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Moleculin Announces New Independent In Vitro Testing Confirms Antiviral Activity of WP1122 in Coronavirus

HOUSTON, July 21, 2020 /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 and viruses, today announced that a second round of independent laboratory testing has confirmed the antiviral activity of WP1122 against coronavirus.

Moleculin contracted with IIT Research Institute (an affiliate of the Illinois Institute of Technology, "IITRI") for additional in vitro testing of its drug candidate, WP1122, in development as a possible treatment for COVID-19. The testing involved a cell viability assay in the VERO E6 cell line infected with SARS-CoV-2 and compared the therapeutic effects of 2-DG (the active ingredient in WP1122) alone with those of WP1122, a 2-DG prodrug. Importantly, the growth medium in this assay was carefully chosen to reflect the levels of glucose normally found in humans rather than the artificially high levels of glucose often used to accelerate in vitro testing.

"This additional testing was important for several reasons," commented Walter Klemp, Chairman and CEO of Moleculin. "Having validation in yet another virus host cell line provides additional confidence in the antiviral activity we are seeing. Also, using a different independent lab from the last testing that was done provides further validation. We are also gaining confidence that in vitro testing results for this class of compounds are significantly affected by the concentration of natural glucose in the microenvironment present during viral replication and continued infection."

Based on feedback from the U.S. Food and Drug Administration ("FDA"), the Company believes it may need to demonstrate activity in a COVID-19 animal model to successfully submit a request for Investigational New Drug ("IND") status for WP1122. In addition, the Company has also contracted with IITRI to conduct preclinical toxicology testing, which is currently under way.

Mr. Klemp concluded: "We should also remind investors that WP1122 is just one compound in a broad portfolio of molecules in this class of antimetabolites. We are also testing other compounds in the portfolio against SARS-CoV-2 and other life-threatening viruses. We

believe WP1122 is promising, but we also don't want to overlook additional opportunities to potentially provide new and better solutions to other viral diseases."

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, being studied for brain tumors, pancreatic cancer and hematologic malignancies; and WP1220, an analog to WP1066, being studied 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, such as WP1122. Moleculin has the exclusive worldwide rights (subject to certain territories for which it has issued sublicenses) to all of the above technologies.

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 WP1122 to show sufficient antiviral potential in vitro and in vivo models, the ability of Moleculin to file an IND submission and the ability of WP1122 to be shown safe and effective for the treatment of COVID-19, other viral diseases, or cancer. 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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