Shuttle Pharmaceuticals Enters into Manufacturing Agreement for Ropidoxuridine

Agreement to help advance lead clinical sensitizer drug candidate

ROCKVILLE, Md., Sept. 20, 2022 — Shuttle Pharmaceuticals Holdings, Inc. (Nasdaq: SHPH), a discovery and development stage specialty pharmaceutical company focused on improving the outcomes of cancer patients treated with radiation therapy (RT) while reducing its side effects, entered into an agreement with TCG GreenChem, Inc. to manufacture Ropidoxuridine, the Company's lead clinical sensitizer drug candidate, for use in formulating the drug product for testing in clinical trials of Ropidoxuridine and RT of cancers.

"Shuttle Pharma's platform of sensitizers offers a pipeline of product candidates designed to address the urgent clinical need and the current limitations of using 'off-label' drugs with potential new sensitizer agents," said Dr. Anatoly Dritschilo, Chief Executive Officer of Shuttle Pharmaceuticals. "Ropidoxuridine, our lead clinical sensitizer drug candidate, sensitizes rapidly growing cancer cells and selective histone deacetylase (HDAC) inhibitors, to sensitize cancer cells and stimulate the immune system. Our novel technologies will be tested in combination with radiation therapies, such as conventional X-ray and proton radiation therapies, and in combination with immune therapies."

"Today's agreement with TCG GreenChem allows us to advance our clinical research, including our proposed Phase II clinical trials, to establish the data necessary for the FDA to determine efficacy in treating brain tumors, sarcomas and pancreatic cancers, diseases that offer potential for orphan designations. For instance, the FDA has already granted approval of our application for orphan-drug designation for Ropidoxuridine for the treatment of glioblastoma. We look forward to working with TCG GreenChem to advance our clinical work

to improve outcomes for these cancer patients," Dr. Dritschilo concluded.

In conjunction with manufacturing Ropidoxuridine, TCG GreenChem will perform process research, development and optimization work for Shuttle Pharma related to Ropidoxuridine and create working standards of starting materials and intermediates to support the qualitative/quantitative analysis of the drug reaction progress, determination of impurities, total mass balance and assay yields of the reactions. Shuttle Pharma will own all intellectual property and improvements developed through the Manufacturing Agreement.

TCG GreenChem, Inc. was founded by former large pharma pharmaceutical executives with a track record in the development of hundreds of New Chemical Entities into the clinic and commercialization of several well-known pharmaceutical products for Boehringer Ingelheim Pharmaceuticals, Inc., Sepracor, Inc., and Merck & Co, Inc. Dr. Chris Senanayake, the CEO and CSO of TCG GreenChem, CSO of TCG Lifesciences Pvt Ltd., and who serves on the board of directors of Shuttle Pharma, is a pioneering scientist and business executive who recently received two 2022 Business Worldwide Magazine CEO Awards, including "Best CEO in the Pharmaceutical Industry – North America" and the "Growth Strategy CEO of the Year – USA." In addition, he has been recognized as one among the "Top 20 Dynamic CEOs of 2022" in The CEO Publication Magazine. Also, Dr. Joseph D. Armstrong, III, co-founder and COO of TCG GreenChem, and one of the recipients of the Presidential Green Challenge Award, as determined by the EPA, is on Shuttle Pharma's Scientific Advisory Board. In this capacity, Dr. Armstrong provides insight on green technologies to manufacture and formulate clinical supplies of Ropidoxuridine, to accelerate this molecule rapidly through the drug development pathway to commercialization.

Various sources have estimated that more than 800,000 patients in the US are treated with radiation therapy for their cancers. According to the American Cancer Society about 50% are treated for curative purposes and the balance for therapeutic care. The market opportunity for radiation sensitizers lies with the 400,000 patients treated for curative purposes. The number of patients being treated with RT is expected to grow by more than 22% over the next five years. Based on a rough estimate of a course of radiation sensitizing brand drug therapy (off label at this time) of $12,000 per patient-the market size would be in excess of $4.0 billion.

About TCG GreenChem

TCG GreenChem, Inc., based in Princeton South, NJ and Richmond, VA, brings the experience, technological expertise and know-how, which is required to meet the objectives of drug development and manufacturing. The TCG GreenChem Research and Development Center at Princeton South has state of the art process research labs, analytical capabilities, and cGMP Kilo Laboratories to manufacture and release API.

TCG GreenChem, Inc. in the United States is a subsidiary of TCG Lifesciences Pvt Ltd. TCG

Lifesciences is a private limited firm (formerly “Chembiotek Research International”), a leading global Contract Research and Manufacturing Services (CRAMS) and CDMO company in the area of drug discovery, development and commercialization.

About Shuttle Pharmaceuticals

Founded in 2012 by faculty members of the Georgetown University Medical Center, Shuttle Pharmaceuticals is a discovery and development stage specialty pharmaceutical company focused on improving the outcomes for cancer patients treated with radiation therapy (RT). Our mission is to improve the lives of cancer patients by developing therapies that are designed to maximize the effectiveness of RT while limiting the side effects of radiation in cancer treatment. Although RT is a proven modality for treating cancers, by developing radiation sensitizers, we aim to increase cancer cure rates, prolong patient survival and improve quality of life when used as a primary treatment or in combination with surgery, chemotherapy and immunotherapy. For more information, please visit our website at www.shuttlepharma.com.

Safe Harbor Statement

Statements in this press release about future expectations, plans and prospects, as well as any other statements regarding matters that are not historical facts, may constitute “forward-looking statements.” These statements include, but are not limited to, statements concerning the development of our company, including prospects related to our engagement of TCG GreenChem to perform contract manufacturing of Ropidoxuridine for our Phase II clinical trials. The words “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “target,” “will,” “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including factors discussed in the “Risk Factors” section of the IPO prospectus filed with the SEC. Any forward-looking statements contained in this press release speak only as of the date hereof and, except as required by federal securities laws, Shuttle Pharmaceuticals specifically disclaims any obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

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