Fourth Quarter & Year-end 2025
Operating & Financial Results Conference Call / Webinar

March 30th, 2026
4:30 PM Eastern Time

Forward Looking Statements

This presentation 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, 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 presentation 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.

Contents

Speakers

Panna Sharma
CEO and President

David Margrave
CFO

2025 4th Quarter Highlights

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Lantern Pharma®

NASDAQ: LTRN

- ✓ **LP-300 Phase 2 HARMONIC™ Trial Progress:** Continued enrollment and patient follow-up across the United States, Japan, and Taiwan. Completion of targeted enrollment in Japan across five clinical sites including the National Cancer Center Tokyo. Preliminary data presented at the 66th Annual Meeting of the Japan Lung Cancer Society. Type C meeting package submitted to FDA in March 2026, with meeting scheduled for mid-May 2026 seeking feedback on proposed protocol amendments including focusing enrollment on EGFR exon 21 L858R patients and updating the LP-300 dosing schedule to allow for up to 8 cycles of treatment. The treatment of never-smokers with NSCLC represents an estimated $4+ billion annual market opportunity with no specifically approved therapies.

2025 4th Quarter Highlights

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Lantern Pharma®

NASDAQ: LTRN

- ✓ **LP-184 Phase 1a Completion and Expansion**: All primary endpoints achieved with **48% clinical benefit rate** at or above therapeutic dose threshold; additional positive results reported in Q4 2025 demonstrating durable disease control in heavily pre-treated advanced cancer patients. Biomarker-guided Phase 1b/2 trials planned in TNBC, NSCLC with KEAP1/STK11 mutations, and an investigator-led clinical study in Denmark in PTGR1 overexpressing bladder cancers with DNA damage repair mutations.

- ✓ **Starlight Therapeutics IND Clearance:** FDA clears IND for planned **Phase 1 pediatric CNS cancer trial** of STAR-001 in Atypical Teratoid Rhabdoid Tumor (ATRT) and other rare pediatric cancers, marking a pivotal regulatory milestone for Lantern's wholly-owned subsidiary.

2025 4th Quarter Highlights

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Lantern Pharma®

NASDAQ: LTRN

- ✓ **LP-284 Orphan Drug Designation**: LP-284 receives FDA Orphan Drug Designation for soft tissue sarcomas, adding to existing designations for mantle cell lymphoma and high-grade B-cell lymphomas. Complete metabolic response in therapeutically exhausted DLBCL patient presented at 25th LL&M Congress.

- ✓ **RADR® AI Platform Global Expansion**: Establishment of AI Center of Excellence in India to industrialize the RADR® platform and accelerate global biopharma development opportunities. Presentation at 7th Glioblastoma Drug Development Summit in Boston.

2025 4th Quarter Highlights

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Lantern Pharma®

NASDAQ: LTRN

- ✓ **withZeta.ai** — Multi-Agentic Co-Scientist Platform: Launch of withZeta.ai, a first-of-its-kind multi-agentic AI co-scientist platform designed to accelerate drug development insights and therapeutic strategies across more than 438 rare cancers. Since late December 2025, withZeta.ai has been in active demo and beta testing with over 25 biotech companies, cancer research centers, and biopharma consultants, representing a significant near-term commercialization opportunity for the Company's AI capabilities.

- ✓ Financial Position: Approximately **$10.1 million** in cash, cash equivalents, and marketable securities as of December 31, 2025.

2025 was a defining year for Lantern Pharma *as we achieved clinical validation across multiple programs while establishing the foundation for our next phase of growth. The encouraging and developing LP-300 Phase 2 HARMONIC™ observations, combined with successful Phase 1a completion for LP-184 and FDA IND clearance for our pediatric CNS cancer program through Starlight Therapeutics, represent transformational milestones that validate and strengthen our AI-driven approach to precision oncology. Our full-year results reflect disciplined execution with a 19% reduction in total operating expenses year-over-year, even as we advanced multiple clinical programs through key inflection points and introduced a highly unique multi-agentic system aimed at conquering rare cancers. As we move into 2026, we are positioned to advance multiple high-value clinical programs, expand our RADR® platform's commercial reach and revenue potential globally through our new AI Center of Excellence in India and strengthen our balance sheet.*

Summary Results of Operations

	Three Months Ended December 31,		Year Ended December 31,	
	2025	**2024**	**2025**	**2024**
Operating expenses:				
General and administrative	$ 1,457,944	$ 1,626,878	$ 6,464,371	$ 6,090,747
Research and development	2,744,818	4,269,521	11,514,123	16,125,690
Total operating expenses	4,202,762	5,896,399	17,978,494	22,216,437
Loss from operations	(4,202,762)	(5,896,399)	(17,978,494)	(22,216,437)
Interest + Other income, net	128,545	21,199	859,056	1,435,224
NET LOSS	**$** (4,074,217)	**$** (5,875,200)	**$** (17,119,438)	**$** (20,781,213)
Net loss per common share, basic and diluted	$ (0.36)	$ (0.54)	$ (1.57)	$ (1.93)

Balance Sheet Highlights & Summary

	December 31, 2025	December 31, 2024
Cash and Marketable Securities	$10,119,224	$24,013,063
Prepaid Expenses & Other Current Assets	$683,948	$1,234,566
Total Assets	$11,035,811	$25,571,792
Total Liabilities	$4,501,587	$4,384,018
Total Stockholders' Equity	$6,534,224	$21,187,774

Shares Outstanding

LANTERN PHARMA INC. (LTRN)	December 31, 2025
Common Shares Outstanding	11,254,697
Warrants	0
Options (Employees, Management and Directors)	1,296,126
Fully Diluted Shares Outstanding	**12,550,823**

Lantern's Diverse & Unique AI Driven Pipeline of Drug Programs

Lantern has 10 disclosed drug programs including the Phase 2 Harmonic™ trial

Lantern Pharma (NASDAQ: LTRN)

Program	Indication	Discovery	Preclinical	Phase 1a	Phase 1b	Phase II	Orphan Designation	Rare Pediatric Disease	Fast Track
LP-300	Non-Small Cell Lung Cancer for Never Smokers					harmonic			
LP-184	Monotherapy & Combination w/ Olaparib for TNBC								●
	Combination w/ Immune Checkpoint Inhibitors for NSCLC								
	Advanced Recurrent PTGR1-Positive Bladder Cancer				Investigator-led trial by Dr. Helle Pappot in Denmark				
LP-284	Recurrent Non-Hodgkin's Lymphomas (*Mantle cell, Double-hit lymphomas*) and Adult Soft Tissue Sarcomas						●		
ADC	Select Solid Tumors								

Starlight Therapeutics (Wholly Owned Subsidiary)

STAR-001 *(LP-184 for CNS and Brain Cancers Only)*	First Recurrent Glioblastoma in adults						●		●
	Newly Diagnosed MGMT Unmethylated Glioblastoma (investigator led trial)						●		●
	Phase 1a monotherapy including ATRT, DIPG and Medulloblastoma				FDA IND Cleared		●	●	
	Phase 1b combination select pediatric CNS cancers						●	●	

Clinical Trial – The Harmonic™ Phase 2 Trial for LP-300

A growing indication with limited treatment options

harmonic

NCT05456256

Non-Small Cell Lung Cancer

Never Smokers

90

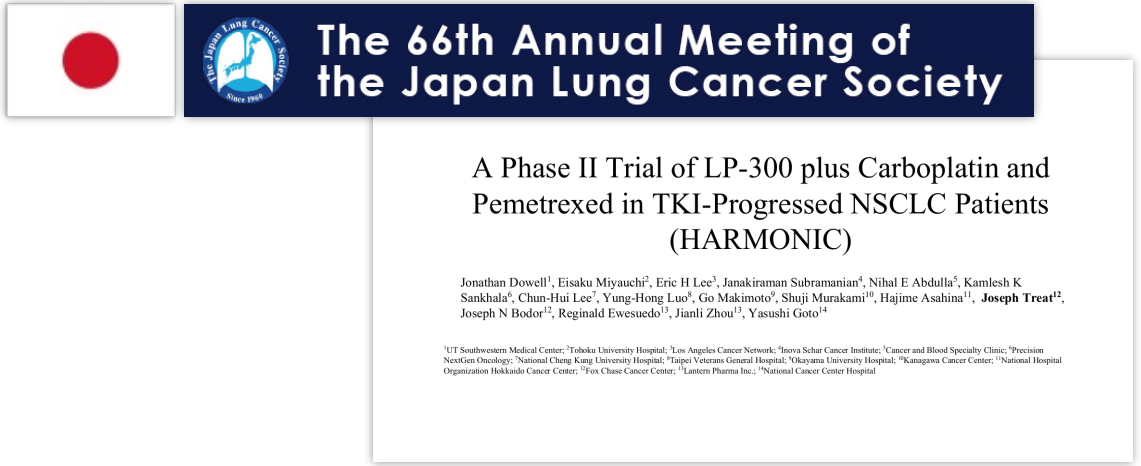
Patients

Two arm, Open-label, Randomized Trial

Multi-Site in US & Asia

Trial Highlights

- Continued enrollment and patient follow-up across the United States, Japan, and Taiwan
- Completed Japanese patient cohort enrollment ahead of schedule at multiple clinical sites including the National Cancer Center in Tokyo
- Patient showed durable complete response with survival continuing for nearly **two years**



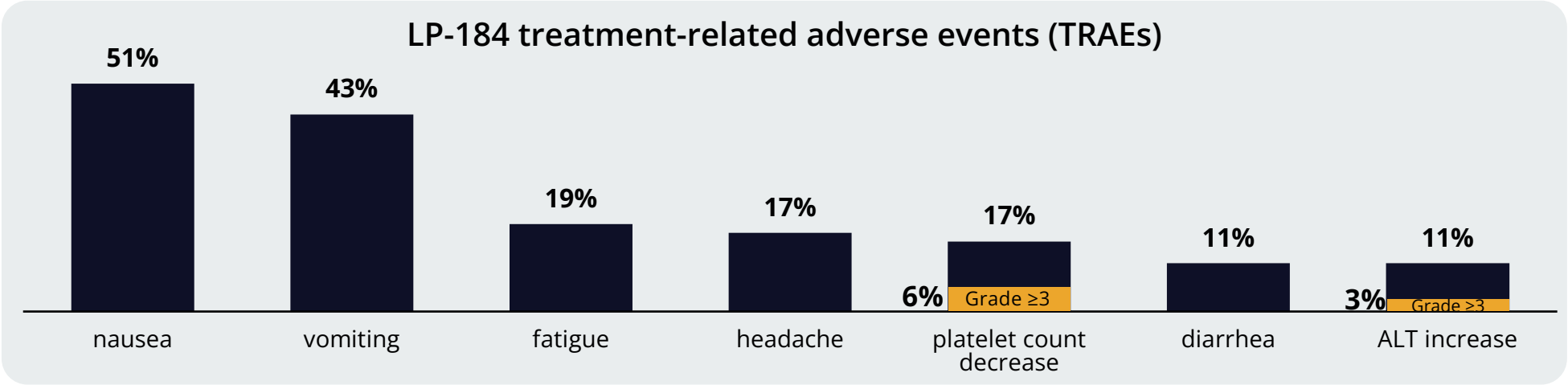
- Result presented at the 66th Annual Meeting of the Japan Lung Cancer Society by Dr. Joseph Treat of Fox Chase Cancer Center
- **Enrollment completed** in Japan

LP-184 Phase 1a Trial Achieved All Primary Endpoints with Robust Safety Profile and Promising Antitumor Activity in Multiple Advanced Solid Tumors

LP-184 exhibited a robust safety profile, with no dose-limiting toxicities in the majority of cohorts

89%

of treatment emergent adverse events (AEs) were Grade 1–2



TRIAL RESULT HIGHLIGHTS

- **Clinical benefit observed in 48%** of evaluable cancer patients at or above the therapeutic dose threshold
- **Durable clinical benefits** were observed **in hard-to-treat tumors** like glioblastoma multiforme (GBM), gastrointestinal stromal tumor (GIST) and thymic carcinoma
- PK data confirmed that therapeutic concentrations were achieved at **dose level 8 (0.25 mg/kg)** and above
- Biomarker insights highlight potential in **DDR-mutated cancers**, with marked tumor reductions in patients with CHK2, ATM, and STK11/KEAP1 alterations
- **Recommended Phase 2 dose (RP2D) established** for targeted Phase 1b/2 trials in triple-negative breast cancer (TNBC), non-small cell lung cancer (NSCLC), and bladder cancer

Planned Clinical Trials – LP-184 Phase 1b/2 Trials informed by RADR® AI Insights

Trial	Indication	Market potential	Trial Size	Trial Highlights
Phase 1b/2 Monotherapy & Combination with **Olaparib** for TNBC	 Triple Negative Breast Cancer	**$4+Bn** Annual US market potential	**~60** Patients expected to be enrolled	• **Granted FDA Fast Track Designation for monotherapy of LP-184** • **Monotherapy Trial:** Evaluating optimal dose and early efficacy of LP-184 in advanced TNBC with DNA repair gene mutations. • **Combination Trial:** Assessing safety and efficacy of LP-184 + Olaparib in advanced TNBC with BRCA mutations.
Phase 1b/2 Combination with **Immune Checkpoint Inhibitors** for NSCLC	 KEAP1 and/or STK11 mutated NSCLC	**$2+Bn** Annual US market potential	**~34** Patients expected to be enrolled	• **Submission for FDA Fast Track Designation in process** • Open-label study evaluating safety and early efficacy of LP-184 with nivolumab and ipilimumab in advanced NSCLC with KEAP1/STK11 mutations and low PD-L1.
Phase 1b/2 Investigator Led Trial in Denmark for Bladder Cancer	 Bladder cancer with TC-NER deficiency	**$0.5+Bn** Annual Global market potential	**~39** Patients expected to be enrolled	• **Investigator-sponsored trial (Dr. Helle Pappot, Rigshospitalet University, Denmark)** • Open-label study evaluating safety and early efficacy of LP-184 in advanced/metastatic urothelial carcinoma with PTGR1 positive and TC-NER/HR deficiency
Phase 1b/2a Combination with **Spironolactone** for Glioblastoma	 Recurrent Glioblastoma	**$1+Bn** Annual US market potential	**~38** Patients expected to be enrolled	• **Granted FDA Fast Track Designation and Orphan Drug Designation for monotherapy of LP-184** • First recurrent Glioblastoma • Simon 2-stage design • 2 arms; IDHm and IDHwt

Twelve FDA Designations Demonstrate our Data-driven, AI-enabled Approach to Transform Drug Development & Strengthen Commercial Value

FDA

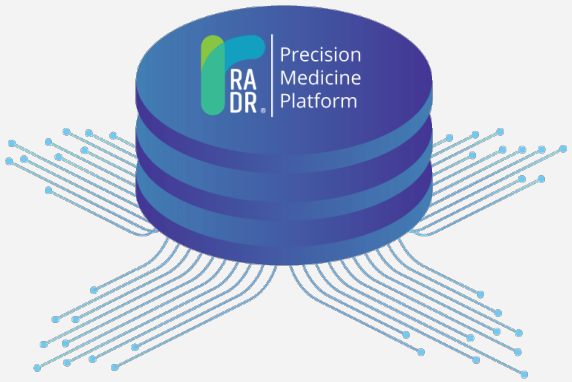
12 designations

Designation	Candidate	Indication	Date
Fast Track Designation	LP-184	Glioblastoma	Sep. 2024
	LP-184	Triple Negative Breast Cancer	Dec. 2024
Orphan Drug Designation	LP-184	Pancreatic Cancer	Aug. 2021
	LP-184	Glioblastoma	Aug. 2021
	LP-184	Malignant Glioma	Aug. 2021
	LP-284	Mantle Cell Lymphoma	Jan. 2023
	LP-284	High Grade B-Cell Lymphoma	Nov. 2023
	LP-284	Soft Tissue Sarcomas	Jan. 2026
Orphan Drug and Rare Pediatric Disease Designation	LP-184	ATRT	Jan. 2022
	LP-184	Malignant Rhabdoid Tumors	Sep. 2024
	LP-184	Rhabdomyosarcoma	Sep. 2024
	LP-184	Hepatoblastoma	Sep. 2024

RADR® Precision Medicine Platform

A proprietary integrated experimental biology, oncology-focused, machine-learning-based drug development platform

200+ Billion*



Data points from oncology focused real-world patient and clinical data and preclinical studies

80%+
Prediction Success

130K+
Patient Records

200+
Advanced ML Algorithms

8,163+
Data Sets

AI-Powered RADR® Modules for Oncology Drug Discovery and Development

- **m1** Discover mechanism of action
- **m2** Identify/prioritize disease indications or subtypes
- **m3** Determine optimal drug combinations
- **m4** Generate ML-driven biomarker signatures
- **m5** Characterize specialized attributes of a molecule
- **m6** Understand potential binding site interactions
- **m7** Discover combinations with checkpoint inhibitors
- **m8** ADC design and optimization

Lantern Strategy to Accelerate AI Platform Growth and Capabilities with Strategic Expansion of ML, AI, and Data Engineering Teams in India

Expansion Overview

- Establishing dedicated machine learning and data engineering teams in India
- 2x–3x increase in technical team size expected in the coming quarters

Strategic Benefits

- Round-the-clock development
- Reduced data infrastructure and talent costs
- Accelerated enhancement of Lantern's proprietary RADR® AI platform
- Improved scalability to support multiple drug programs and biopharma partnerships

Strategic Impact

- Strengthens competitive edge in AI-driven precision oncology
- Improves operational efficiency and financial flexibility
- Supports expanded biopharma collaborations

The Multi-Agentic Co-Scientist & AI System For Rare Cancers

with ZETA

Zeta addresses the fundamental challenge in rare cancer research and drug development where critical insights are scattered across disconnected data sources.
Our platform integrates curated databases and external sources into an agential LLM architecture, leveraging recursive reasoning loops to transform fragmented biomedical knowledge into an interconnected investigation platform.

Core Capabilities

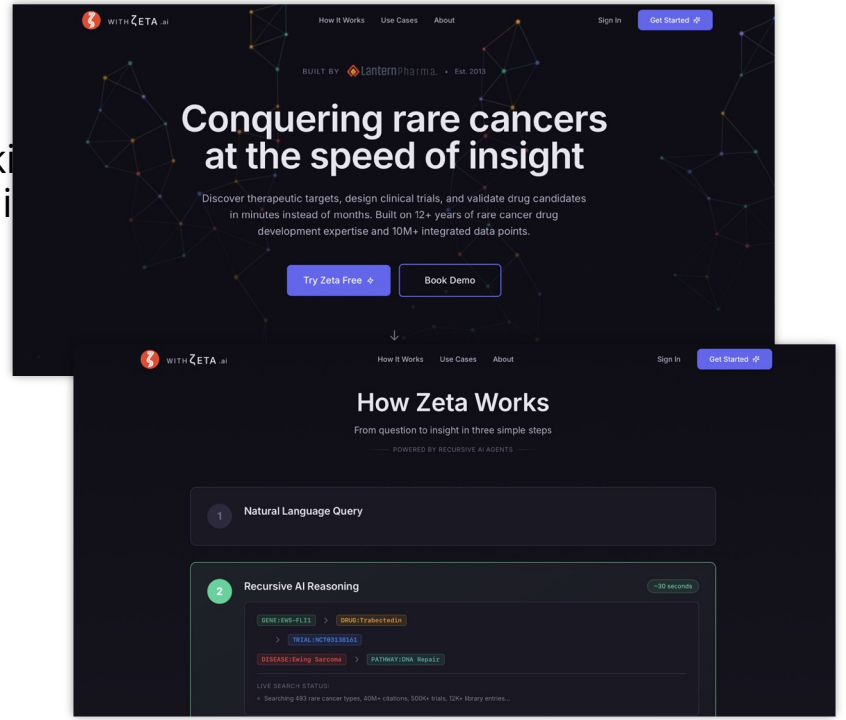
- Curated rare cancer databases and ontology
- Integrated 500k+ clinical trials, 250k+ publications, 1.2M knowledge objects
- Real-time bioinformatics and chemo informatics toolki
- Links to RADR® predictive modules (e.g., PredictBBB.ai

Industry & Business Value

- Faster timelines: weeks → minutes for insights
- Smarter decisions: enhanced oncology guidance
- Novel discovery: identify new drug connections
- Improved outcomes: faster access to treatments
- Efficiency: major cost and time savings

Strategic Impact

- Unified AI interface for complex, scattered data
- Accelerates novel therapy discovery and trial design
- Shortens drug development by months or more
- Positions Lantern as the “Perplexity for cancer research”



PredictBBB - Predict any molecule's brain permeability

Open-access AI for predicting and optimizing CNS drug's brain permeability

The Challenge

Less than **6% of molecules** cross the Blood Brain Barrier (BBB) - one of pharmaceutical development's most persistent challenges

The Solution

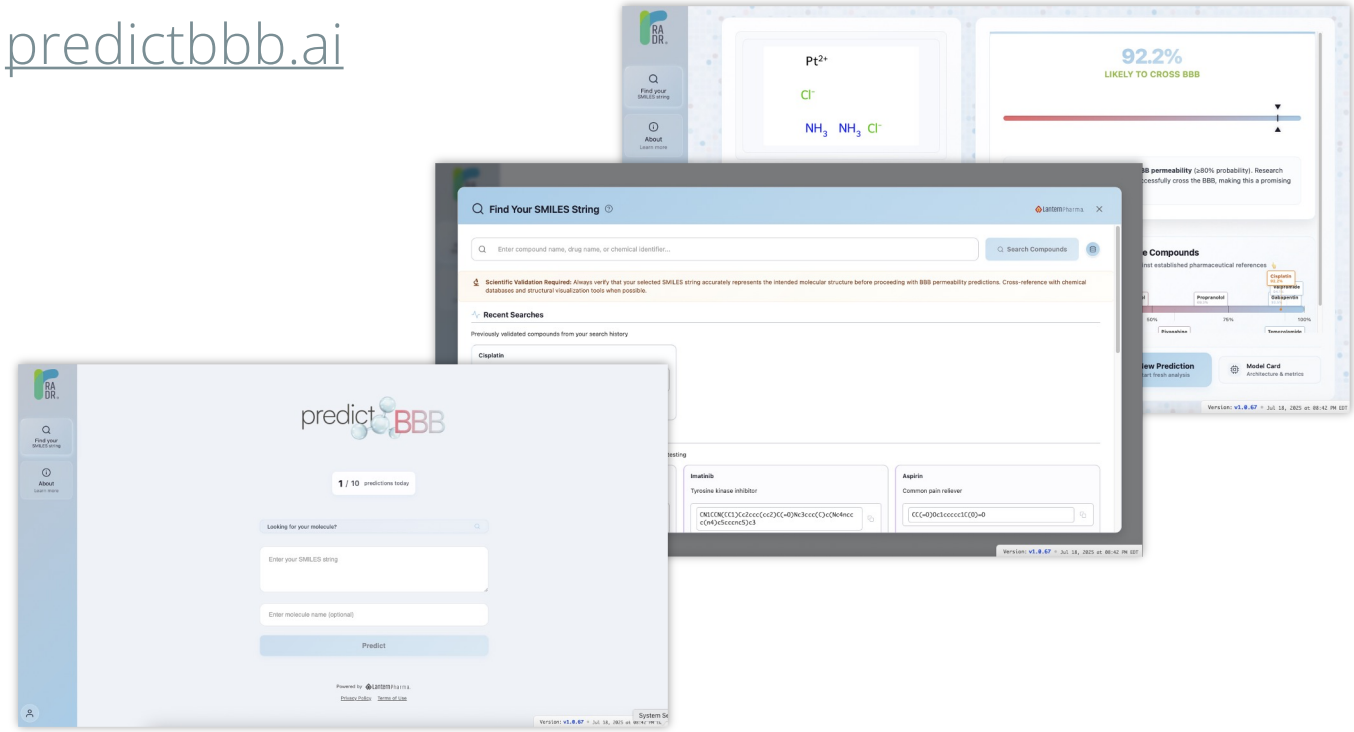
PredictBBB™ uses AI to predict whether a molecule can cross the BBB - instantly

- Built on Lantern's RADR® AI platform
- Converts molecular structure into thousands of predictive features
- Evaluates permeability using ensemble machine learning models

The Impact

- **94% prediction accuracy** on benchmark datasets
- Screens compounds **in seconds** → scalable **to 100K+ molecules**
- Enables earlier, smarter selection of CNS-ready drug candidates

predictbbb.ai



PredictBBB - Beyond BBB Prediction

Moving beyond permeability prediction to multi-dimensional molecular insight

From Prediction to Understanding

PredictBBB™ now extends beyond binary BBB prediction to provide deep molecular analysis across key dimensions of drug design

Multi-Dimensional Molecular Intelligence

Drug-likeness Analysis

Evaluate developability using established rules (Lipinski, Veber, Ghose) with CNS-specific context

Structural Analysis

Assess molecular composition, 3D shape, and structural features influencing permeability and stability

Surface Area Profiling

Map charge, lipophilicity, polarizability, and electronic distribution across the molecule

Topology Analysis

Quantify molecular connectivity, branching, and complexity through advanced graph-based descriptors

2026 Objectives

A Breakthrough Year for Lantern

TOP TEN

- Complete further analysis of Phase 1a LP-184 results; pursue Phase 1b/2a trials and investigator or grant led opportunities
- Advance enrollment for LP-284 in NHL + soft tissue sarcoma and initiate partnering discussions
- Accelerate enrollment of The Harmonic™ Trial with targeted sites and implement successful protocol amendments following Type C Meeting discussion
- Progress Starlight Therapeutics towards planned Phase 1b / 2a adult & pediatric clinical trials
- Expand RADR® AI & withZeta.ai platforms and develop additional revenue opportunities with AI for drug development
- Further ADC preclinical and IND development to support future partnership opportunities with biopharma companies
- Explore licensing and partnership opportunities with biopharma companies
- Develop combination programs for LP-184, LP-284, and LP-300 with existing approved drugs
- Expand AI Center of Excellence in India to support technology and service revenue growth
- Maintain disciplined fiscal management and pursue additional funding and grant alternatives to fund Company objectives

Lantern Pharma®

NASDAQ: LTRN

CONNECT WITH US

IR Contact:
IR@lanternpharma.com
1-972-277-1136

www.lanternpharma.com

@LanternPharma

linkedin.com/company/lanternpharma

starlight therapeutics

CONNECT WITH US

IR Contact:
IR@starlighttthera.com

www.starlightthera.com

@Starlight_Thera

linkedin.com/company/starlightthera