NEWS RELEASE

Lantern Pharma Reports Complete Response in Heavily Pre-Treated Lymphoma Patient with LP-284 in Phase 1 Clinical Trial

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- AI-guided, synthetic lethal therapy achieves complete metabolic response after just two cycles in patient who failed three prior state-of-the-art treatment regimens.
- Complete response in an aggressive, recurring B-cell cancer underscores how AI development can accelerate meaningful patient outcomes in global oncology therapeutic markets where billions are spent on therapies.

DALLAS--(BUSINESS WIRE)-- **Lantern Pharma Inc. (NASDAQ: LTRN)**, a clinical-stage oncology company leveraging its proprietary RADR® artificial intelligence (AI) platform to systematically transform drug discovery paradigms, today announces that a heavily pretreated patient with aggressive Grade 3 non-germinal center B-cell diffuse large B-cell lymphoma (DLBCL) achieved a complete metabolic response in the ongoing Phase 1 clinical trial of LP-284. This represents the first complete response observed with LP-284 and displays profound clinical activity in one of the most therapeutically challenging hematologic cancers.

The RADR®-driven, AI approach enables Lantern to rapidly determine mechanisms of action of any cancer focused molecule, identify biomarker-driven subpopulations and optimize combination strategies for the clinical setting.

The 41-year-old patient had previously failed three aggressive treatment regimens over 18 months over the last 15 months. These included: standard R-CHOP/Pola-R-CHP chemotherapy, CAR-T cell therapy (liso-cel), and CD3xCD20 bispecific antibody therapy (glofitamab). Following enrollment in April 2025, the patient achieved complete

metabolic response with non-avid lesions after completing just two 28-day cycles of LP-284 administered on days one, eight, and 15. This remarkable clinical outcome supports LP-284's synthetic lethal mechanism and is an initial step towards a potential new paradigm for treating refractory aggressive lymphomas and B-cell malignancies.

Paradigm-Shifting Observation of Complete Response in Therapeutically Exhausted Patient

"This extraordinary clinical observation represents a transformative moment for our computationally guided, therapeutic development paradigm," said Panna Sharma, President and CEO of Lantern Pharma. "Our RADR® platform's systematic analysis of molecular vulnerabilities enabled us to rapidly advance LP-284 from computational concept to a clinical milestone in a patient in under three years at approximately $3 million — demonstrating how AI-driven precision has the promise to fundamentally reshape pharmaceutical innovation. This complete metabolic response in a patient who had exhausted all conventional therapeutic options strongly supports our strategic thesis that computational approaches can unlock previously inaccessible therapeutic opportunities."

LP-284, a computationally optimized next-generation acylfulvene, was systematically developed with guidance from Lantern's RADR® platform to exploit synthetic lethal interactions in cancer cells harboring specific DNA damage repair deficiencies. The compound represents a fundamentally different therapeutic strategy with the potential to preferentially target malignant cells while preserving healthy tissue function — a precision approach aimed at delivering transformative clinical benefit for patients who have failed multiple prior treatment modalities.

Potential to Address a Critical Therapeutic Void in Refractory DLBCL

This patient's clinical journey exemplifies the devastating trajectory of aggressive DLBCL in the refractory setting. Despite achieving an initial complete metabolic response with CAR-T therapy (liso-cel) at day 30, the patient experienced disease progression by day 90. Subsequent treatment with the CD3xCD20 bispecific antibody glofitamab resulted in progressive disease with multifocal new lesions. At study entry on the LP-284-Phase 1 trial in April 2025, the patient presented with extensive multifocal bony lesions across thoracic and lumbar spine locations and hips — representing an extremely challenging clinical scenario.

The achievement of complete metabolic response with non-avid lesions following just two cycles of LP-284 therapy represents a potential future paradigm-shifting alternative for treating therapeutically exhausted DLBCL patients. This encouraging outcome underscores LP-284's potential to address critical gaps in the therapeutic armamentarium for patients who have failed both conventional and cutting-edge immunotherapeutic approaches.

Advancing Strategic Clinical Development and Global Expansion

The complete metabolic response achievement positions LP-284 for accelerated development pathways and strengthens Lantern's strategic position in the competitive hematologic oncology landscape. This clinical milestone provides important confirmation of the company's systematic approach to therapeutic development and creates additional opportunities for international partnership expansion and collaborative research initiatives.

Lantern's ongoing Phase 1 dose-escalation study (NCT06132503) is designed to evaluate LP-284's safety profile, optimal dosing parameters, and preliminary efficacy signals across multiple aggressive lymphoma subtypes.

The trial's systematic design enables precise evaluation of LP-284's therapeutic potential across genetically defined patient populations, with a current focus on aggressive NHL subtypes including mantle cell lymphoma and high-grade B-cell lymphomas. LP-284's multiple FDA Orphan Drug Designations position the compound for potential expedited regulatory pathways and enhanced market exclusivity frameworks.

Transforming Global Oncology Through Computational Precision

This clinical development provides important confirmation of the transformative potential of Lantern's RADR® platform, which leverages over 200 billion oncology-focused data points and 200+ machine learning algorithms to assist in systematically identifying and optimizing therapeutic opportunities. The platform's computational efficiency enabled Lantern to rapidly advance the LP-284's program into the clinic in under three years at a cost of approximately $3 million — representing striking development efficiency compared to traditional pharmaceutical paradigms.

The complete metabolic response achievement positions LP-284 to seek a future role within a global blood cancer market focused on B-cell cancer that is estimated at $4 billion annually, with DLBCL representing the largest aggressive lymphoma subtype affecting approximately 200,000 patients globally each year. The critical unmet need in refractory/relapsed settings represents a substantial commercial opportunity for innovative therapeutic approaches that can deliver meaningful clinical benefit to therapeutically exhausted patient populations.

Next Steps and Future Development

Lantern plans to continue enrollment in the Phase 1 trial while closely monitoring the responding patient and other potential future patients for durability of response and efficacy signals. The company anticipates providing additional clinical updates as the trial progresses and more patients reach evaluable timepoints.

The complete response achievement positions LP-284 for potential accelerated development pathways and creates opportunities for strategic partnerships as Lantern advances its synthetic lethal portfolio toward later-stage clinical trials.

About LP-284

LP-284 is an investigational next-generation acylfulvene designed to exploit synthetic lethal interactions in cancer cells with DNA damage repair deficiencies. Developed with guidance from Lantern's AI platform RADR®, LP-284 represents a novel therapeutic approach with potential to address critical gaps in the treatment of relapsed or refractory non-Hodgkin's lymphoma and other hematologic malignancies. The compound is currently being evaluated in a Phase 1 clinical trial (NCT06132503) to determine its safety profile, optimal dosing, and potential activity in patients with aggressive NHL subtypes who have failed standard therapies.

LP-284 has received multiple Orphan Drug Designations from the U.S. Food and Drug Administration, including designations for mantle cell lymphoma and high-grade B-cell lymphomas, recognizing its potential to address significant unmet medical needs in rare cancer populations.

About Lantern Pharma

Lantern Pharma (NASDAQ: LTRN) is an AI-driven biotechnology company focused on accelerating and optimizing the discovery, development, and commercialization of cancer therapies. Its proprietary RADR® platform leverages artificial intelligence and machine learning with the aim of uncovering novel therapeutic opportunities, accelerating drug development timelines, and improving patient outcomes. The company's approach combines advanced computational biology with traditional pharmaceutical development to transform how cancer drugs are discovered and developed.

For more information, visit:

- Website: **www.lanternpharma.com** (**http://www.lanternpharma.com/**)
- LinkedIn: **https://www.linkedin.com/company/lanternpharma/**
- X: @lanternpharma (**https://twitter.com/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** (**http://www.lanternpharma.com/**) or on the SEC's website at **www.sec.gov** (**http://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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