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Moleculin Announces Completion of Lymphoma Trial Enrollment

HOUSTON, Aug. 13, 2019 /PRNewswire/ -- Moleculin Biotech, Inc., (Nasdaq: MBRX) ("Moleculin" or the "Company"), a clinical stage pharmaceutical company with a broad portfolio of drug candidates targeting highly resistant tumors, today announced its proof of concept clinical trial to evaluate its p-STAT3 inhibitor, WP1220, for the topical treatment of Cutaneous T-Cell Lymphoma (CTCL) has reached full enrollment.

"We believe there continues to be an unmet need for an improved topical therapy for Stage I-III CTCL skin lesions," commented Walter Klemp, Moleculin's Chairman and CEO, "especially one that may avoid significant unwanted side effects. CTCL is known to frequently involve the upregulation of the activated form of STAT3 (p-STAT3), which has been linked to a range of tumor-related transcriptional activity. This proof of concept, if successful, could be an important first demonstration of a therapeutic effect in humans from such a p-STAT3 inhibitor. We are pleased with how quickly this trial reached full recruitment and we are hopeful to be able to announce results from this trial yet this year. This trial represents one of four clinical trials that we have underway."

Mr. Klemp concluded: "Notwithstanding the relatively rare nature of CTCL, we believe showing activity with one of our STAT3 inhibitors, within our WP1066 family of molecules, could be an indicator of both the value of p-STAT3 as a target and the potential for our drugs in other cancers where STAT3 is highly activated."

About Moleculin Biotech, Inc.

Moleculin Biotech, Inc. is a clinical stage pharmaceutical company focused on the development of a broad portfolio of oncology drug candidates for the treatment of highly resistant tumors. The Company's clinical stage drugs are: Annamycin, a Next Generation 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, WP1066, an Immune/Transcription Modulator capable of inhibiting p-STAT3 and other oncogenic transcription factors while also stimulating a natural immune response, targeting brain tumors, pancreatic cancer and hematologic malignancies, and WP1220, an analog to WP1066, for the topical treatment of cutaneous T-cell lymphoma. Moleculin is also engaged in preclinical development of additional drug candidates, including additional Immune/Transcription Modulators, as well as

compounds capable of Metabolism/Glycosylation Inhibition.

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 ability of WP1220 to demonstrate safety and efficacy in humans and the ability of Moleculin to announce results from the trial during 2019. Although Moleculin 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.

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