NEWS RELEASE

Lantern Pharma Develops Top-Ranked AI Algorithms to Predict the Blood-Brain-Barrier Permeability of Any Compound

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- The Blood-Brain-Barrier (BBB) prevents 98% of drugs from entering the brain and is a major limiting factor in the development of brain and central nervous system (CNS) drugs.
- Lantern's AI algorithms for predicting BBB permeability have 89-92% accuracy, have been optimized to rapidly generate predictions in around one minute, and are highly scalable to screen thousands of compounds simultaneously.
- The Therapeutic Data Commons, an evaluator of therapeutic-focused AI algorithms, has ranked Lantern's four AI BBB permeability prediction algorithms as **the top four best performing BBB prediction algorithms**.
- The BBB permeability prediction AI algorithms are fully integrated into Lantern's AI platform RADR® and are being made available to Lantern's wholly-owned subsidiary, Starlight Therapeutics, to further advance its brain and CNS cancer drug programs.

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), a clinical-stage biopharmaceutical company using its proprietary RADR® artificial intelligence ("AI") and machine learning ("ML") platform to transform the cost, pace, and timeline of oncology drug discovery and development, today announced that it has developed highly-accurate and industry-leading AI algorithms to predict the ability of a drug or compound to pass the blood-brain-barrier (BBB), a highly selective border that can prevent drugs from entering brain tissues. The BBB prevents an estimated 98% of drugs from entering the brain, which presents a major hurdle for developing drugs to treat brain and central nervous system (CNS) cancers. Lantern's AI BBB permeability prediction algorithms have a prediction accuracy of

89-92% and represent a rapid and cost-effective way to screen drugs or compounds to determine if they cross the BBB, which can accelerate the development of drug candidates for brain and CNS cancer patients.

“Lantern’s new BBB prediction module is a major development for our AI RADR® platform and continues to demonstrate how Lantern is applying AI to advance, de-risk, and significantly reduce costs in oncology drug discovery,“ stated Panna Sharma, Lantern’s CEO and President. “Biopharma companies can spend millions of dollars annually on intensive wet-lab experiments to attempt to validate whether a drug passes the BBB. Our AI/ML approach offers a rapid and highly-accurate alternative for predicting a drug’s BBB permeability, which will not only advance our drug development pipeline, but will also facilitate opportunities for new high-value business development collaborations with other biopharma companies to develop brain and CNS drugs,” continued Sharma.

The highly accurate AI BBB permeability prediction algorithms use a combination of proprietary automated feature selection methods along with specialized hyper parameter optimization that integrates algorithms using an ensemble approach to quickly provide a compound’s BBB permeability range. This approach allows for high throughput and ultra-fast BBB permeability analysis compared to traditional discovery and evaluation methods.

Lantern’s AI BBB permeability prediction algorithms were evaluated and scored in the **BBB drug prediction challenge** conducted by **Therapeutics Data Commons (TDC)**, a coordinated initiative to evaluate AI capabilities across therapeutic modalities and stages of discovery. This challenge evaluates and scores how AI/ML algorithms perform in predicting the BBB permeability across 1,975 compounds whose BBB permeability is known. **All four of Lantern’s AI/ML BBB permeability prediction algorithms were the top-performing algorithms evaluated by TDC** and had high accuracy prediction percentages ranging from 89-92% and high overall performance scores ranging from 0.93-0.96 (out of 1). Lantern expects to continue advancing its AI/ML BBB permeability prediction algorithms to further increase their accuracy, performance, and functionality.

Lantern’s AI BBB permeability prediction algorithms have been fully integrated into RADR® as a BBB permeability prediction module and continue to expand the diverse capabilities and functionality of RADR®. Additionally, the RADR® BBB permeability prediction module is being made available to the Company’s wholly-owned subsidiary **Starlight Therapeutics**, to advance their pipeline of brain and CNS cancer indications and will be leveraged to establish additional RADR® focused biopharma collaborations for brain and CNS drug discovery.

In addition to providing value for future biopharma collaborations, the RADR® BBB permeability prediction module will, more importantly, help to advance opportunities for the discovery and development of new drug candidates for the hundreds of thousands of brain and CNS cancer patients who have a large and unmet need for new and effective cancer therapies.

About Lantern Pharma:

Lantern Pharma (NASDAQ: LTRN) is a clinical-stage oncology-focused biopharmaceutical company leveraging its proprietary RADR® AI and machine learning platform to discover biomarker signatures that identify patients most likely to respond to its pipeline of genomically-targeted therapeutics. By targeting drugs to patients whose genomic profile identifies them as having the highest probability of benefiting from the drug, Lantern's approach represents the potential to deliver best-in-class outcomes.

Please find more information at:

Website: **www.lanternpharma.com**

LinkedIn: **https://www.linkedin.com/company/lanternpharma/**

Twitter: **@lanternpharma**

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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 impact of the COVID-19 pandemic, (ii) the risk that our research and the research of our collaborators may not be successful, (iii) 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, (iv) 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 (v) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Securities and Exchange Commission on March 20, 2023. You may access our Annual Report on Form 10-K for the year ended December 31, 2022 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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