NEWS RELEASE

Lung Cancer Patient in Lantern Pharma's Harmonic Trial Shows Durable Complete Response in Target Cancer Lesions with Survival Continuing for Nearly Two Years

2025-06-16

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), an artificial intelligence (AI) company developing targeted cancer therapies using its proprietary RADR® AI platform, today announces remarkable clinical observations for a patient in Lantern's Phase 2 HARMONIC™ clinical trial. A 70-year-old never-smoker with advanced non-small cell lung cancer (NSCLC) has achieved a durable complete response in their target cancer lesions following treatment with LP-300 in combination with standard-of-care chemotherapy. Importantly, the patient continues to show sustained survival benefits after nearly two years.

The patient, who had previously failed three lines of prior therapy including Keytruda (pembrolizumab) with chemotherapy, radiation therapy, and the EGFR inhibitor Tagrisso (osimertinib), initially demonstrated a partial response with a 57% reduction in tumor volume after completion of the HARMONIC™ lead-in cohort enrollment in Q3 of 2024. The patient subsequently demonstrated a complete response in the target cancer lesions, specifically the lung and adrenal gland lesions by Q1 of 2025. This type of complete response in the target cancer lesions is atypical for this advanced and recurrent NSCLC after multiple rounds of therapy.

"This remarkable case exemplifies several of the things we have hoped to observe with LP-300 in the HARMONIC trial," said Panna Sharma, President and CEO of Lantern Pharma. "To see a heavily pre-treated patient not only

achieve a complete response in their target cancer lesions but maintain that response with excellent quality of life is truly extraordinary. This outcome provides important confirmation of our data and AI-driven approach to drug development and gives us growing confidence as we advance toward potential future registration-enabling studies for this underserved patient population that has no approved treatment options after failing targeted kinase therapies."

Notably, the patient has shown no clinically significant adverse drug reactions or dose-limiting toxicities (DLTs) over 21 cycles of treatment. By February 2025, imaging showed continued complete response in the primary target lesions with only scar tissue remaining at the site of the lung cancer lesions, and the disappearance of the adrenal gland cancer lesion, demonstrating the profound and durable nature of the therapeutic response.

Growing Global Cancer Type with No Approved Options After Kinase Therapy Failure

The proportion of never-smoking patients with non-small cell lung cancer (NSCLC) has been significantly increasing globally over the past 30 years, from 15% in the 1970s to 33% in the 2000s. Lung cancer in never smokers is the fifth leading cause of cancer-related deaths globally, according to the International Agency for Research on Cancer (IARC). Never-smokers represent a distinct subset of lung cancer patients[1] with unique genetic profiles and limited treatment options, estimated to represent a $4+ billion annual market opportunity globally. The HARMONIC™ trial is evaluating LP-300, advanced with Lantern's proprietary RADR® AI platform, in combination with pemetrexed and carboplatin in never-smokers with advanced NSCLC who have progressed after treatment with tyrosine kinase inhibitors (TKIs).

Exceptional Clinical Observations in a Challenging Patient Population With Significant Unmet Needs

This case represents a particularly significant observation given the patient's extensive treatment history, including with both immuno-oncology agents and targeted kinase therapies, and the challenging nature of advanced NSCLC in non-responsive never-smokers. The sustained response over nearly two years, combined with excellent tolerability, underscore LP-300's potential to be a transformative treatment option for this underserved patient population and is demonstrative of the mechanistic rationale for this drug-candidate.

"The sustained response we're observing in this patient, particularly after three lines of prior standard of care treatments, is remarkable and provides strong support for LP-300's therapeutic potential," said Dr. Reggie Ewesuedo, Vice President of Clinical Development at Lantern Pharma. "The fact that this patient has tolerated 21 cycles of treatment without clinically significant adverse drug reactions and has achieved meaningful durable response reinforces our confidence in the promise of this drug-candidate in this patient population."

About Lantern Pharma's HARMONIC™ Trial

The HARMONIC™ clinical trial is a Phase 2 study (NCT05456256) evaluating LP-300 in combination with standard

chemotherapy (pemetrexed/carboplatin) for never-smokers with advanced lung adenocarcinoma who have experienced progression or intolerance to prior tyrosine kinase inhibitor (TKI) therapy. The trial is designed to assess whether LP-300, when added to chemotherapy, improves progression-free survival (PFS) and overall survival (OS) compared to the current standard-of-care chemotherapy doublet alone.

The multicenter, open-label, randomized study has planned enrollment of approximately 90 patients across sites in the United States, Japan, and Taiwan. The trial compares LP-300 in combination with standard-of-care chemotherapy versus chemotherapy alone in a 2:1 randomization, with co-primary endpoints of progression-free survival (PFS) and overall survival (OS).

Upcoming Milestones and Clinical Development

Lantern expects to continue reporting clinical updates from the HARMONIC trial throughout 2025 as enrollment progresses across multiple sites. The company anticipates providing an additional data update from the randomized expansion phase in the second half of 2025.

The never-smoker NSCLC population represents a significant and growing unmet medical need, with no therapies specifically approved for this patient subset. Approximately 15-20% of all lung cancer patients in the U.S. are never-smokers, with significantly higher rates in Asian populations, where up to 50% of new lung cancer diagnoses occur in never-smokers.

About LP-300

LP-300 was advanced with Lantern's proprietary RADR® AI platform to aid in the confirmation of combination synergies and the proposed mechanism of action. The lead-in cohort of the Phase 2 HARMONIC trial demonstrated an initial 86% clinical benefit rate and 43% objective response rate, leading to the current randomized expansion phase.[2]

About Lantern Pharma

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

Please find more information at:

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

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 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, (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 our research and the research of our collaborators may not be successful, (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, 2024, filed with the Securities and Exchange Commission on March 27, 2025. You may access our Annual Report on Form 10-K for the year ended December 31, 2024 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.

---

[1] Lung cancer in patients who have never smoked — an emerging disease - Jan 9, 2024 — **https://www.nature.com/articles/s41571-023-00844-0**

[2] LP-300 Plus Chemo Yields Early Efficacy Results in Never-Smokers With NSCLC - Aug 5, 2024 — **https://www.onclive.com/view/lp-300-plus-chemo-yields-early-efficacy-results-in-never-smokers-with-nsclc**

Investor Contact

Investor Relations

ir@lanternpharma.com

+1 972-277-1136

Source: Lantern Pharma Inc.