NEWS RELEASE

Lantern Pharma Highlights Promising Preclinical Results of LP-184's Synergy with Checkpoint Inhibitors & Sensitizing Tumors That are Non-Responsive to Anti-PD1 Therapy in Collaboration with MD Anderson at Immuno-Oncology Summit 2024

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DALLAS--(BUSINESS WIRE)-- Lantern Pharma (NASDAQ: LTRN), a clinical-stage biopharmaceutical company leveraging artificial intelligence (AI) and machine learning to transform the cost, pace, and timeline of oncology drug discovery and development, today announced a significant advancement demonstrating the preclinical synergy of LP-184 with checkpoint inhibitors and the ability of LP-184 to resensitize tumors that have become non-responsive to Anti-PD1 therapies. The company will be presenting preliminary data from the recent work done in conjunction with Drs. Yong Du and **Shiaw-Yih (Phoebus) Lin** at MD Anderson at **The Immuno-Oncology Summit 2024** in Philadelphia.

The data will be presented in the form of poster entitled, **LP-184, a Novel Acylfulvene, Sensitizes Immuno-Refractory Triple Negative Breast Cancers (TNBCs) To Anti-PD1 Therapy by Affecting the Tumor Microenvironment**, (assigned Poster # P17). The poster highlights the following key points:

- LP-184 seems to potentiate anti-PD1 response in a mouse model of TNBC that is non-hypermutated and resistant to immunotherapy in the absence of LP-184.
- LP-184 can potentially transform immunologically "cold" tumors (non-responsive to IO therapies) into "hot"

tumors (responsive to IO therapies) by modulating T cell activity in the tumor microenvironment and inducing a replication stress response defect.[1]

- LP-184 seems to reshape the tumor microenvironment (TME) by significantly reducing the amount of M2 macrophages – which are associated with tumor drug resistance, tumor cell proliferation and are involved in helping the tumor cells escape immune cell death[2].
- LP-184 combined with an anti-PD1 agent elicited a greater anti-tumor response than monotherapies in mouse TNBC tumors that are non-hypermutated and resistant to immune checkpoint inhibitors

LP-184 is being investigated in an ongoing first-in-human Phase 1 trial (**NCT05933265**) in advanced recurrent solid tumors to establish a maximum tolerated dose and assess its overall safety and suitability in more targeted cancer indications, including TNBC.

Immunotherapy with checkpoint inhibitors (CPI) account for nearly $48 billion in sales annually according to Grand View Research and has profoundly changed the landscape of treatment in oncology since their introduction by providing outstanding durable responses and potential long-term remission in a significant proportion of cancer patients.[3] Treatments are now approved for more than thirty cancer indications including melanoma, lung, colon, renal, urothelial, gastric, liver, lymphoma, head and neck but only a minority of patients benefit (10% to 50% depending on the stage and site of the tumor) and often patients will be non-responsive to CPI.

"Our drug-candidate, LP-184 has shown very promising preclinical evidence supporting its role in immuno-oncology to help patients improve response and durability of response to IO therapies. This work in collaboration with MD-Anderson supports our initial AI-driven hypothesis regarding the role of LP-184 to synergize with PD1 and PDL1 drugs and potentially improve the lives of a greater number of cancer patients globally. We look forward to developing combination drug studies and clinical trials with LP-184 and checkpoint inhibitors," said Lantern Chief Scientific Officer, Kishor Bhatia, PhD, FRCP.

The entirety of the data and poster to be presented at **The Immuno-Oncology Summit 2024** in Philadelphia will be available on the **Lantern website** after 6pm Eastern today, August 7th 2024.

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 60 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**
- 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 our research and the research of our collaborators may not be successful, (ii) the risk that promising observations in preclinical studies do not ensure that later studies and development will be successful, (iii) the risk that we may not be successful in licensing potential candidates or in completing potential partnerships and collaborations, (iv) 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, (v) 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 (vi) 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.

[1] McGrail DJ, Pilié PG, Dai H, Lam TNA, Liang Y, Voorwerk L, Kok M, Zhang XH, Rosen JM, Heimberger AB, Peterson CB, Jonasch E, Lin SY **Replication stress response defects are associated with response to immune checkpoint blockade in nonhypermutated cancers.** Sci Transl Med. 2021 Oct 27;13(617):eabe6201. doi: 10.1126/scitranslmed.abe6201

[2] Wang, S., Wang, J., Chen, Z. et al. Targeting M2-like tumor-associated macrophages is a potential therapeutic approach to overcome antitumor drug resistance. npj Precis. Onc. 8, 31 (2024). **https://doi.org/10.1038/s41698-024-00522-z**

[3] C.L. Gerard, J. Delyon, A. Wicky, K. Homicsko, Michel A. Cuendet, O. Michielin, Turning tumors from cold to inflamed to improve immunotherapy response. Cancer Treatment Reviews, Volume 101, (2021). 102227, **https://doi.org/10.1016/j.ctrv.2021.102227**.

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Investor Relations
mailto: **ir@lanternpharma.com**
ph: (972) 277-1136

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