NEWS RELEASE

Lantern Pharma Announces First Patient Enrolled in Taiwan for Phase 2 HARMONIC™ Clinical Trial of LP-300 in Never-Smoker NSCLC Patients

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- Multiple clinical trial sites across Taiwan are actively screening patients, following successful site initiation visits.
- Expansion into Taiwan is particularly significant as over 50% of lung cancer cases in Taiwan occur in never-smokers.

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), an artificial intelligence (AI) company developing targeted cancer therapies using its proprietary RADR® AI platform, today announced that the first patient has been enrolled and dosed in Taiwan for its **Phase 2 HARMONIC™ clinical trial** evaluating LP-300 in never-smoker patients with non-small cell lung cancer (NSCLC) who have progressed after receiving treatment with tyrosine kinase inhibitors (TKIs).

The enrollment of the first patient in Taiwan extends the recent **expansion of the HARMONIC™ trial into Asia**, where there is a notably higher prevalence of never-smoker NSCLC patients compared to Western populations. Taiwan represents a particularly important region for the trial, as **more than half of all new lung cancer diagnoses in Taiwan** occur in people who are classified as never-smokers. Never-smokers in the context of lung cancer have been **commonly defined, by the CDC and other health agencies**, as people who have smoked less than 100 cigarettes in their lifetime.

"The enrollment of our first patient in Taiwan marks another important milestone in the expansion of our HARMONIC™ trial," said Panna Sharma, President and CEO of Lantern Pharma. "The extremely high proportion of never-smoker lung cancer patients in Taiwan makes this region important for accelerating our enrollment with the objective of addressing a critical unmet need in a population where this disease has an outsized impact."

The scientific and clinical community is increasingly recognizing **that lung cancers in nonsmokers and never-smokers represent a distinct disease entity** with unique clinical, genomic, pathological, and biological characteristics. Lantern believes that this has particular importance for the Harmonic™ trial, as it underscores the need of targeted, precision therapy approaches for this unique patient population. Lung cancer in never-smokers constitutes one of the top 10 causes of cancer-related deaths globally, making it a crucial focus for therapeutic innovation.

The expansion into Asia follows encouraging preliminary results from the trial's initial safety lead-in cohort, which demonstrated an 86% clinical benefit rate and 43% objective response rate among the first seven patients. The HARMONIC™ trial is evaluating LP-300 in combination with carboplatin and pemetrexed in never-smoker NSCLC patients that have relapsed following treatment with TKIs.

Dr. Reggie Ewesuedo, VP of Clinical Development at Lantern Pharma commented, "The initiation of patient dosing in Taiwan demonstrates the continued momentum of our Asia expansion strategy. With active screening now occurring at multiple sites across both Japan and Taiwan, we expect to see accelerated enrollment in the trial. The enthusiasm we've seen from clinical collaborators in Taiwan reflects the significant need for new therapeutic options for never-smoker NSCLC patients in this region."

The **Phase 2 HARMONIC™ trial** is actively screening in multiple cancer centers in the US, Japan and Taiwan and is expected to enroll up to 90 patients across two treatment arms. The two treatment arms are randomized, at a ratio of 2 to 1, and will compare the co-primary endpoints of PFS (progression free survival) and OS (median overall survival) of:

- the LP-300 arm which is expected to enroll 60 patients (LP-300 which will be given in combination with the standard of care chemotherapy doublet)
- the SOC arm which is expected to enroll 30 patients (the standard of care arm will only dose patients with the chemotherapy doublet alone).

Initial results from the Phase 2 clinical trial from the lead-in patient cohort can be reviewed in an earlier press release issued by Lantern Pharma. Lantern plans to review, and share the interim data from, the Phase 2 trial for PFS and OS (co-primary endpoints) after 30 clinical events have been observed.

About LP-300

LP-300 is a disulfide small molecule and an investigational new drug candidate. It has been well characterized to have a multimodal mechanism of action directed towards tyrosine kinase receptors and cell redox enzymes. It is believed to modulate cellular redox in key signaling pathways in NSCLC and directly engage with TKI receptors via cysteine modification.

It is known that lung carcinomas in never smoker patients have a much higher percentage of mutations in certain tyrosine kinase (TK) oncogenes such as EGFR, ALK, ROS, and MET-1, contributing to tumor formation and growth, while lung carcinomas in smokers are much more likely to have growth-driver mutations in oncogenes such as RAS, and much lower percentages of mutations in TK oncogenes. Both published (**Parker 2015**) and unpublished studies have shown that LP-300 covalently binds to and/or inhibits the kinase activity of each of these TK oncogenes (EGFR, ALK, ROS, and MET-1), suggesting that a greater number of lung adenocarcinomas in never smokers, compared to smokers, could be susceptible to the inhibitory effects of LP-300.

LP-300 has been evaluated in 5 Phase 1 and 5 Phase 2 or 3 clinical trials in over 1,000 subjects. In a retrospective subgroup analysis from a prior Phase 3 trial, never smoker lung adenocarcinoma patients receiving the combination of LP-300 with cisplatin and paclitaxel chemotherapy were observed to have significant survival benefit compared to the never smoker patients receiving cisplatin and paclitaxel without LP-300.

About Lantern Pharma:

Lantern Pharma (NASDAQ: LTRN) is an AI company transforming the cost, pace, and timeline of oncology drug discovery and development. Our proprietary AI and machine learning (ML) platform, RADR®, leverages over 100 billion oncology-focused data points and a library of 200+ advanced ML algorithms to help solve billion-dollar, real-world problems in oncology drug development. By harnessing the power of AI and with input from world-class scientific advisors and collaborators, we have accelerated the development of our growing pipeline of therapies that span multiple cancer indications, including both solid tumors and blood cancers and an antibody-drug conjugate (ADC) program. On average, our newly developed drug programs have been advanced from initial AI insights to first-in-human clinical trials in 2-3 years and at approximately $1.0 - 2.5 million per program.

Our lead development programs include a Phase 2 clinical program and multiple Phase 1 clinical trials. We have also established a wholly-owned subsidiary, Starlight Therapeutics, to focus exclusively on the clinical execution of our promising therapies for CNS and brain cancers, many of which have no effective treatment options. Our AI-driven pipeline of innovative product candidates is estimated to have a combined annual market potential of over $15 billion USD and have the potential to provide life-changing therapies to hundreds of thousands of cancer patients across the world.

Please find more information at:

- Website: **www.lanternpharma.com**
- Harmonic Clinical Trial: **www.harmonictrial.com**
- LinkedIn: **https://www.linkedin.com/company/lanternpharma/**
- X: **@lanternpharma**

FORWARD LOOKING STATEMENT:

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 risk that our research and the research of our collaborators may not be successful, (ii) the risk that observations in preclinical studies and early or preliminary observations in clinical studies do not ensure that later observations, studies and development will be consistent or successful, (iii) the risk that we may not be able to secure sufficient future funding when needed and as required to advance and support our existing and planned clinical trials and operations, (iv) the risk that we may not be successful in licensing potential candidates or in completing potential partnerships and collaborations, (v) 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, (vi) the risk that no drug product based on our proprietary

RADR® AI platform has received FDA marketing approval or otherwise been incorporated into a commercial product, and (vii) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the Securities and Exchange Commission on March 18, 2024. You may access our Annual Report on Form 10-K for the year ended December 31, 2023 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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