approved drugs in this class); immuno-stimulating STAT3 inhibitors WP1066 and WP1732 that target glioblastoma and pancreatic cancer; and WP1122, an inhibitor of glycolysis that has been shown in preclinical testing to effectively block the energy supply required by cancer cells and effectively starves the cancer cells to death. Our diverse development portfolio gives Moleculin what I like to call multiple shots on goal."

The Company submitted an application in October 2017 for a Clinical Trial Authorization ("CTA") for Annamycin in Poland. Having met all the requirements, the Ethics Committee in Poland approved the Phase I/II trial of Annamycin for the treatment of relapsed or refractory acute myeloid leukemia ("AML") in December 2017. In March the Company received requests for and provided additional information to the Polish National Office. It expects a response from the Polish National Office in the first half of 2018 and at the earliest mid-April 2018. The start of clinical trials in Poland remains subject to confirmation and approval of the CTA by the Polish National Office. The Company can provide no assurance that it will receive such confirmation on a timely basis, if at all.

In addition, the Company continues to recruit and contract clinics both in the United States and Poland. In the U.S., the Company has one site -- University Hospitals Cleveland Medical Center ("UHCMC") -- recruiting patients and enrollment has begun. The Company can provide no assurance that it will continue enrollments or begin treatment on a timely basis, if at all.

Mr. Klemp continued, "Additionally, this past December we announced that a physician-sponsored Investigational New Drug ("IND") application for a Phase I trial of Moleculin's WP1066 in patients with recurrent malignant glioma and brain metastasis from melanoma was allowed by the U.S. Food and Drug Administration ("FDA"). This will be our second drug in clinical trials. The trial will be conducted at the MD Anderson Cancer center to evaluate safety and efficacy. We believe WP1066 represents a new class of oncology drugs able to fight tumors on two fronts by directly inhibiting cell signaling supporting tumor activity, and independently stimulating a natural immune response. This constitutes a new approach to treating brain tumors and tumor metastasis to the brain.

"We also intend to request a clinical trial authorization in Poland for WP1220 for the topical treatment of Cutaneous T-Cell Lymphoma (CTCL), which we expect will become our third compound in clinical trials in 2018. WP1220 is one of our patented STAT3 inhibitors designed to be compatible with topical formulations and was selected based on its preclinical activity in CTCL cell lines and based on the need for better topical treatments for skin cancer.

"As we look ahead to 2019 and beyond, we are excited about a new molecule that we recently licensed from MD Anderson -- WP1732 -- that shares many of the same characteristics of WP1066, especially its ability to inhibit activated STAT3, which is widely considered a key transcription factor involved in the development and progression of tumors. WP1732 has demonstrated significantly different organ distribution in animal models, suggesting it could be especially well-suited to target systemic solid tumors including pancreatic cancer, one of the most deadly and difficult to treat.

"An important attribute of WP1732 is that it is more water-soluble than WP1066. So, while we have been focused on oral delivery of WP1066, WP1732 is ideally suited to intravenous ("IV") administration, which makes the delivery of the drug potentially more convenient and efficacious. We've already started the process of preparing the preclinical data necessary for an IND for WP1732 and we hope to have that preparation completed in 2018.

"I also want to acknowledge the outstanding Scientific Advisory Board that is part of the Moleculin brain trust. Waldemar Priebe, PhD., a Founder of Moleculin and the Company's Founding Scientist, leads a team of world renown experts in various cancer fields that includes John Paul Waymack, MD; Elihu Estey, MD; and Jorge Cortes, MD. Together with our two Chief Medical Officers, Robert Shepard, MD (Annamycin), and Sandra Silberman, MD (New Products), their expertise and guidance have enabled us at Moleculin to successfully proceed in the development of our highly differentiated compounds. Our expectation is that 2018 will see significant progress in advancing our portfolio of unique cancer treatments," concluded Mr. Klemp.

Fourth Quarter Highlights and Recent Corporate Developments

Moleculin Announces Grant-Funded Collaboration to Expand Understanding of New Discovery - March 20, 2018, the Company announced it has entered into a collaboration with a team of scientists in Poland who have received a $300,000 research grant to expand the understanding of how Moleculin's leading STAT3 inhibitor WP1066 and the Company's newly discovered drug candidate, WP1732, create a blockade of transcription factor STAT3 leading to tumor cell death and immune-stimulating effects.

Moleculin Announces Pricing of $9 Million Registered Direct Offering- February 16,

2018, the Company announced that it has entered into a definitive agreement with institutional investors for a registered direct offering of securities with gross proceeds of approximately $9 million.

Moleculin Announces Breakthrough Discovery of a New Molecule for Cancer Treatment - February 15, 2018, the Company announced that, pursuant to its continued collaboration with MD Anderson it has developed and licensed what it believes, based on preclinical testing, is a major breakthrough in its effort to develop a new cancer treatment that selectively kills highly resistant tumors. Specifically, the Company has preclinical evidence to suggest it is capable of influencing a process known as 'ubiquitination' to block the activated form of STAT3, an important oncogenic transcription factor. The lead molecule resulting from this new discovery is called WP1732 and it not only appears to share the same key mechanistic properties with WP1066, it has markedly different organ distribution and its dramatically increased solubility makes it ideal for administration via standard IV injection. Importantly, preclinical testing has also shown that WP1732's properties make it a promising candidate for treating pancreatic cancer.

Moleculin Announces Collaboration with Emory University to Develop Novel Treatment of Pediatric Brain Cancer - February 13, 2018, the Company announced it has entered into an agreement with Emory University to enable expanded cancer research on Moleculin's WP1066 molecule for the possible treatment of medulloblastoma, a pediatric malignant primary brain tumor. Physician-scientists at Emory University and Children's Healthcare of Atlanta have requested support to continue research aimed at the development of a novel treatment of medulloblastoma using WP1066 and Moleculin has agreed to supply them with a pure form of WP1066 for preclinical testing for the potential future treatment of patients with the disease. Emory studies so far have indicated that medulloblastoma may be particularly vulnerable to the ability of WP1066 to block the activated form of STAT3, a key signaling protein believed to contribute to the growth and survival of many tumors, including medulloblastoma.

Moleculin Announces Activity with Pancreatic Cancer Drug- February 7, 2018, the Company announced it has been able to show promising tumor suppression activity with its inhibitor of glycolysis, WP1122. The Company's glycolysis inhibitors have shown a remarkable affinity for concentrating in the pancreas and has solid data showing the ability of WP1122 to inhibit pancreatic tumor growth in mice.

Leading Leukemia Experts Join Moleculin's Science Advisory Board- January 17, 2018, the Company announced the expansion of its Science Advisory Board to include Drs. Jorge Cortes and Elihu Estey.

Jorge Cortes, M.D., is deputy chair and professor of medicine in the Department of Leukemia at MD Anderson Cancer Center where he directs the CML and AML Programs. Dr. Cortes received his medical degree in 1986 from the Universidad Nacional Autonoma de Mexico, and has been at MD Anderson since 1991. Dr. Cortes, whose clinical interest focuses on new drug development and the management of patients with myelodysplatic syndromes, acute and chronic leukemias, and myeloproliferative disorders, has authored over 900 peer-reviewed medical publications in top-tier journals including New England Journal of Medicine, Lancet Oncology, Lancet Hematology, Journal of Clinical Oncology, Leukemia, Blood and many others.

Elihu Estey, M.D., is a Professor of Medicine in the Division of Hematology at the University of Washington School of Medicine and a Full Member and Director of AML Clinical Research (non-transplant) Clinical Research Division, Fred Hutchinson Cancer Research Center. Dr. Estey has built a distinguished career in cancer research approaching 40 years of active clinical practice with AML patients, providing mentorships for many physicians that have risen to prominence in AML, lectured globally to professional audiences on cancer research and published more than 700 articles on hematologic malignancies, specifically on AML. Additionally, Dr. Estey serves on the European Leukemia Net (ELN) guidelines committee for AML and has served as an advisor for AML studies to the Oncology Drugs Advisory Committee ("ODAC") of the FDA.

Moleculin Expands Leukemia Development Portfolio with Immuno-Stimulating STAT3 Inhibitor - January 10, 2018, the Company announced it has expanded the Company's development pipeline for the treatment of AML with an immuno-stimulating STAT3 inhibitor. Leading experts in the treatment of AML, Dr. Jorge Cortes and Dr. Sanjay Awasthi requested the Company to expand its clinical research to include WP1066, an immuno-stimulating agent and STAT3 inhibitor, to increase therapeutic options for AML patients. This would potentially be complementary and synergistic with Annamycin and existing first line treatments.

Moleculin Announces Polish Approval for Leukemia Clinical Trial- December 21, 2017, the Company announced that the Ethics Committee in Poland has approved the Company's Phase I/II clinical trial of Annamycin for the treatment of relapsed or refractory AML.

Moleculin's WP1066 Drug gets FDA Brain Tumor IND Clearance- December 5, 2017, the Company announced the physician-sponsored IND application for a Phase I trial of Moleculin's drug WP1066 in patients with recurrent malignant glioma and brain metastasis from melanoma has been allowed by the FDA. WP1066 is the second of Moleculin's drugs to enter clinical stage and represents a new class of oncology drugs able to fight tumors on two fronts by directly inhibiting cell signaling and independently stimulating a natural immune response. This IND was sponsored by Dr. Amy Heimberger, who will serve as the principal investigator for the Phase I trial at MD Anderson Cancer Center to evaluate safety and efficacy.

Moleculin Appoints Dr. Sandra Silberman as Chief Medical Officer - New Products- November 8, 2017, the Company announced the appointment of Dr. Sandra Silberman as Chief Medical Officer ("CMO") in charge of New Products.

Moleculin Announces MD Anderson has Filed an IND with the FDA on its Drug WP1066 for the Treatment of Brain Tumors - November 1, 2017, the Company announced that responses have been submitted to FDA requests for additional information relating to the physician-sponsored IND application to study WP1066 as a potential treatment for brain tumors.

Moleculin Requests Authorization from the Polish Government to Advance Annamycin - October 24, 2017, the Company announced that it has submitted its request for CTA in Poland which, if allowed, will enable a clinical trial to study Annamycin for the treatment of relapsed or refractory AML in Poland. This will be in addition to the previously announced allowance of Moleculin's IND filing with the FDA.

Moleculin Announces 14 Qualified Clinical Sites Requesting Participation in Annamycin Trial - October 18, 2017, the Company announced that 14 qualified cancer clinics have requested to participate in its clinical trial to study Annamycin for the treatment of relapsed or refractory AML.

Moleculin Announces Strategic Collaboration to Develop Immuno-stimulating Drug- October 11, 2017, the Company announced that it has entered into an agreement to collaborate with the University of Bergen to expand research on WP1066 and early indications of a possible dual ability to increase immune system response to tumors while also suppressing tumor cell proliferation tumor cell and survival.

Moleculin Signs Agreement with First Hospital for Annamycin Trials - October 3, 2017, the Company announced it has entered into an agreement with the first of several hospitals desiring to become treatment sites for its clinical trial to study Annamycin for the treatment of relapsed or refractory AML.

Moleculin Announces FDA Approval of Annamycin IND - September 26, 2017, the Company announced that the FDA has allowed Moleculin's IND for the study of Annamycin in relapsed or refractory AML to proceed. This allows Moleculin to begin clinical trials of Annamycin in the U.S.

Anticipated Milestone	***Potential Timeframe***
Announcement that our IND for Annamycin has become effective and that we may begin clinical trials	***Accomplished***
Initial IRB (Institutional Review Board) approvals and site initiations of various clinical sites participating in our Phase I/II clinical trial of Annamycin	***Accomplished*** and ongoing through Second Half of 2018
Establishment of a new RP2D for Annamycin	Second Half of 2018
A clinician sponsored IND for WP1066 for treatment of adult brain tumors moving forward	***IND Accomplished***; Trial expected to begin First Half of 2018
Announcement of initial Clinical Data for Annamycin trial	2018
Announcement of further benefits of our sponsored research agreement with MD Anderson	***Accomplished*** and Ongoing into 2019
Announce CTA for WP1220 for the treatment of cutaneous T-cell lymphoma (CTCL)	2018
Announce WP1122 and WP1732 move into preclinical work	2018
Announce the fourth drug approved for clinical trial	2019

Financial Results for the Year Ended December 31, 2017

Research and Development Expense. Research and development (R&D) expense was $4.5 million and $1.5 million for the years ended December 31, 2017 and 2016, respectively. The increase in R&D of approximately $3.0 million mainly represents an increase of approximately: $2.0 million associated with developing and testing drug product as we prepared for clinical trials; $0.4 million related to an increase in R&D headcount and associated payroll costs; $0.3 million for sponsored research and related expenses; and $0.3 million associated with license fees. The increase in R&D headcount mainly represents the associated costs of increasing the commitments of the Company's part-time employees and the addition of a second Chief Medical Officer - New Products. These all are a reflection of the increased clinical and pre-clinical activity for its drug portfolio as compared to 2016.

General and Administrative Expense. General and administrative (G&A) expense was $4.1 million and $2.4 million for the years ended December 31, 2017 and 2016, respectively. The increase in G&A of approximately $1.7 million was mainly attributable to: (a) the increase in headcount and associated payroll costs, including additional stock-based compensation expense of $1.0 million; (b) approximately $0.4 million in legal, accounting,

consulting, and other professional expenses; (c) $0.2 million in insurance expense; and (d) approximately $0.1 million in occupancy, office and other costs. These increases reflect the increase in support of the Company's clinical activity described above as compared to 2016.

Net Loss. The net loss for the twelve months ended December 31, 2017 was $9.8 million, which included non-cash expenses of approximately $0.7 million, which was comprised almost completely of stock-based compensation.

Liquidity and Capital Resources

As of December 31, 2017, we had $7.7 million in cash. During 2017, via an equity offering in February of 2017 (the February 2017 Offering), the Company's at-the-market issuance agreement (ATM), and the exercise of warrants associated with the February 2017 Offering, the Company issued 7.2 million shares of common stock and received $10.1 million in net proceeds. Subsequent to year-end the Company entered into a Purchase Agreement with certain Investors for the sale of 4,290,000 shares of its common stock at a purchase price of $2.10 per share. Concurrently with the sale of the common shares, pursuant to the Purchase Agreement, the Company also sold warrants to purchase 2,145,000 shares of common stock, which have an exercise price of $2.80 per share. This sale of common shares and warrants generated aggregate gross proceeds of approximately $9.0 million with net proceeds approximating $8.3 million (February 2018 Offering). The Company believes that its existing cash and cash equivalents as of December 31, 2017 along with the cash generated by the February 2018 Offering, will be sufficient to fund its planned operations into the first quarter of 2019. Such plans are subject to change depending on clinical enrollment and regulatory progress and the use and supply of drug product.

About Moleculin Biotech, Inc.

Moleculin Biotech, Inc. is a clinical stage pharmaceutical company focused on the development of oncology drug candidates, all of which are based on discoveries made at M.D. Anderson Cancer Center. Our clinical stage drugs are Annamycin, an anthracycline designed to avoid multidrug resistance mechanisms with little to no cardiotoxicity being studied for the treatment of relapsed or refractory acute myeloid leukemia, more commonly referred to as AML, and WP1066, an immuno-stimulating STAT3 inhibitor targeting brain tumors, pancreatic cancer and AML. We are also engaged in preclinical development of additional drug candidates, including additional STAT3 inhibitors and compounds targeting the metabolism of tumors.

For more information about the Company, please visithttp://www.moleculin.com.

Forward-Looking Statements

Some of the statements in this release are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995, which involve risks and uncertainties. Forward-looking statements in this press release include, without limitation, the potential for Annamycin to demonstrate safety and efficacy in AML patients in clinical trials, the timeframe in which such trials are commenced and completed, and the ability of the Company to obtain Polish regulatory approvals to commence clinical trials for Annamycin in Poland; the willingness and ability of MD Anderson to begin a Phase 1 clinical trial with WP1066, the timeframe in which such trial is completed, and the ability of WP1066 to show safety and efficacy in patients with glioblastoma or melanoma that has metastasized

to the brain; the potential for WP1220 to become an effective treatment for CTCL and the ability of the Company to obtain Polish regulatory approvals to commence clinical trials to study WP1220 for CTCL; the ability and timeline pursuant to which the Company is able to prepare the preclinical data necessary for an IND for WP1732; and the potential for WP1122 to become an effective treatment for brain tumors or the ability of a WP1220 analog to become a safe and effective drug for pancreatic cancer in humans. These statements relate to future events, future expectations, plans and prospects. Although Moleculin Biotech believes that the expectations reflected in such forward-looking statements are reasonable as of the date made, expectations may prove to have been materially different from the results expressed or implied by such forward-looking statements. Moleculin Biotech has attempted to identify forward-looking statements by terminology including "believes," "estimates," "anticipates," "expects," "plans," "projects," "intends," "potential," "may," "could," "might," "will," "should," "approximately" or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. These statements are only predictions and involve known and unknown risks, uncertainties, and other factors, including those discussed under Item 1A. "Risk Factors" in our most recently filed Form 10-K filed with the Securities and Exchange Commission ("SEC") and updated from time to time in our Form 10-Q filings and in our other public filings with the SEC. Any forward-looking statements contained in this release speak only as of its date. We undertake no obligation to update any forward-looking statements contained in this release to reflect events or circumstances occurring after its date or to reflect the occurrence of unanticipated events.

Moleculin Biotech, Inc.

Unaudited Condensed Balance Sheets
(in thousands)

	December 31, 2017	December 31, 2016
Current Assets:		
Cash and cash equivalents	$ 7,714	$ 5,007
Prepaid expenses	588	215
Total current assets	8,302	5,222
Furniture and equipment, net	33	23
Intangible assets	11,148	11,148
Total Assets	$ 19,483	$ 16,393
Current Liabilities:		
Accounts payable and accrued expenses	$ 1,712	$ 1,049
Warrant liability	503	-
Convertible notes payable	-	296
Total current liabilities	2,215	1,345
Deferred compensation - related party, LT	150	88
Total Liabilities	2,365	1,433
Total Stockholders' Equity	17,118	14,960
Total Liabilities and Stockholders' Equity	$ 19,483	$ 16,393

Moleculin Biotech, Inc.

Unaudited Condensed Statements of Operations
(in thousands, except share and per share amounts)

	Year Ended December 31, 2017	Year Ended December 31, 2016
Revenues	$ -	$ -
Operating Expenses:		
Research and development	4,545	1,496
General and Administrative and depreciation	4,108	2,387
Total operating expenses	8,653	3,883
Operating loss	(8,653)	(3,883)
Other income (expense)		
Loss from change in fair value of warrant liability	(2,548)	-
Gain from settlement of liability	149	-
Gain from expiration of warrants	1,238	-
Other income and expenses, net	9	(43)
Net Loss	$ (9,805)	$ (3,926)
Net loss per common share - basic and diluted	$ (0.53)	$ (0.40)
Weighted average common shares outstanding - basic and diluted	18,569,193	9,827,510

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Source: Moleculin Biotech, Inc.