

February 15, 2018



# **Moleculin Announces Breakthrough Discovery of a New Molecule for Cancer Treatment**

## **Cutting Edge Science Suggests New Molecule Is Capable of Shutting Down Tumor Activity**

HOUSTON, TX -- (Marketwired) -- 02/15/18 -- Moleculin Biotech, Inc., (NASDAQ: MBRX) ("Moleculin" or the "Company"), a clinical stage pharmaceutical company focused on the development of anti-cancer drug candidates, some of which are based on license agreements with The University of Texas System on behalf of the MD Anderson Cancer Center ("MD Anderson"), today 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.

"We believe our unique approach to develop immuno-stimulating STAT3 inhibitors just took a major step forward," commented Walter Klemp, Chairman and CEO of Moleculin. "Our WP1066 portfolio has already resulted in multiple collaborations with some of the most prestigious cancer centers in the world and now this new discovery could dramatically improve our ability to treat a broader range of the most difficult cancers, and especially pancreatic cancer."

Dr. Don Picker, Moleculin's Chief Science Officer, explained, "The scientific community recognizes the potential for small molecule immuno-stimulating STAT3 inhibitors to become a game-changer for treating cancer patients. We believe this discovery may not only dramatically improve our ability to develop and deliver such therapies, it may also help support a new mechanistic understanding of oncogenic transcriptional activity. Specifically, we now have preclinical evidence to suggest we are capable of controlling a process known as 'ubiquitination' to block the activated form of STAT3, an important oncogenic transcription factor. The study of the role of ubiquitination in cancer is cutting edge science and appears to hold great promise. And, given the desperate lack of treatment options for indications like pancreatic cancer, we believe clinical researchers across the country have been eagerly awaiting a breakthrough like this."

"In developing our current lead STAT3 inhibitor, WP1066, for brain tumors, we have focused on its oral bioavailability and brain uptake," continued Dr. Picker, "but at the same time we have continued our quest to expand this portfolio by the creating alternative inhibitors with increased bioavailability and altered tissue and organ distribution that are not affected by first-pass metabolism. 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, one of the most resistant and deadly forms of cancer."

"So much has happened in the past few months, it's important to recap where we are," added Mr. Klemp. "Moleculin has three potential breakthrough disruptive technologies -- (1) Annamycin, an anticancer 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), (2) immuno-stimulating STAT3 inhibitors like WP1066 and, now, WP1732, and (3) WP1122, a metabolic inhibitor that has been shown in preclinical testing to effectively block the energy supply required by cancer cells to function and proliferate. Since our IPO in June 2016, we have accelerated to the point of having two drugs, Annamycin and WP1066, beginning clinical trials in the near term."

Mr. Klemp concluded, "We are now demonstrating the breadth of our drug pipeline and the benefits of collaborating with world-class cancer research centers. In the AML space, we expect patient dosing either in the United States or Poland to begin with Annamycin yet this quarter and we have begun to work with researchers at MD Anderson on using our immuno-stimulating STAT3 inhibitors to target AML as well. A second clinical trial targeting brain tumors with WP1066 should begin dosing within the first half of the year. In Poland, we are about to request a clinical trial authorization for WP1220 for the topical treatment of Cutaneous T-Cell Lymphoma (CTCL), which we expect will become our third clinical trial this year. WP1220 is our patented STAT3 inhibitor 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 CTCL. Additionally, we just announced positive data for WP1122, our glycolysis inhibitor, in a pancreatic cancer mouse model. Along with the newly licensed discovery of WP1732, this sets the course for establishing the base for two more Investigational New Drug (IND) applications over the coming year and positions us as a leader in developing new approaches for pancreatic cancer. Our highly experienced leadership and expanding team is looking forward to sharing more progress on all of this activity as we move forward into 2018."

### ***About Moleculin Biotech, Inc.***

Moleculin Biotech, Inc. is a clinical stage pharmaceutical company focused on the development of anti-cancer drug candidates, some of which are based on discoveries made at M.D. Anderson Cancer Center. Our clinical stage drugs are Annamycin, an anthracycline being studied for the treatment of relapsed or refractory acute myeloid leukemia, more commonly referred to as AML, and WP1066, a modulator of hard-to-target tumor cell signaling mechanisms intended to attack tumor activity directly while also recruiting the patient's own immune system. We are also engaged in preclinical development of additional drug candidates, including compounds targeting the metabolism of tumors.

For more information about the Company, please visit <http://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 ability of Annamycin, WP1066 and WP1220 to demonstrate safety and efficacy in clinical trials and the timing of the commencement of such trials, and the ability of WP1732 and WP1122 to achieve IND status and to demonstrate safety and efficacy in human patients. 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.

#### Contacts

Joe Dorame, Robert Blum or Joe Diaz  
Lytham Partners, LLC  
602-889-9700  
[mbrx@lythampartners.com](mailto:mbrx@lythampartners.com)

Source: Moleculin Biotech, Inc.