NEWS RELEASE

Emerging Data for Lantern Pharma's Investigational Drug LP-300 Demonstrates 8.3-Month Median Progression-Free Survival in Patients with EGFR L858R Lung Cancer After Targeted Therapy Failure — With No Added Toxicity

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- Lantern Pharma Schedules Type C Meeting with the FDA to Advance HARMONIC™ Protocol Amendments Targeting This High-Need Population, Reflecting LP-300's Novel Mechanism of Action and the Rapidly Evolving Post-TKI Standard of Care
- Among L858R patients in HARMONIC™, those who completed 6 doses or cycles of LP-300 demonstrated a higher median PFS than the overall L858R cohort and those patients that had only 4 doses or cycles of LP-300

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), an AI-driven precision oncology company, today announced it has scheduled a Type C meeting with the U.S. Food and Drug Administration (FDA) for mid-May 2026 to seek feedback on proposed protocol amendments to its ongoing Phase 2 HARMONIC™ clinical trial evaluating LP-300. The amendments are grounded in emerging clinical data demonstrating a meaningful and consistent progression-free survival signal in patients with EGFR Exon 21 L858R-mutant non-small cell lung cancer (NSCLC) who have progressed following any TKI-based treatment (including osimertinib) — a population carrying a particularly poor prognosis and limited remaining therapeutic options. Lantern is seeking the FDA's scientific guidance to sharpen the trial design around the patients most likely to benefit, and to pursue the most rigorous and efficient development path possible.

Emerging Clinical Evidence: A Consistent and Coherent Signal

Preliminary clinical data from the HARMONIC™ trial, with a data cutoff of April 13, 2026, have revealed a **differentiated and consistent progression-free survival profile for LP-300 in patients harboring the EGFR Exon 21 L858R mutation** — accounting for approximately 40% of all EGFR-mutant NSCLC cases globally, and a subgroup with a notably inferior prognosis following frontline TKI (including osimertinib) therapy compared with Exon 19 deletion patients. Among the 16 L858R-mutant patients enrolled in HARMONIC™, LP-300 in combination with carboplatin and pemetrexed demonstrated:

8.3 mo	86% / 43%	HR 0.37	~$4B+
mPFS — L858R Patients n=16 | 95% CI: 6.2–NC	Clinical Benefit Rate / ORR Safety Lead-In Cohort (US)	L858R vs. Non-L858R 95% CI: 0.15–0.89	Annual Market Opportunity L858R-enriched never-smoker NSCLC

These outcomes were observed in patients who had already progressed on tyrosine kinase inhibitor (TKI) therapy — a setting where prognosis is particularly challenging and where treatment tolerability is a critical consideration. The upper confidence interval for mPFS (median progression-free survival) for the L858R patient group remains not calculable at the time of analysis, suggesting that a meaningful proportion of patients may be achieving disease control that extends substantially beyond the reported median. The Hazard Ratio (HR) observations to date for the L858R patient group are also encouraging.

Independent Statistical Signal: Multivariable Analysis

To assess whether the emerging L858R efficacy signal might be explained by other patient characteristics, a multivariable Cox regression analysis was conducted incorporating race, gender, and TP53 mutation status. **The L858R mutation remained a statistically significant independent predictor of progression-free survival across all models tested:**

- After adjusting for race and gender: HR 0.36 (95% CI: 0.15–0.90, p=0.028) — no significant associations were observed for race or gender alone
- After incorporating TP53 mutation status: HR 0.23 (95% CI: 0.06–0.91, p=0.036) — L858R effect remained significant

These analyses are exploratory and based on a small patient cohort. Lantern plans to support these findings with additional data from the ongoing HARMONIC™ trial as enrollment and patient monitoring continues.

Durable Clinical Benefit: Depth and Persistence of Response

Beyond the overall L858R progression-free survival signal, exploratory analyses from the HARMONIC™ trial reveal several findings that further support the depth and durability of LP-300's activity in this patient population.

Dose-Duration Signal: More Cycles, Better Outcomes

Among L858R patients in HARMONIC™, those who completed 6 doses or cycles of LP-300 demonstrated a higher median PFS than the overall L858R

cohort:

- L858R patients completing 6 cycles of LP-300 showed a mPFS = 8.9 months (n=9, 3 patients had not yet progressed at the time of analysis)
- Comparable safety profiles were observed across patients receiving 4 or 6 cycles, with no evidence of increased adverse events with longer treatment duration

This dose-duration trend is consistent with LP-300's kinase inhibitory mechanism of action and provides supporting scientific rationale for the proposed extension of maximum treatment cycles from 6 to 8. These data are exploratory and based on small patient numbers; Lantern expects to further characterize this relationship as the trial continues.

Heavily Pretreated Patients: A Notable Signal in a Difficult Setting

Among the subset of L858R patients who had received two prior lines of systemic therapy — a particularly challenging population to treat — an encouraging preliminary signal was observed:

- L858R patients with 2 prior systemic therapies: mPFS = 13.5 months (n=5; 3 patients had not yet progressed at the time of analysis)
- One patient in this cohort achieved a durable complete response in target lesions, with survival continuing beyond two years. Notably, this patient's response deepened over time, progressing from an initial partial response to a confirmed complete response — a pattern consistent with an ongoing and evolving treatment effect.

These data represent a very small patient subset and should be interpreted with appropriate caution. Individual patient outcomes may not be representative of the broader population. These findings are hypothesis-generating and will require confirmation in larger cohorts.

Why L858R — and Why Does It Matter?

The Scientific Rationale: Why LP-300 May Be Uniquely Suited to L858R

The L858R substitution replaces leucine — a hydrophobic amino acid — with positively charged arginine, disrupting the hydrophobic interactions that normally stabilize the EGFR kinase domain in its inactive conformation. The result is a receptor that preferentially adopts the active state. Critically, however, unlike Exon 19 deletion mutants — where the shortened αC-helix locks the receptor into a stable, monomer-capable active orientation — L858R tumors still require receptor dimerization to complete oncogenic activation and transformation.

This significant mechanistic distinction represents the structural basis for L858R's unique vulnerability to dimerization interference. LP-300 is a disulfide-active small molecule whose metabolites, generated in the pericellular space, form covalent adducts with exposed cysteine residues on target proteins. The EGFR extracellular domain contains 50 cysteine residues forming 25 disulfide bonds — a structurally dense region that includes the dimerization arm through which EGFR receptors make receptor-to-receptor contact during the dimerization process. LP-300's covalent activity at this extracellular interface provides a plausible mechanistic basis for disrupting dimerization itself, independent of the intracellular ATP-binding pocket where all currently approved EGFR inhibitors act.

These observations offer a coherent scientific hypothesis for the selectivity observed in the HARMONIC™ study: L858R tumors uniquely require dimerization for activation; LP-300's covalent mechanism operates at the extracellular interface where that dimerization occurs; and the consequent attenuation of dimerization-driven signaling would be expected to selectively disadvantage L858R tumors in a manner that Exon 19 deletion tumors — which activate independently of dimerization — would not experience.

Lantern acknowledges this remains a mechanistic hypothesis requiring further experimental validation. The Company intends to incorporate mechanistic and advanced liquid biopsy studies within the amended HARMONIC™ protocol to further characterize this relationship as the trial advances.

Three Proposed Protocol Amendments

The following protocol amendments are being proposed to the FDA, each supported by clinical evidence and by the rapidly evolving treatment landscape for TKI-refractory NSCLC. Lantern is seeking FDA feedback and concurrence on these proposed amendments as part of the mid-May Type C meeting.

1. **Focus Future Trial Enrollment to EGFR Exon 21 L858R Patients.** Exploratory analysis from HARMONIC™ demonstrates that this mutation-defined subgroup derives a meaningfully greater and more consistent benefit from the LP-300 triplet regimen compared with other EGFR-mutant patients enrolled in the trial, including those with Exon 19 deletions. A multivariable Cox regression analysis confirms that L858R mutation status is an independent predictor of progression-free survival, even after adjusting for potential confounders. This

supports a biomarker-driven enrollment strategy consistent with contemporary precision oncology trial design.

2. **Convert to a Phase 2 Single-Arm Simon Two-Stage Study Design.** The rapid global adoption of more recently approved combination regimens for TKI-refractory EGFR mutant NSCLC has made continued randomization to the control arm — carboplatin and pemetrexed alone — increasingly untenable both scientifically and operationally.
3. **Increase LP-300 Treatment Cycles from 6 to 8.** Exploratory data from HARMONIC™ indicate that L858R patients completing 6 cycles of LP-300 regimen demonstrated an mPFS of 8.9 months — higher than the overall L858R cohort median — with a comparable safety profile to those completing fewer cycles. This dose-duration relationship is consistent with LP-300's kinase inhibitory mechanism of action. Historical safety data from prior LP-300 clinical trials also confirms that up to eight doses administered at the current dose level using the current dosing interval did not alter the established safety profile of the drug.

A Substantially Cleaner Tolerability Profile

LP-300 adds no new or clinically significant toxicity to the carboplatin and pemetrexed chemotherapy backbone. When the HARMONIC™ safety data to date is reviewed alongside published safety data from recently approved combination regimens in the TKI-refractory NSCLC setting, the contrast in treatment burden is clinically striking. The following comparison is based on available published data and reflects a review of LP-300's safety profile versus a reference regimen from a larger randomized trial in a comparable, though not identical, patient population (Passaro et al., Annals of Oncology, 2024).

Lantern Pharma emphasizes that cross-trial safety comparisons should be interpreted with caution given potential differences in patient populations, study design, and data collection.

The select highlights in the table below summarize pertinent safety observations (>20%) regarding Treatment-Emergent Adverse Events (TEAE) that were determined to be Treatment Related Adverse Events (TRAE). A Treatment-Emergent Adverse Event in clinical trials is an unfavorable medical occurrence that starts or worsens in intensity or frequency after the first dose of study treatment.

Adverse Event Parameter	LP-300 + Carbo/Pem (N=31)	Reference Regimen* (N=130)
Treatment-Related SAE	1 (3%)	30 (23%)
Rash (TRAE)	2 (7%)	56 (43%)
Paronychia (TRAE)	0 (0%)	47 (36%)

*Reference regimen data: Passaro A, et al. Amivantamab plus chemotherapy with and without lazertinib in EGFR-mutant advanced NSCLC after disease progression on osimertinib: primary results from the phase III MARIPOSA-2

study. Ann Oncol. 2024;35(1):77–90. Direct comparisons between trials should be made with caution given differences in patient populations, study design, and enrollment criteria.

For patients who have already navigated prior lines of therapy, treatment burden and quality of life are not secondary considerations. The ability to deliver comparable clinical activity with a substantially cleaner tolerability profile represents a meaningful point of differentiation in a therapeutic setting that has historically been associated with significant treatment-related morbidity.

Addressing a Large and Growing Unmet Need in EGFR-Mutant Lung Cancer

EGFR-mutant non-small cell lung cancer is one of the largest molecularly defined oncology markets globally, with approximately 350,000 new cases diagnosed annually worldwide. The EGFR Exon 21 L858R mutation — the subgroup demonstrating the most consistent observed benefit to date from LP-300 in HARMONIC™ — accounts for approximately 40% of all EGFR-mutant NSCLC cases, representing an estimated 90,000 to 100,000 patients per year.

The commercial significance of this population is growing. As osimertinib has become the established frontline standard of care globally, a substantial and increasing number of patients are completing first-line treatment and entering the post-TKI setting — the precise setting where HARMONIC™ data point to LP-300's greatest potential clinical activity. The L858R subgroup carries a particularly poor prognosis following osimertinib failure, and existing approved options in this setting are associated with significant tolerability challenges that may limit real-world use and patient quality of life.

The market opportunity is further amplified by geography. The L858R mutation is disproportionately represented among never-smokers, who account for 35 to 40% of all NSCLC cases in Asia compared with approximately 15 to 17% in the United States and Europe. Lantern is evaluating patients across clinical sites in the United States, Japan, and Taiwan, and is exploring regional and global collaboration opportunities to maximize LP-300's commercial potential across these geographies.

The treatment of never-smokers with NSCLC represents an estimated $4 billion or more in annual market opportunity. Lantern believes LP-300's emerging profile — combining a consistent mutation-selective efficacy signal with a substantially differentiated tolerability profile — positions it as a potentially meaningful treatment option for a patient population with significant unmet need.

Biological Refinement: The Never-Smoker and L858R Intersection

HARMONIC™ was originally designed to address a critically underserved population: never-smokers with TKI-

refractory NSCLC, for whom no therapy has been specifically approved. The EGFR L858R mutation is substantially enriched in never-smoker populations — particularly in Asian patient cohorts where never-smokers represent 35 to 40% of all NSCLC cases. The proposed enrollment further refines this mission; it resolves the never-smoker thesis molecularly into a more precise patient definition, concentrated on the subgroup where LP-300 appears most consistently active and beneficial.

Management Commentary

“The patients participating in HARMONIC™ are facing a serious illness with real courage, and often with few remaining options. Their willingness to take part in this research is what makes progress possible, and it is the reason we approach this work with both urgency and humility.

The emerging data in patients with the EGFR L858R mutation — an 8.3-month progression-free survival signal in a post-TKI setting, without additional toxicity burden — is an encouraging early finding. We understand that this is preliminary data in a small patient cohort, but the signal is consistent with the biology, and it warrants a focused, disciplined development path.

Our Type C meeting with the FDA is a collaborative step in that direction. We want their input, we respect their process, and our goal is straightforward — to determine whether LP-300 can make a meaningful difference for patients who are running out of options, and to get there as efficiently as we can.”

— Panna Sharma, President and Chief Executive Officer, Lantern Pharma Inc.

Collaboration and Partnership Opportunities

Lantern Pharma is actively exploring collaboration and partnering opportunities — both globally and regionally — to maximize LP-300’s commercial potential across multiple geographies. The Company’s RADR® AI platform, which integrates multi-omic biomarker data with clinical outcomes, has been instrumental in confirming and better understanding the L858R signal and continues to inform patient selection strategy and combination approaches for LP-300.

About LP-300 and the HARMONIC™ Trial

LP-300 is an investigational agent being evaluated in Lantern Pharma’s Phase 2 HARMONIC™ trial in combination with carboplatin and pemetrexed in patients with advanced NSCLC who have progressed following TKI therapy. The trial includes patients across clinical sites in the United States, Japan, and Taiwan. LP-300 has not received FDA marketing approval. All clinical data referenced in this press release are preliminary and have not been source

verified in their entirety; Data Cutoff: April 13, 2026.

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 HARMONIC™ clinical trial; LP-300's potential clinical activity and tolerability profile; the proposed FDA Type C meeting and protocol amendments; our clinical development plans; expectations and estimates regarding clinical trial timing and patient enrollment; estimates regarding patient populations, potential markets and potential market sizes; 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 emerging or preliminary observations in clinical studies do not ensure that later observations, studies and development will be consistent or successful, (iii) the risk that the FDA may not concur with the proposed HARMONIC™ protocol amendments, (iv) the risk that any clinical benefit observed to date relating to LP-300 may not be reproduced in the completed HARMONIC™ trial or in larger or confirmatory studies, (v) the risk that clinical data referenced in this press release are exploratory and preliminary, based on small patient cohorts, and may not be representative of outcomes in broader populations, (vi) the risk that cross-trial comparisons are provided for context only and should not be interpreted as direct evidence of comparative safety or efficacy, (vii) the risk that our research and the research of our collaborators may not be successful, (viii) the risk that we may not be successful in licensing our product candidates or in completing potential partnerships and collaborations, (ix) 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, and (x) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2025, filed with the Securities and Exchange Commission on March 30, 2026.

You may access our Annual Report on Form 10-K for the year ended December 31, 2025 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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