Shuttle Pharmaceuticals Provides First Quarter 2023 Corporate Update

ROCKVILLE, Md., May 26, 2023 — Shuttle Pharmaceuticals Holdings, Inc. (Nasdaq: SHPH), a discovery and development stage specialty pharmaceutical company focused on improving outcomes for cancer patients treated with radiation therapy (RT), today provided a corporate update in connection with the filing of its Quarterly Report on Form 10-Q for the quarter ended March 31, 2023.

Recent Highlights

- Shuttle Pharma continues to execute on the necessary steps to advance Ropidoxuridine, the Company's lead clinical sensitizer drug candidate, towards the commencement of its upcoming Phase II clinical trial in brain cancer patients undergoing radiation therapy with an expectation of pre-IND application submission to the FDA by the end of the second quarter of 2023.
- Entered into agreements with TCG GreenChem, Inc. and UI Pharmaceuticals for drug manufacture and formulation development of Ropidoxuridine, the Company's lead clinical sensitizer drug candidate, for use in the Company's upcoming Phase II clinical trial evaluating Ropidoxuridine in combination with radiation therapy for the treatment of glioblastoma.
- Engaged Theradex Oncology, a leading clinical research organization, to help prepare for its upcoming clinical study of Ropidoxuridine.
- Entered into an agreement to lease new laboratory and office space, commencing in June 2023, to assist in furthering the development of the Company's lead drug candidates and accelerate broader diagnostic capabilities on predictive biomarkers.
- Entered a research agreement with Georgetown University focused on the evaluation of the Company's lead HDAC6 inhibitor candidate, SP-2-225, evaluating the anti-tumor

effect of the combination of SP-2-225 and RT in a syngeneic breast cancer model.
- Shuttle Pharma was awarded U.S. Patent No. 11,654,157, “Methods And Compositions For Cancer Therapies That Include Delivery Of Halogenated Thymidines And Thymidine Phosphorylase Inhibitors In Combination With Radiation,” which was issued by the U.S. Patent and Trademark Office on May 23, 2023.
- Published manuscripts discussing prostate cancer cell lines derived from African American men for precision medicine and immune responses taking place in patients after radiation therapy for cancer.
- Awarded patents in the U.S. and Hong Kong for its radiation sensitizing HDAC inhibitor technology platform.
- Appointed Dr. Bette Jacobs to its Board of Directors as an independent director.
- Rang the Nasdaq opening bell in January 2023.
- Closed on private placement of $4.3 Million of Senior Secured Convertible Note and Warrants to purchase 1.018 million shares of common stock in exchange for $4.0 million investment.
- At March 31, 2023, the Company had a working capital balance of $9 million. The Company anticipates that it has sufficient capital to fund operations into the first quarter of 2025.

“Shuttle Pharma is advancing our mission to improve the lives of cancer patients by developing therapies that are designed to maximize the effectiveness of Radiation Therapy while limiting the late effects of radiation in cancer treatment,” commented Shuttle Pharma’s Chairman and CEO, Anatoly Dritschilo, M.D. “During the first quarter, we made tangible progress advancing our pipeline, including Ropidoxuridine, our lead clinical drug candidate, which sensitizes rapidly growing cancer cells and, our various selective HDAC (histone deacetylase) inhibitors – which sensitize cancer cells and stimulate the immune system. With Ropidoxuridine, we are finalizing details to submit the final protocol details to the FDA at the end of the second quarter of 2023 with commencement of the Phase II clinical trial in brain cancer patients commencing shortly thereafter. Additionally, we are advancing pre-clinical work to support our IND-enabling studies in 2023 with a goal to submit an investigational new drug application (IND) for the selective HDAC6 inhibitor and initiation of a Phase I clinical trial in 2024. We look forward to an exciting 2023 as we advance our immuno-oncology and radio-oncology solutions.”

Radiation Therapy Sensitizer Platform

Radiation therapy is a proven modality for cancer treatment. By developing radiation sensitizers, Shuttle Pharma aims to increase cancer cure rates, prolong patient survival and improve quality of life when radiation is used as a primary treatment, or in combination with, surgery, chemotherapy and immunotherapy.

Modern oncology incorporates multi-modality strategies that use combinations of surgery,

chemo or immunotherapy, and radiation to treat cancers. Radiation therapy requires delivery and shaping of high doses of radiation energy to tumors to kill or slow the growth of cancer cells by damaging their cellular DNA. State-of-the-art technologies to deliver the radiation doses include image guided treatments with linear accelerators and particle radiation with protons. However, radiation therapy of adjacent healthy tissues can lead to injuries of normal organs. The addition of radiation sensitizers allows preferential increased killing of cancer cells.

Currently, there is only one drug on the market approved by the FDA as a radiation sensitizer. However, that drug has a host of side effects that limit its utility. Other drugs are used "off label" by radiation oncologists, but these often have additional side effects. There is an urgent need for an effective radiation sensitizer with low toxicity for use in combination with radiation therapy.

Shuttle Pharma's lead candidate, Ropidoxuridine, is an orally available prodrug, that once ingested, metabolizes into iododeoxyuridine, a pyrimidine analog, that has been recognized as a radio sensitizing agent since the 1960s. The Company is advancing its planned Phase II clinical trial of Ropidoxuridine in brain cancer patients undergoing radiation therapy for glioblastoma. Shuttle is currently preparing the Investigational New Drug application for the study with an expectation of final submission to the FDA at the end of the second quarter of 2023.

Beyond Ropidoxuridine, Shuttle is also developing a platform of HDAC inhibitors (SP-1-161, SP-2-225 and SP-1-303), with SP-2-225 being Shuttle Pharma's lead HDAC inhibitor for preclinical development. SP-2-225 has effects on the regulation of the immune system. The interactions of RT with the immune response to cancers are of great current interest, offering insight into potential mechanisms for primary site and metastatic cancer treatment. Shuttle Pharma is currently advancing drug manufacture and IND-enabling studies to enable a Phase I clinical trial in 2024.

Various sources have estimated that more than 900,000 patients are treated annually in the U.S. with radiation therapy for their cancers. About 50% are treated for curative purposes and the balance for palliative care. The market opportunity for radiation sensitizers lies with the 450,000 patients treated with curative intent. Based on a rough estimate of a course of radiation sensitizing brand drug therapy, which are used off label at this time, the potential market size is estimated to be in excess of $4.5 billion annually.

About Shuttle Pharmaceuticals

Founded in 2012 by faculty members of the Georgetown University Medical Center, Shuttle Pharma 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. 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 Shuttle Pharma's Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 15, 2023, its Quarterly Report on Form 10-Q for the quarter ended March 31, 2023, filed with the SEC on May 25, 2023, as well other SEC filings. 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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