NEWS RELEASE

Lantern Pharma Presents LP-284 Clinical Data at 25th LL&M Congress, Highlighting Complete Response in Therapeutically Exhausted DLBCL Patient & Therapeutic Potential in Advanced B-Cell Cancers.

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- AI-advanced drug candidate achieves complete metabolic response after two cycles in patient who failed CAR-T and bispecific antibody therapies, validating LP-284's mechanism of action.
- A novel differentiated synthetic lethal mechanism targeting DNA repair deficiencies via transcription-coupled nucleotide excision repair (TC-NER), enabling activity regardless of TP53 mutation status or surface antigen expression while overcoming BTK inhibitor and proteasome inhibitor resistance and demonstrating preclinical combination synergy with approved antibody therapies.
- LP-284 addresses the post-CAR-T, post-bispecific treatment gap in both monotherapy and combination settings, targeting a $3-4 billion annual market in relapsed/refractory B-cell cancers.
- The LL&M Congress poster titled, A Phase 1 Study of LP-284 in Adult Patients with Relapsed or Refractory B-Cell Non-Hodgkin's Lymphomas and Solid Tumors (NCT06132503), generated interest from both biopharma companies and clinical investigators.

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), a clinical-stage biopharmaceutical company leveraging its proprietary RADR® artificial intelligence platform to transform oncology drug discovery and development, today announced the presentation of clinical data from its ongoing Phase 1 trial of LP-284 at the 25th Annual Lymphoma, Leukemia & Myeloma (LL&M) Congress, held October 14-17, 2025, in New York City. The

presentation featured a confirmed complete metabolic response in a 41-year-old patient with aggressive Grade 3 non-germinal center B-cell diffuse large B-cell lymphoma (DLBCL) who experienced rapid disease progression following four prior treatment regimens, including CAR-T cell therapy and bispecific antibody therapy.

The patient achieved complete metabolic response with non-avid lesions after just two 28-day cycles of LP-284, administered intravenously on days 1, 8, and 15 of each cycle. At study entry, the patient presented with extensive multifocal bony lesions following treatment failure with R-CHOP chemotherapy, radiation therapy, a CD19 CAR-T, and a CD3xCD20 bispecific antibody. This clinical outcome validates LP-284's synthetic lethal mechanism and addresses the critical gap for patients who have exhausted advanced targeted and immunotherapies.

Strategic Inflection Point: Clinical Validation Drives Partnership Momentum

"The presentation of LP-284's clinical data at the 25th Annual LL&M Congress represents an important inflection point in the development trajectory of this drug-candidate," said Panna Sharma, President and CEO of Lantern Pharma. "Achieving complete metabolic response in a patient who failed both CAR-T and bispecific antibody therapies validates our AI-driven approach towards creating novel cancer medicines at a fraction of the time and cost of traditional approaches, and addresses a critical white space in the post-immunotherapy treatment paradigm. The interest from biopharmaceutical companies and clinical investigators underscores LP-284's dual strategic potential: as a monotherapy for the growing post-CAR-T, post-bispecific patient population, and as a combination partner with existing FDA-approved agents where we've demonstrated compelling preclinical synergy with rituximab.”

Strategic Value Proposition for Partnerships

Lantern believes that LP-284's profile presents compelling partnership opportunities for biopharmaceutical companies seeking to expand their hematology franchises:

- Addresses post-immunotherapy treatment gap with novel synthetic lethal mechanism distinct from current standards of care,
- Demonstrated preclinical synergy with rituximab in high-grade B-cell lymphoma models, supporting combination therapy development,
- Favorable early safety profile with primarily Grade 1-2 adverse events,
- Efficacy unaffected by TP53 mutation or lymphoma surface antigen expression—key resistance mechanisms limiting current therapies
- Multiple FDA Orphan Drug Designations including in Mantle Cell Lymphoma and High-Grade B-Cell Lymphoma providing regulatory pathway advantages and commercial exclusivity
- Strong IP position with composition of matter patents through 2039 across major markets including US, EU,

Japan, India, and Mexico
- Rapid clinical validation and extension enabled by AI-driven development

These attributes position LP-284 as both a standalone asset for patients who have exhausted CAR-T and bispecific antibody options, and as a potential combination agent to enhance efficacy and duration of response with existing approved therapies.

Addressing Critical Market Need in Post-Immunotherapy Setting

DLBCL represents the most common aggressive non-Hodgkin's lymphoma subtype, with approximately 200,000 new cases diagnosed globally each year. While initial treatment achieves remission in many patients, those who relapse after advanced immunotherapies face extremely poor prognoses with median survival often measured in months and limited therapeutic alternatives.

The patient featured in the LL&M Congress presentation exemplifies this devastating trajectory: despite achieving initial complete metabolic response with CAR-T therapy at day 30, disease progression occurred by day 90, followed by progressive disease with new lesions after bispecific antibody treatment. With an estimated 40,000 DLBCL patients annually progressing post-CAR-T in the US and EU alone, and average post-relapse treatment costs exceeding $500,000 per patient, LP-284's off-the-shelf administration and demonstrated activity in this setting could address both clinical and economic burdens commonplace in aggressive blood cancers.

Advancing Development and Strategic Collaborations

Lantern's ongoing Phase 1a dose-escalation study (NCT06132503) continues to evaluate LP-284's safety profile and preliminary efficacy in patients with relapsed or refractory B-cell non-Hodgkin's lymphomas and solid tumors. Initial data demonstrate LP-284 is well tolerated with primarily Grade 1-2 adverse events and validation of the mechanism of action.

Conversations initiated at the LL&M Congress with biopharmaceutical companies and clinical investigators focus on LP-284's potential in combination regimens with FDA-approved agents, particularly bispecific antibodies and monoclonal antibodies. These discussions leverage Lantern's RADR® platform analysis, which has identified synergistic combination opportunities supported by published preclinical data demonstrating LP-284's synergy with rituximab.

Near-Term Development Milestones & Potential for Expansion of Indication

- Patient follow-up assessment with response durability data expected by year-end 2025
- Ongoing partnership discussions for combination therapy trial development

- Additional clinical site activation to accelerate enrollment and expand geographic reach

LP-284's demonstrated selective B-cell depletion activity extends its potential beyond oncology applications. Lantern is advancing preclinical programs targeting autoimmune and inflammatory conditions, representing substantial additional market opportunities in indications focused on inflammation and immune conditions.

Building on Strategic Momentum

This announcement follows the company's July 2025 disclosure of European Patent Office allowance for LP-284's composition of matter patent, strengthening global IP protection through early 2039. The expanding international patent portfolio, combined with validated clinical activity and growing partnership interest, positions LP-284 for accelerated development pathways and strategic collaborations that could enhance both development efficiency and commercial potential.

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 through Lantern's RADR® AI platform, LP-284 induces DNA lesions primarily repaired by transcription-coupled nucleotide excision repair (TC-NER), creating a distinct anti-tumor profile. The compound's efficacy remains unaffected by TP53 mutation or lymphoma surface antigen expression, and preclinical studies demonstrate synergistic activity with rituximab and the ability to overcome ibrutinib resistance. LP-284 is currently in Phase 1 evaluation (NCT06132503) and has received multiple FDA Orphan Drug Designations for mantle cell lymphoma and high-grade B-cell lymphomas.

About the 25th Annual Lymphoma, Leukemia & Myeloma Congress

The Lymphoma, Leukemia & Myeloma Congress is a globally recognized medical education meeting focused exclusively on hematologic malignancies. For 25 years, the Congress has convened international experts to share evidence-based strategies and new drug data. The 2025 Congress, held October 14-17 at the Sheraton New York Times Square Hotel, featured over 75 expert faculty. For more information, visit **www.hmpglobalevents.com/llmcongress**.

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 to uncover novel therapeutic opportunities, accelerate drug development timelines, and improve patient outcomes.

For more information, visit:

- Website: **www.lanternpharma.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 **http://www.lanternpharma.com/** or on the SEC's website at **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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