Shuttle Pharma Expands Patent Coverage on HDAC Inhibitor Platform

ROCKVILLE, Md., Sept. 11, 2023 — 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), today announced the expansion of its patent portfolio following the issuance of a Canadian patent for its Histone Deacetylase (HDAC) inhibitor platform technology titled “Dual Function Molecules for Histone Deacetylase Inhibition and Ataxia Telangiectasia Mutated (ATM) Activation and Methods of Use Thereof.”

HDAC inhibitors have been described as “a novel class of drugs that target enzymes involved in regulation of critical cellular functions that can inhibit cancer growth and activate cellular immunity,” according to Scott Grindrod, PhD, lead inventor and Laboratory Director at Shuttle Pharmaceuticals.

The Company’s HDAC pre-clinical inhibitor platform includes:

- SP-2-225 is Shuttle Pharma’s pre-clinical Class IIb selective HDAC inhibitor that affects histone deacetylase HDAC6. SP-2-225 has effects on the regulation of the immune system. The interactions of radiation therapy with the immune response to cancers are of great current interest, offering insight into potential mechanisms for primary site and metastatic cancer treatment. For this reason, Shuttle Pharma selected SP-2-225 as the candidate lead HDAC inhibitor for preclinical development. Shuttle Pharma is advancing drug manufacture and IND-enabling studies with the goal of enabling a Phase I clinical trial in 2024. With the introduction of check-point inhibitors, CAR-T therapies and personalized medicine in cancer, regulation of the immune response following RT continues to be of significant clinical and commercial interest.
- SP-1-161 is Shuttle Pharma’s pre-clinical candidate lead HDAC inhibitor, radiation

sensitizing candidate product. This pan HDAC inhibitor initiates the mutated ataxia-telangiectasia response pathway. Using rational drug design, Shuttle Pharma discovered HDAC inhibitors and ATM activators capable of radiation sensitizing cancer cells and protecting normal cells. The candidate drug may serve as a direct chemotherapeutic agent or as a radiation sensitizer for treating cancers. In preclinical studies, SP-1-161 protected normal breast epithelial cells (184A1) following exposure to ionizing radiation while increasing sensitivity of breast cancer cells (MCF7). SP-1-161 provides this dual function in a single molecule and this molecule is differentiated from other HDAC inhibitors by treatment of cancers while protecting normal cells.

- SP-1-303 is Shuttle Pharma's pre-clinical selective Class I HDAC inhibitor that preferentially affects histone deacetylases HDAC1 and HDAC3 and is a member of the Class I HDAC family. SP-1-303 data show direct cellular toxicity in estrogen receptor (ER) positive breast cancer cells.

"We continue to expand our patent portfolio surrounding our HDAC inhibitor platform," stated Anatoly Dritschilo, M.D., CEO of Shuttle Pharmaceuticals. "We look forward to advancing our developments by providing dual function compounds that may inhibit HDAC and activate ATM to treat certain cancers, such as breast, multiple myeloma and lung, as well as neurological disorders, and immunological disorders. Our objective is to improve patient outcomes by increasing sensitivity to radiation while protecting normal tissues."

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. 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 Reports on Form 10-Q for the periods ended March 31, 2023 and June 30, 2023, filed with the SEC on May 25, 2023 and August 14, 2023, respectively, 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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