



Plus Therapeutics Presents Data from Preclinical Study of Rhenium-186 Nanoliposome in Leptomeningeal Metastases and Plans for Further Evaluation with Upcoming Phase 1 Clinical Trial

August 19, 2021

Positive data to support FDA IND application for the clinical evaluation of Rhenium-186 Nanoliposome (^{186}RNL) targeted radiotherapy for patients with leptomeningeal metastases (LM)

Presentation outlines plans for Phase 1 dose escalation clinical trial of ^{186}RNL in LM with patient accrual planned for Q4 2021

AUSTIN, Texas, Aug. 19, 2021 (GLOBE NEWSWIRE) -- [Plus Therapeutics, Inc.](#) (Nasdaq: [PSTV](#)) (the "Company"), a clinical-stage pharmaceutical company developing innovative, targeted radiotherapeutics for rare and difficult-to-treat cancers, today presented data from a preclinical study evaluating its lead investigational drug, Rhenium-186 Nanoliposome (^{186}RNL), in the treatment of leptomeningeal metastases (LM), and presented plans for a Phase 1 clinical trial of ^{186}RNL also in LM. The data and upcoming trial plans were presented in two electronic posters (ePosters) at the Third Annual Conference on Brain Metastases hosted by the Society for Neuro-Oncology (SNO), being held virtually August 19-20, 2021.

"Leptomeningeal metastases are a fatal complication of advanced cancer and despite affecting more than 110,000 people per year in the United States alone, there remains a significant lack of effective therapies to treat this devastating disease," said Andrew J. Brenner, M.D., Ph.D., Professor of Medicine, Neurology, and Neurosurgery at The University of Texas, and presenter of both ePosters. "Given our promising clinical experience thus far using ^{186}RNL in recurrent glioblastoma, we are optimistic about the potential safety and efficacy for ^{186}RNL as a novel treatment option for other central nervous system diseases like leptomeningeal metastases and certain pediatric brain cancers."

Data from the ePoster entitled "*Preclinical safety and activity of intraventricular Rhenium-186 Nanoliposome (^{186}RNL) for leptomeningeal metastases*" demonstrated that, following five different doses of ^{186}RNL tested in non-tumor bearing rats administered with the highest doses (1.340mCi and 1.15mCi) presented minimal weight loss the first week after surgery, but gained it back in subsequent weeks and showed no overt neurological symptoms through the evaluation.

These results suggest that the maximum tolerable dose of ^{186}RNL was not reached, and given the encouraging efficacy shown in pre-clinical LM models, ^{186}RNL has the potential to provide high therapeutic doses for LM with low rates of toxicity.

Additional key findings include:

- The mean absorbed radioactivity for the ^{186}RNL -treated cohort was 1,094 Gy (+/- 218.59) and was retained at two days after injection.
- ^{186}RNL -treated rats had significantly lower luciferase relative to controls ($p=0.0286$) based on the bioluminescent imaging that was used to track tumor growth.
- Kaplan-Meier plot showed a statistically significant difference in overall survival with the ^{186}RNL -treated animals outliving the controls ($p=0.0377$).

"The novel design of ^{186}RNL prolongs CNS exposure when delivered to the brain by convection enhanced delivery and we believe it will perform similarly in the leptomeningeal spaces where cancerous cells circulate and along the membrane linings where metastases are found," stated Marc Hedrick, M.D., President and Chief Executive Officer of Plus Therapeutics. "This encouraging preclinical data from Dr. Brenner and his team supports RNL's potential in this significant unmet medical need and Plus' proposed clinical development program."

In addition, the Company presented trial design plans for its upcoming Phase 1 clinical trial as part of an ePoster entitled, "*ReSPECT™-LM: Maximum tolerated dose, safety, and efficacy of intraventricular Rhenium-186 Nanoliposome (^{186}RNL) for leptomeningeal metastases*." The multi-center, sequential cohort, open-label, dose escalation study, which will begin patient accrual in the fourth quarter of 2021, pending FDA IND approval, will evaluate the safety, tolerability, and distribution of ^{186}RNL via intrathecal infusion to the ventricle of breast and non-small cell lung cancer patients with LM after standard surgical, radiation, and/or chemotherapy treatment. The starting dose of ^{186}RNL will be 6.6 mCi in a volume of 5 mL followed by an expansion at the maximum tolerated dose to determine efficacy. The primary endpoint of the study is the incidence and severity of adverse events and dose limiting toxicities, and the secondary endpoints are the overall response rate, duration of response, progression free survival, and overall survival.

This ReSPECT™-LM Phase 1 clinical trial follows preclinical studies, in which tolerance to doses of ^{186}RNL as high as 1075 Gy was shown in rat models with LM with no observed significant toxicity and treatment led to marked reduction in tumor burden in both C6 and MDA-231 LM models.

^{186}RNL contains the rhenium-186 isotope which is a beta energy emitter with a short 2 mm average path length in tissue and favorable radiation properties, which allow high specific activity radiotherapy with limited exposure to surrounding tissues. In treating LM, whole body radiation is used as part of a palliative regimen for poor-risk patients while tumor control using focal radiation therapy to treat bulky or symptomatic areas is used for good-risk patients. These approaches carry the risk of significant side effects and have no significant effect on survival, respectively.

Copies of each poster will be made available under the Presentations tab of the Investors section of the Company's website when presentations go live at www.plustherapeutics.com.

About Leptomeningeal Metastases

Leptomeningeal Metastases (LM) are a rare but typically fatal complication of advanced cancer that affects the fluid-lined structures of the central nervous system and are diagnosed in approximately five percent of patients with metastatic cancer. With survival measured in weeks to months, novel approaches are needed that can both improve quality and quantity of life.

About Plus Therapeutics, Inc.

Plus Therapeutics (Nasdaq: PSTV) is a clinical-stage pharmaceutical company whose radiotherapeutic portfolio is concentrated on nanoliposome-encapsulated radionuclides for several cancer targets. Central to the Company's drug development is a unique nanotechnology platform designed to reformulate, deliver and commercialize multiple drugs targeting rare cancers and other diseases. The platform is designed to facilitate new delivery approaches and/or formulations of safe and effective, injectable drugs, potentially enhancing the safety, efficacy and convenience for patients and healthcare providers. More information may be found at PlusTherapeutics.com and ReSPECT-Trials.com.

Cautionary Statement Regarding Forward-Looking Statements

This press release contains statements that may be deemed "forward-looking statements" within the meaning of U.S. securities laws. All statements in this press release other than statements of historical fact are forward-looking statements. These forward-looking statements may be identified by future verbs, as well as terms such as "will," "believe," "plan," "can," "enable," "design," "intend," "potential," "expect," "estimate," "project," "prospect," "target," "focus," "anticipate," "could," "should," and similar expressions or the negatives thereof. Such statements are based upon certain assumptions and assessments made by management in light of their experience and their perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate. These statements include, without limitation, statements regarding the following: the design and potential of the Plus Therapeutics portfolio to reformulate, deliver and commercialize multiple novel, proprietary drugs targeting rare cancers and other diseases and to facilitate new delivery approaches and/or formulations of safe and effective, injectable drugs; the potential of the Company's in-licensed portfolio of investigational drugs; the Company's intent to advance its CNS oncology portfolio through the clinical development process; the ability of RNL to safely, effectively and conveniently deliver a very high dose of radiation directly into the brain tumor; anticipated benefits of strategic collaborations and license agreements, intellectual property, FDA approval process and government regulation; and the Company's anticipated milestones and events, including with respect to additional sites, enrollment, pivotal trial planning, IND process, and clinical phase plans for RNL, pipeline expansion through additional drug development candidates, and partnership discussions for RNL, DocePLUS and DoxoPLUS; and future development and/or expansion of its product candidates and therapies in its markets. The forward-looking statements included in this press release are subject to a number of risks and uncertainties that may cause actual results to differ materially from those discussed in such forward-looking statements. These risks and uncertainties include, but are not limited to: the risk that the Company is not able to successfully develop product candidates that can leverage the FDA's accelerated regulatory pathways; the early stage of the Company's product candidates and therapies, the results of its research and development activities, including uncertainties relating to the clinical trials of its product candidates and therapies; the Company's history of losses; the Company's need for, and ability to raise, additional cash or obtain other sources of funding in the immediate future; the Company's ability to: (a) obtain and maintain regulatory approvals, (b) continue as a going concern, (c) remain listed on the Nasdaq Capital Market, (d) to obtain or maintain sufficient levels of reimbursement for its tests, and (d) to repay or refinance some or all of its outstanding indebtedness; the outcome of the Company's partnering/licensing efforts; market and economic conditions; the impact of the COVID-19 pandemic on the Company and the effectiveness of the efforts it has taken or may take in the future in response thereto; and additional risks described under the heading "Risk Factors" in the Company's Securities and Exchange Commission filings, including in the Company's annual and quarterly reports. There may be events in the future that the Company is unable to predict, or over which it has no control, and its business, financial condition, results of operations and prospects may change in the future. The Company assumes no responsibility to update or revise any forward-looking statements to reflect events, trends or circumstances after the date they are made unless the Company has an obligation under U.S. federal securities laws to do so.

Investor Contact

Peter Vozzo
Westwicke/ICR
(443) 377-4767
Peter.Vozzo@westwicke.com

Media Contact

Terri Clevenger
Westwicke/ICR
(203) 856-4326
Terri.Clevenger@westwicke.com



Source: Plus Therapeutics Inc.