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Moleculin Announces Additional Positive Interim Results in Adult Glioblastoma Clinical Trial

Adult brain tumor trial advances to final dose escalation cohort of WP1066

HOUSTON, Oct. 13, 2020 /PRNewswire/ -- Moleculin Biotech, Inc., (Nasdaq: MBRX) (Moleculin or the Company), a clinical stage pharmaceutical company with a broad portfolio of drug candidates targeting significant unmet needs in the treatment of tumors and viruses, announced additional preliminary data from the Phase 1 clinical trial of its immuno-stimulating STAT3 inhibitor, WP1066, in patients with glioblastoma (GBM). This supports the progression of the trial to the fourth and final dose escalation cohort. Three patients have completed treatment in the third cohort at a dose level of 8 mg/kg with no adverse events related to WP1066 and the study will now proceed to the next higher dose of 16 mg/kg.

Walter Klemp, Chairman and CEO of Moleculin, stated, "On the heels of our recent positive announcement regarding the progress of the pediatric brain tumor trial of WP1066, we are pleased to also report on the progress of the adult GBM clinical trial for the same drug candidate. The trial in adults has been important in leading the way to establishing a safe and tolerable human dose level for what we believe is a first-in-class compound that crosses the blood-brain barrier and is being developed for the treatment of central nervous system malignancies. In animal models, WP1066 has been shown to stimulate immune responses that successfully modulate oncogenic transcriptional activity in tumor cells and repress their ability to drive tumor growth."

Mr. Klemp continued: "In addition to providing valuable pharmacokinetic data, this trial also creates the foundation for future studies in WP1066, including another investigator-initiated study, which is currently being proposed to examine the combination of WP1066 with radiation for the treatment of GBM. This next clinical trial is being proposed as a result of recent discoveries presented in a peer-reviewed article published in Clinical Cancer Research (Clin Cancer Res June 30 2020 DOI:10.1158/1078-0432.CCR-19-4092), which reported findings that Moleculin's STAT3 inhibitor, WP1066, used in combination with traditional whole brain radiation therapy, resulted in long-term survivors and enhanced

median survival time relative to monotherapy in mice with implanted human brain tumors."

Mr. Klemp concluded, "In keeping with our established clinical trial reporting policies, we look forward to updating investors on the continued progress of this trial once this final cohort is completed."

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 and viruses. 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 other Immune/Transcription Modulators, as well as WP1122 and related 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 WP1066 as a single agent and in combination with radiation therapy to be shown safe and effective for the treatment of brain tumors. 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.

Contacts
James Salierno / Carol Ruth
The Ruth Group
973-255-8361 / 917-859-0214
jsalierno@theruthgroup.com
cruth@theruthgroup.com

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