NEWS RELEASE

Lantern Pharma Announces New Data and Development Focus for LP-100 with PARP Inhibitors

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- New data supports the future development of LP-100 in combination with PARP inhibitors for earlier lines of treatment including metastatic prostate cancer and other indications where PARP inhibitors are being utilized.
- Synergistic potency was observed for LP-100 in combination with multiple PARP inhibitors and supported with in-silico analysis from billions of data points and real world patient data sets from RADR® - Lantern's AI platform for drug development.
- Lantern is exploring development of a new clinical trial in cancers with mutations in DDR (DNA Damage Response) genes such as BRCA1/2 and ATM, which will build upon the results from LP-100's prior Phase 2 trial conducted in Denmark in metastatic castration-resistant prostate cancer (mCRPC).
- In the Phase 2 clinical trial in Denmark, the median overall survival (OS) for the initial group of 9 patients was approximately 12.5 months, which is an improvement over other similar fourth-line treatment regimens for mCRPC.
- Lantern estimates that the future development of LP-100 in combination with PARP inhibitors may increase the annual potential market size of LP-100 targeted indications to between $700 million and $2 billion, while also positioning the drug candidate in multiple genomically defined DDR cancers that align with its mechanism of action.

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), a clinical-stage biopharmaceutical company using its proprietary RADR® artificial intelligence ("AI") and machine learning ("ML") platform to transform the cost, pace, and timeline of oncology drug discovery and development, today announced new data for its product candidate LP-

100 supporting the development of LP-100 in combination with the class of anticancer agents known as PARP inhibitors (PARPi).

In prostate cancer mouse xenograft studies, LP-100 demonstrated synergistic potency when used in combination with the FDA-approved PARP inhibitor Olaparib. LP-100 also demonstrated synergy with the FDA-approved PARP inhibitors Olaparib, Rucaparib, and Niraparib in ovarian cancer cell line studies. The observations from these studies are further supported by in-silico evaluation of LP-100 in combination with PARP inhibitors using Lantern's AI platform, RADR®.

"The combined anti-tumor potency of LP-100 in combination with PARP inhibitors, strongly supports the pursuit of this development pathway for LP-100," stated Panna Sharma, Lantern's President and CEO. "We also believe this development focus will enhance the potential to position LP-100 in earlier lines of therapy, while also opening the door to pursue treatment indications with larger market sizes," continued Sharma. "Exposure to LP-100 results in double-strand DNA breaks and PARP inhibitors prevent the repair of these types of breaks. We believe this mechanistic combination provides a potent and highly synergistic method to eradicate tumors."

LP-100 and PARP inhibitors act by complementary mechanisms. LP-100 acts by a synthetically lethal mechanism of action that preferentially damages DNA in cancer cells lacking nucleotide excision repair (NER) capabilities. Sensitivity to LP-100 is also higher in tumors with homologous recombination repair (HRR) deficiency, suggesting that this pathway is also involved in the repair of DNA damage from LP-100. PARP inhibitors have been shown to be effective in the treatment of tumors with HRR deficiencies. Lantern believes the simultaneous exploitation of both these mechanisms will enhance the development opportunities for LP-100, while also expanding potential market opportunities for existing PARP inhibitors.

LP-100 has previously been in a genomic signature guided Phase 2 clinical trial in Denmark where the drug candidate was used without PARP inhibitors for patients with metastatic castration-resistant prostate cancer (mCRPC). In this trial 9 patients (out of a targeted enrollment of 27) were treated and had a median overall survival (OS) of approximately 12.5 months, which is an improvement over other similar fourth-line treatment regimens for mCRPC.

"Based on these results, the synergies of LP-100 with PARPi, along with the increasingly narrow field of patients in mCRPC due to the emergence of radio-ligand based therapies, we believe that the positioning of LP-100 in an earlier and more genomically defined setting is the best use of our resources and can lead to improved patient outcomes," continued Sharma.

In conjunction with its evaluation work on LP-100 with PARP inhibitors, Lantern has been collaborating with the **Danish Cancer Society Research Center** (DCSRC) to explore the future clinical potential of LP-100 across 9 different

solid tumor types that have known deficiencies in DNA repair pathway mechanisms. This work has included an examination of the role of NER deficiency in breast, ovarian, prostate, lung, kidney, bladder, stomach, pancreatic, and esophageal cancers, with the aim of identifying the most promising patient populations for future LP-100 therapy. Lantern expects to present additional details on the results of its collaboration with DCSRC later this year.

Based on Lantern's evaluation of the synergies of LP-100 with PARP inhibitors, and the industry's development of entirely new classes of radio-ligand based therapy for mCRPC, the decision has been made to close the Phase 2 clinical trial in Denmark, to allow the focus of LP-100-directed resources on positioning the molecule for development in earlier lines of therapy with potentially larger market opportunities. Earlier line treatment indications where Lantern believes LP-100 in combination with PARPi could have potential future treatment benefits include prostate cancer indications such as HRR gene-mutated metastatic castration-resistant prostate cancer, ovarian cancer indications such as first line platinum-responsive advanced ovarian cancer, and breast cancer indications such as germline BRCA-mutated metastatic breast cancer. The total U.S. market size of these and other potential target development indications for the LP-100 and PARPi combination is estimated at between $700 million and $2 billion.

About Lantern Pharma:

Lantern Pharma (NASDAQ: LTRN) is a clinical-stage oncology-focused biopharmaceutical company leveraging its proprietary RADR® AI and machine learning platform to discover biomarker signatures that identify patients most likely to respond to its pipeline of genomically-targeted therapeutics. By targeting drugs to patients whose genomic profile identifies them as having the highest probability of benefiting from the drug, Lantern's approach represents the potential to deliver best-in-class outcomes.

Forward-looking Statements:

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include, among other things, statements relating to: future events or our future financial performance; the potential advantages of our RADR® platform in identifying drug candidates and patient populations that are likely to respond to a drug candidate; our strategic plans to advance the development of our drug candidates and antibody drug conjugate (ADC) development program; estimates regarding the development timing for our drug candidates and ADC development program; expectations and estimates regarding clinical trial timing and patient enrollment; our research and development efforts of our internal drug discovery programs and the utilization of our RADR® platform to streamline the drug development process; our intention to leverage artificial intelligence, machine learning and genomic data to streamline and transform the pace, risk and cost of oncology drug discovery and development and to identify patient populations that would likely respond to a drug candidate; estimates

regarding patient populations, potential markets and potential market sizes; sales estimates for our drug candidates and our plans to discover and develop drug candidates and to maximize their commercial potential by advancing such drug candidates ourselves or in collaboration with others. Any statements that are not statements of historical fact (including, without limitation, statements that use words such as "anticipate," "believe," "contemplate," "could," "estimate," "expect," "intend," "seek," "may," "might," "plan," "potential," "predict," "project," "target," "model," "objective," "aim," "upcoming," "should," "will," "would," or the negative of these words or other similar expressions) should be considered forward-looking statements. There are a number of important factors that could cause our actual results to differ materially from those indicated by the forward-looking statements, such as (i) the impact of the COVID-19 pandemic, (ii) the risk that our research and the research of our collaborators may not be successful, (iii) the risk that none of our product candidates has received FDA marketing approval, and we may not be able to successfully initiate, conduct, or conclude clinical testing for or obtain marketing approval for our product candidates, (iv) the risk that no drug product based on our proprietary RADR® A I platform has received FDA marketing approval or otherwise been incorporated into a commercial product, and (v) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Securities and Exchange Commission on March 10, 2022. You may access our Annual Report on Form 10-K for the year ended December 31, 2021 under the investor SEC filings tab of our website at **www.lanternpharma.com** or on the SEC's website at **www.sec.gov**. Given these risks and uncertainties, we can give no assurances that our forward-looking statements will prove to be accurate, or that any other results or events projected or contemplated by our forward-looking statements will in fact occur, and we caution investors not to place undue reliance on these statements. All forward-looking statements in this press release represent our judgment as of the date hereof, and, except as otherwise required by law, we disclaim any obligation to update any forward-looking statements to conform the statement to actual results or changes in our expectations.

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