December 27, 2021

# Moleculin Announces Preliminary Third Cohort Interim Data in Phase 1b/2 Clinical Trial of Annamycin for the Treatment of Soft Tissue Sarcoma Lung Metastases

## - Preliminary data currently demonstrate 50% of patients in first two cohorts experienced clinical activity, defined as stable disease and/or better through 4 months or more of treatment

## - Patient enrollment and dosing ongoing; no dose-limiting toxicity (DLT) experienced to-date

## - Annamycin has Fast Track Status and Orphan Drug Designation from FDA for the treatment of soft tissue sarcoma lung metastases

HOUSTON, Dec. 27, 2021 /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 reported preliminary interim results from its U.S. Phase 1b/2 clinical trial as it concluded the safety review of the third cohort and opens the fourth cohort in a dose escalation trial evaluating Annamycin for the treatment of soft tissue sarcoma (STS) lung metastases, which continues to document preliminary clinical activity for this drug.

The Phase 1b/2 study is a U.S. multi-center, open-label, single-arm study that in Phase 1b will determine the maximum tolerated dose (MTD) or the recommended Phase 2 dose (RP2D) and safety of Annamycin. The Phase 2 portion of the study will explore the efficacy of Annamycin as a single agent for the treatment of subjects with STS with lung metastases for whom prior chemotherapy has failed, and for whom new chemotherapy is considered appropriate. A minimum of three subjects will be enrolled in each cohort of the Phase 1b portion of the study until an MTD is identified, after which there will be a recommendation for the RP2D based on an assessment of both safety and efficacy. Up to 25 subjects will be enrolled at the RP2D in Phase 2 to further evaluate efficacy.

"Even though this is still early in the Phase 1b portion of the trial, the data continue to be encouraging. Three of the six patients in the first two cohorts reached four or more months with stable disease or better. In a patient population where the median progression-free survival is approximately 1.6[1] months, we believe Annamycin has the potential to bring a new and effective treatment option to patients with this significant unmet need," commented Walter Klemp, Chairman and CEO of Moleculin.

Mr. Klemp added, "We are also encouraged by the pace of recruitment to date for this trial. To have completed three full cohorts in just the first 6 months of the study is faster than we would have expected, especially for a rare disease like STS lung metastases. Since more sites have now joined the study in this quarter, we believe this should further aid in the pace of recruitment."

"Consistent with our earlier and ongoing acute myeloid leukemia trials to date, we continue to see a complete absence of cardiotoxicity in this STS trial," Mr. Klemp concluded. "We continue to emphasize this point because, even though anthracyclines are considered a cornerstone chemotherapy for many types of cancer including STS lung metastases, all currently approved anthracyclines are significantly cardiotoxic. Annamycin was designed to overcome this problem and we believe it has the potential to become the first non-cardiotoxic anthracycline approved for use. This could not only reduce the risk of many current anthracycline treatment regimens, but it could also enable longer treatment periods without cardiac risk."

The summary of interim data from the first three cohorts of the study are as follows:

**First Cohort (210 mg/m$^2$):**

- Two subjects had stable disease up to 6 cycles (4.5 months) but were then discontinued due to progressive disease.
- One subject discontinued after the first cycle. The End of Study scan was performed, and stable disease was observed. However, the subject discontinued from the study because the initiation of the second cycle was delayed greater than 6 weeks from the previous dose.

**Second Cohort (270 mg/m$^2$):**

- In one subject, the scan at the end of the second cycle showed that there was a partial response (PR, >30% reduction in tumor size), and this was stable when the subject was scanned at the end of cycle 4. The subject subsequently discontinued from the study due to that subject electing to undergo surgical resection to potentially eradicate disease.
- One subject was discontinued from the study after 2 cycles after the end of cycle 2 scan revealed progressive disease.
- One subject received 1 cycle of treatment but discontinued treatment for reasons unrelated to Annamycin. The End of Study scan revealed progressive disease.

**Third Cohort (330 mg/m$^2$):**

Efficacy data for the third cohort is incomplete as not all patients have received their scans.

- One subject received 1 cycle, without exhibiting any dose-limiting toxicities. An interim, unscheduled scan revealed progressive disease and the subject was discontinued from the study.
- One subject was discontinued from the study after 2 cycles after the end of cycle 2 scan revealed progressive disease.
- One additional subject was treated, also without evidence of any dose-limiting toxicities, and CT scans are scheduled in the near term.

The statements above are based on interim data and should be considered preliminary and subject to change.

The Company has now opened enrollment in the fourth cohort of the Phase 1b portion of the study with dosing increased to 390 mg/m$^2$. Three subjects minimum (6 maximum) for this and each subsequent dosing cohort will be enrolled until a maximum tolerated dose is identified. Therefore, up to 36 subjects may be enrolled in the Phase 1b portion of the study.

Annamycin currently has Fast Track Status and Orphan Drug Designation from the U.S. Food and Drug Administration for the treatment of STS lung metastases, in addition to Orphan Drug Designation for the treatment of relapsed or refractory acute myeloid leukemia. For more information about the Phase 1b/2 study evaluating Annamycin for the treatment of STS lung metastases, please visit clinicaltrials.gov and reference identifier NCT04887298.

**Study Design**

In Phase 1b, Annamycin is administered as an intravenous (IV) infusion over 2 hours on Day 1, followed by 20 days off (1 cycle = 21 days). Subjects visit the study site every 21 days (±3 days) at which time safety monitoring, including adverse events (AEs), a physical examination, laboratory evaluations (clinical chemistry, complete blood count), vital signs, weight measurements, Eastern Cooperative Oncology Group (ECOG) performance status, and electrocardiograms (ECGs) are performed, followed by an IV infusion of study drug. Cardiac function is followed by echocardiogram (ECHO) scans at screening, at the end of the first two cycles and then every other cycle thereafter, at the end of treatment visit, and if feasible, during follow up at 6 months (±1 month) and 1 year (±1 month) after study drug discontinuation. As long as the Investigator considers that the benefits of treatment with Annamycin continue to outweigh the risks, treatment will continue every 21 days until tumor progression is observed or unacceptable toxicity occurs.

Tumor response is monitored every 6 weeks (±1 week) from Cycle 1 Day 1 during treatment, at the End of Treatment visit, and then every 3 months (±1 month) until disease progression using RECIST 1.1 criteria. Those subjects who leave the study after a maximum response is achieved and who do not start another therapy will be followed every 3 months (±1 month) for progression-free survival (PFS). If a subject receives further therapy after discontinuing from the study, they will only be followed for overall survival (OS) and if feasible, follow-up ECHO scans at 6 months (±1 month) and 1 year (±1 month) will be conducted after study drug discontinuation.

**About Annamycin**

Annamycin is the Company's next-generation anthracycline that has been shown in animal models to accumulate in the lungs at up to 30-fold the level of doxorubicin. Importantly,

Annamycin has also demonstrated a lack of cardiotoxicity in multiple human clinical trials, including ongoing trials for the treatment of acute myeloid leukemia (AML) and STS lung metastases, and the Company believes that the use of Annamycin may not face the same usage limitations imposed on doxorubicin, one of the most common currently approved anthracyclines. Annamycin is currently in development for the treatment of AML and STS lung metastases and the Company believes it may have the potential to treat a number of additional indications.

**About Moleculin Biotech, Inc.**

Moleculin Biotech, Inc. is a clinical stage pharmaceutical company focused on the development of a broad portfolio of drug candidates for the treatment of highly resistant tumors and viruses. The Company's lead program, Annamycin is a next-generation anthracycline designed to avoid multidrug resistance mechanisms with little to no cardiotoxicity. Annamycin is currently in development for the treatment of relapsed or refractory acute myeloid leukemia (AML) and soft tissue sarcoma (STS) lung metastases.

Additionally, the Company is developing 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 and other cancers, and WP1220, an analog to WP1066, for the topical treatment of cutaneous T-cell lymphoma. Moleculin is also engaged in the development of a portfolio of antimetabolites, including WP1122 for the potential treatment of COVID-19 and other viruses, as well as cancer indications including brain tumors, pancreatic and other cancers.

For more information about the Company, please visit[www.moleculin.com](http://www.moleculin.com) and connect on [Twitter](), [LinkedIn]() and [Facebook]().

**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 to demonstrate safety and efficacy in patients, and the ability of the STS lung metastases clinical trial to accelerate or continue the recruitment of patients . 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 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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[1] Comadone A., Petrelli F., Boglione A., Barni S.; 2017; 'Salvage Therapy in Advanced Adult Soft Tissue Sarcoma: A Systematic Review and Meta-Analysis of Randomized Trials'; *The Oncologist;* 22:1518–1527

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