Second Quarter 2026
Operating & Financial Results Conference Call / Webinar

August 14th, 2026
9AM 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 and Open-Medicine AI; the planned implementation of protocol amendments and the development pathway for LP-300 in patients harboring the EGFR exon 21 L858R mutation; LP-300's potential clinical activity and tolerability profile; the anticipated initiation, design, timing, conduct, and potential of the planned Phase 1b/2 clinical trials of LP-184 (zirdafulven) in bladder cancer and in triple-negative breast cancer; the anticipated benefits of a dual-biomarker patient-selection strategy; the establishment of Open Medicine AI as a separate entity and the anticipated benefits of such separation, including its planned commercialization, funding, and potential future public emergence; our plans to pursue additional funding and estimates regarding the sufficiency of capital resources; estimates regarding patient enrollment, patient populations, potential markets and potential market sizes; 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 emerging or preliminary observations in clinical studies do not ensure that later observations, studies and development will be consistent or successful, (iii) the risk that any clinical benefit observed to date relating to LP-300 may not be reproduced in the completed HARMONIC™ trial or in larger or confirmatory studies, (iv) the risk that clinical data referenced in this presentation are exploratory and preliminary, based on small patient cohorts, and may not be representative of outcomes in broader populations, (v) the risk that cross-trial comparisons are provided for context only and should not be interpreted as direct evidence of comparative safety or efficacy, (vi) the risk that our research and the research of our collaborators may not be successful, (vii) the risk that we may not be successful in licensing our product candidates or in completing potential partnerships and collaborations, (viii) the risk that none of our product candidates has received marketing approval from the FDA, the EMA or any other regulatory authority, and we may not be able to successfully initiate, conduct, or conclude clinical testing for or obtain regulatory marketing approval for our product candidates, (ix) the risk that no drug product based on our proprietary AI platforms has received FDA, EMA or other marketing approval or otherwise been incorporated into a commercial product, (x) the risk that our AI platform commercialization efforts, including Open-Medicine AI, may not generate the anticipated revenue or achieve the expected market adoption, (xi) the risk that the separation of Open-Medicine AI may not deliver the anticipated benefits on the contemplated terms or timeline or at all, (xii) the risk that investigator-initiated clinical trials, including the EMA-cleared Phase 1b/2 trial of LP-184, may not initiate, enroll, or complete on the anticipated timeline or at all, and (xiii) 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 and in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2026. You may access our Annual Report on Form 10-K for the year ended December 31, 2025 and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2026 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

2026 2nd Quarter Highlights

1 of 4

Lantern Pharma®

NASDAQ: LTRN

OPEN MEDICINE

- ✓ **Open-Medicine AI (OMAI)** established as a separate company with board-approved commercial licensing agreements executed, operating the **multi-agentic AI co-scientist platform previously launched as withZeta.ai.** OMAI is currently wholly owned by Lantern and intends to raise capital at the OMAI level.
  A dedicated OMAI informational call is planned for mid-September 2026 to detail the market opportunity, platform roadmap, and commercial model.

2026 2nd Quarter Highlights

2 of 4

Lantern Pharma®

NASDAQ: LTRN

- ✓ **LP-300 - HARMONIC™** benefit deepens with treatment duration: Median progression-free survival of **8.9 months in EGFR exon 21 L858R patients** treated through up to six cycles, a hazard ratio of 0.37 (95% CI 0.15–0.89) favoring the L858R subgroup, a 77% clinical benefit rate, and tumor reduction in more than 70% of evaluable patients, with durable responses beyond two years — and no clinically meaningful toxicity added beyond chemotherapy.

- ✓ **Phase 2 protocol amendment** FDA-reviewed with no objections to key proposed amendments: enrollment will now be concentrated on **EGFR exon 21 L858R patients** with a single-arm design, and maximum LP-300 treatment extended from six to eight cycles. Enrollment will continue at sites in the United States and Taiwan.

2026 2nd Quarter Highlights

3 of 4

Lantern Pharma®

NASDAQ: LTRN

- ✓ **EMA clearance in bladder cancer for LP-184 (zirdafulven):** an investigator-initiated Phase 1b/2 trial of zirdafulven at Rigshospitalet in Denmark, among the first studies to prospectively select patients using a dual biomarker strategy — PTGR1 overexpression combined with tumor DNA-damage repair deficiency.

- ✓ **Triple-negative breast cancer (TNBC) program advancing toward the clinic:** a planned Phase 1b/2 trial of **LP-184** monotherapy in relapsed/refractory advanced or metastatic TNBC with homologous recombination deficiency.

2026 2nd Quarter Highlights

4 of 4

Lantern Pharma®

NASDAQ: LTRN

- ✓ **USPTO Notice of Allowance** received for claims covering a three-gene expression signature used to select patients for treatment with LP-184 across four solid tumor indications.

- ✓ **Financial position:** Cash, cash equivalents, and marketable securities of approximately **$7.4 million** as of June 30, 2026. Funding received in the second quarter consisted of approximately $4.4 million in gross proceeds from the registered direct offering that closed on May 14, 2026. Second quarter loss from operations decreased approximately 25% year over year, to approximately $3.5 million for Q2 2026.

Open-Medicine AI: Expanding Lantern's AI Opportunity Beyond Oncology

OPEN MEDICINE

A strategic step to commercialize and expand Lantern's multi-agent AI co-scientist platform

- A strategic evolution of withZeta.ai
- From idea to medicine at the speed of insight

$10B+

projected AI drug discovery technology market by 2030

Separate company

Built to scale independently

Commercial licenses

Board-approved agreements for models, data & algorithms

Lantern-owned today

Wholly owned by Lantern; OMAI-level capital raise planned

Dedicated OMAI informational call planned for mid-September 2026

To detail the market opportunity, platform roadmap, and commercial model.

Multi-agent Collaboration at the Speed of Insight

OPEN MEDICINE

Instead of a single monolithic model, Open Medicine AI orchestrates a swarm of specialized agents that mirror the roles of a high-performing discovery and development team.

Medicinal Chemist
Design & optimize

Designs and optimizes small-molecule candidates. Explores SAR, synthesizability, and property predictions in parallel with the rest of the swarm.

Computational Biologist
Targets & pathways

Maps disease biology, target pathways, and multi-omics signals. Surfaces the most actionable hypotheses from the underlying data fabric.

Pharmacologist
ADME / Tox / Safety

Models ADME/Tox, exposure, and safety early. Reduces late-stage attrition by bringing pharmacology into the design loop from day one.

Clinical Strategist
Trials & biomarkers

Translates discovery into trial-ready thinking — biomarker strategy, patient selection, and regulatory-aligned development paths.

Knowledge Agent
Literature & data

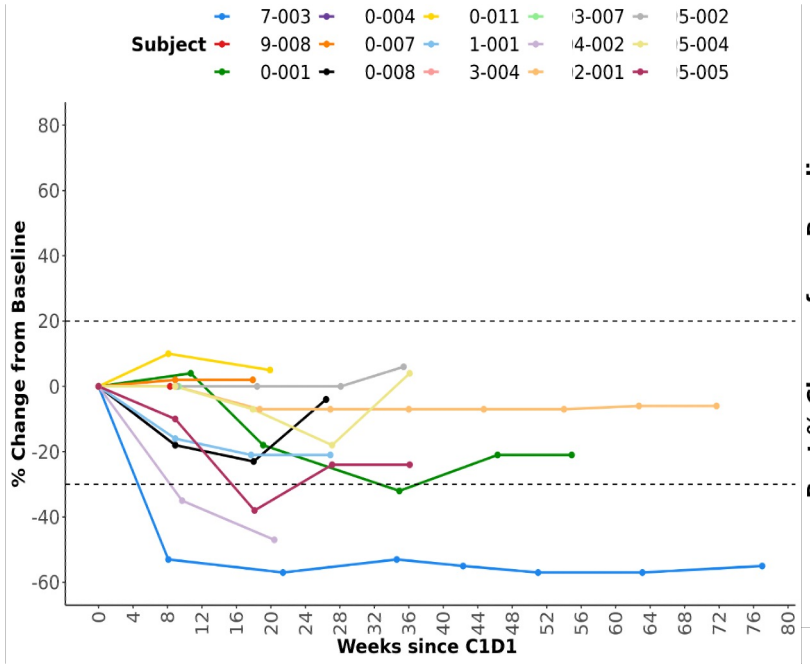
Continuously ingests literature, patents, proprietary datasets, and real-world evidence to keep the entire team current.

Portfolio Strategist
Prioritization

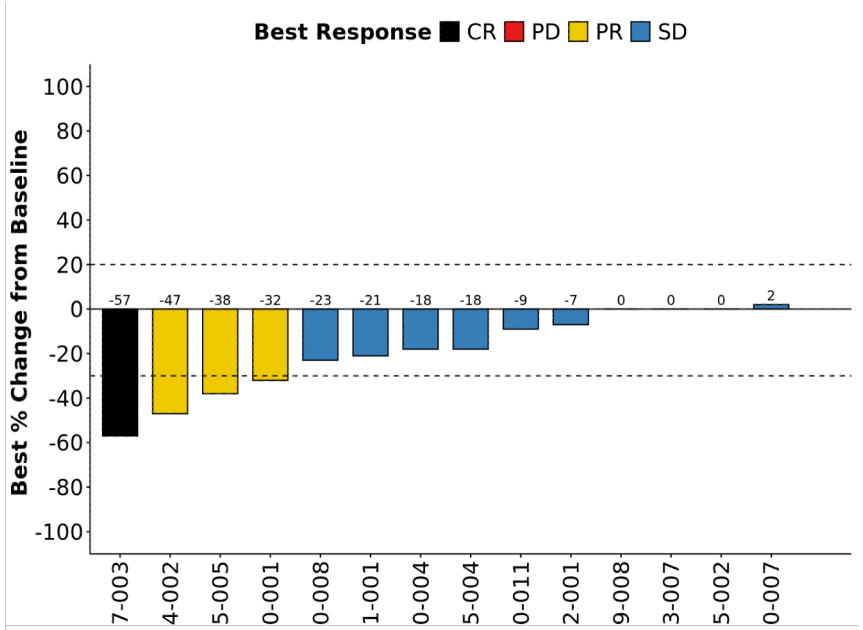
Balances scientific opportunity against competitive landscape, IP, and resource constraints to prioritize the highest-value paths.

Target Lesion Decreased in Over 70% of Evaluable L858R Patients

Percent change in cancer lesion size over time



Percent change in cancer lesion size by patient



Protocol Amendments following FDA Type C Interaction

1 Focus enrollment

EGFR Exon 21 L858R patients

2 Convert design

Migrate to Phase 2 single-arm study

3 Extend treatment

Increase maximum LP-300 cycles from 6 to 8

★ Emerging Signal in **EGFR Exon 21 L858R** Cohort (n=15)

8.4 months

Median PFS in L858R patients

8.9 months

Median PFS in patients who received up to 6 cycles

2+ years

Durable responses sustained in select L858R patients

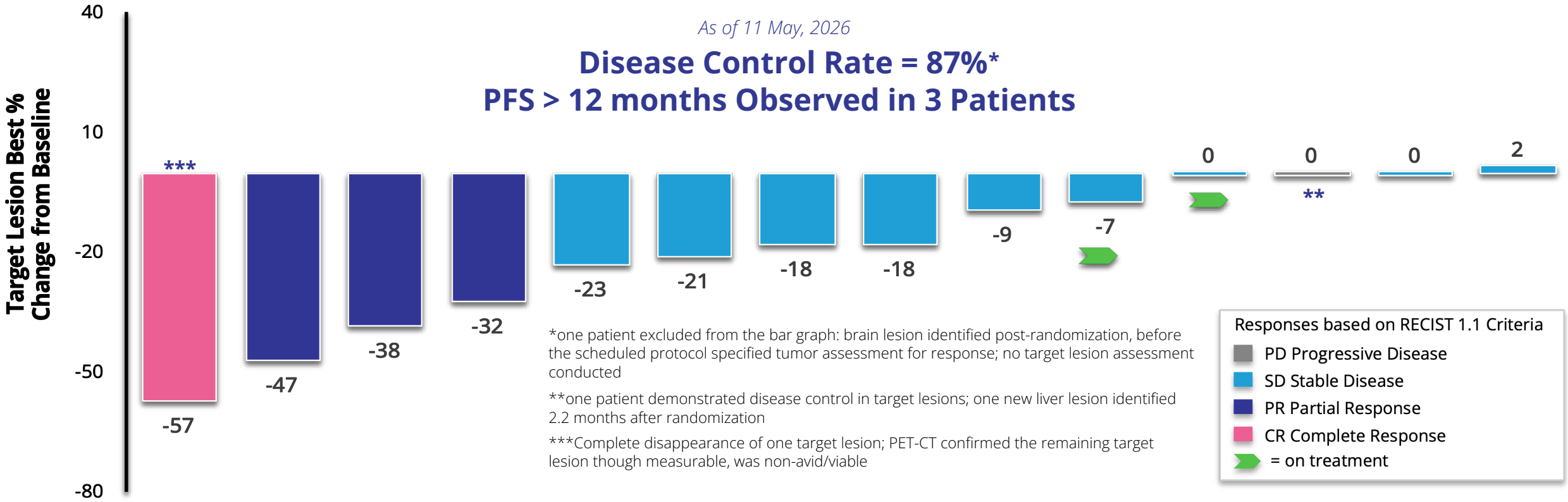
Independent Predictor

L858R confirmed as independent PFS predictor by multivariate Cox regression (controlling for race, gender, TP53)

LP-300 Shows Deep Tumor Responses in Patients with EGFR L858R – Mutated NSCLC

As of 11 May, 2026

Disease Control Rate = 87%*
PFS > 12 months Observed in 3 Patients



*one patient excluded from the bar graph: brain lesion identified post-randomization, before the scheduled protocol specified tumor assessment for response; no target lesion assessment conducted

**one patient demonstrated disease control in target lesions; one new liver lesion identified 2.2 months after randomization

***Complete disappearance of one target lesion; PET-CT confirmed the remaining target lesion though measurable, was non-avid/viable

TKI Driver Mutation	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R	EGFR L858R
Lines of Prior Systemic Therapies	2	1	2	1	1	1	2	3	2	2	3	1	2	4
Prior TKI Treatments	Osimertinib	Erolotinib	Erolotinib	Osimertinib	Osimertinib	Afatinib	Osimertinib Dabrafenib	Erolotinib Osimertinib Afatinib	Osimertinib	Erolotinib	Osimertinib	Afatinib	Erolotinib Osimertinib	Osimertinib Dacomitinib

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	Preclinical	Phase 1a	Phase 1b	Phase II
LP-300 harmonic	Non-Small Cell Lung Cancer for Never Smokers				
	Market Potential: $4+ Billion **Target/ MOA:** Tyrosine Kinases & Cell Redox Enzymes				
LP-184	Monotherapy & Combination w/ Olaparib for TNBC				FDA Fast Track Designation
	Market Potential: $4+ Billion **Target/ MOA:** Replication Stress/Synthetic Lethality/Double Stranded DNA Breaks				
	Combination w/ Immune Checkpoint Inhibitors for NSCLC				
	Market Potential: $2+ Billion **Target/ MOA:** LP184 induces cytosolic SSDNA induces immunogenic activation and modulates immune microenvironment				
	Advanced Recurrent PTGR1-Positive Bladder Cancer				Investigator-led trial in Denmark
	Market Potential: $0.5+ Billion **Target/ MOA:** TCNER dependency of LP-184 targets precisely TCNER dependency in Bladder Cancer				
LP-284	Recurrent NHLs and Soft Tissue Sarcomas				FDA Orphan Drug Designation for MCL, HGBCL, Soft Tissue Sarcomas
	Market Potential: ~$6 Billion **Target/ MOA:** Synthetic Lethality/ Double Stranded DNA Breaks				
ADC	Select Solid Tumors				

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

FDA

12 designations

Designation	Drug Candidate	Disease Indication	Annual US Population
Fast Track Designation	LP-184	Glioblastoma	10,525
	LP-184	Triple Negative Breast Cancer	43,000
Orphan Drug Designation	LP-184	Pancreatic Cancer	67,530
	LP-184	Glioblastoma	10,525
	LP-184	Malignant Glioma	26,397
	LP-284	Mantle Cell Lymphoma	1,664
	LP-284	High Grade B-Cell Lymphoma	1,500
	LP-284	Soft Tissue Sarcomas	13,910
Orphan Drug and Rare Pediatric Disease Designation	LP-184	ATRT	73
	LP-184	Malignant Rhabdoid Tumors	50
	LP-184	Rhabdomyosarcoma	500
	LP-184	Hepatoblastoma	125

A Phase 1b/2 Biomarker Driven Trial of LP-184 in Advanced Urothelial Carcinoma (Bladder) with PTGR1-Positive and TC-NER/HR Deficient

Phase 1b

Single agent, starting dose = 0.39 mg/kg
Dose de-escalation
3+3 (total n=3~18)

→ LP-184 D1,8 (21d)
Determine the optimal LP-184 dose

Phase 2

Simon first stage (n=13)
Including Phase 1b patients treated at the optimal LP-184 dose

→ If ≥1 objective response

→ **Simon second stage** (n=14)

Phase 1b/2 (up to 39)

LP-184 single agent

Advanced/metastatic urothelial carcinoma (3rd line)

PTGR1 positive and
TC-NER/HR deficient

Primary Objectives	Phase 1b **Safety / Tolerability**	Phase 2 **Preliminary ORR**
Secondary Objectives	DOR, PFS, OS	

Investigator-sponsored trial (IST)
Clinical PIs: Dr. Rohrberg and Dr. Pappot
Rigshospitalet University Hospital, Denmark

UNIVERSITY OF COPENHAGEN
REGION H Rigshospitalet

A Planned Phase 1b/2 Trial of LP-184 Monotherapy in Relapsed/ Refractory Advanced/Metastatic TNBC with HR-deficiency

Phase 1b

Single agent, 2-dose levels
- Cohort A (n≥15)
- Cohort B (n≥15)

LP-184 D1,8 (21d)
Determine RP2D

Phase 2

Simon first stage (n=15)
Phase 1b RP2D cohort data

If >1 Objective Response

Simon second stage (n=10)

Phase 1b/2 (n=40)

LP-184 single agent

Relapsed/refractory advanced/metastatic TNBC

HR-deficient*

Primary Objectives	Phase 1b **RP2D**	Phase 2a **Preliminary ORR**
Secondary Objectives	Safety, Tolerability DOR, PFS, OS, PK	

Clinicaltrials.gov (NCT05933265)

**confirmation (via next generation sequencing [NGS]) that the tumor harbors alterations in DNA damage repair (DDR)-related genes (including but not limited to BRCA1, BRCA2), or is homologous recombination deficiency (HRD) positive, or is genomic loss of heterozygosity positive.*

LP-184 May Overcome Key PARP Resistance Mechanisms

	Resistance Mechanism	Cause & Clinical Evidence	LP-184 Overcoming Impact
1	Increased drug efflux	**Upregulation of ABC transporters** Clinical evidence: No evidence	LP-184 is not a substrate of major ABC transporters
2	Decreased PARP trapping	**Loss / decreased trapping of PARP1 / PARG** Clinical: Trapping-diminishing PARP1 mutations in resistant tumors	Leads to TC-NER deficiency, making cells vulnerable to LP-184
3	Restoration of HR, esp. via BRCA	**Reactivation of BRCA1/2, loss of 53BP1** Clinical: Low expression & mutations in patients/PDXs	**BRCA2 reversion mutant xenograft model responded to LP-184** Loss of 53BP1-Shieldin confers sensitivity
4	Stabilization of stalled forks	**Loss of PTIP, EZH2** Clinical evidence: No evidence	*Alternative pathway mechanisms*

Financial Updates Q2 2026

Summary Results of Operations

	Three Months Ended June 30, (unaudited) 2026	2025
Operating expenses:		
General and administrative	$ 1,717,231	$ 1,583,521
Research and development	1,790,859	3,068,379
Total operating expenses	3,508,090	4,651,900
Loss from operations	(3,508,090)	(4,651,900)
Interest + Other income, net	45,005	320,885
Loss relating to warrant issuance	(1,481,660)	-
Warrant value change unrealized loss	(2,127,379)	-
NET LOSS	**$** (7,072,124)	**$** (4,331,015)
Net loss per common share, basic and diluted	$ (0.57)	$ (0.40)

Balance Sheet Highlights & Summary

	06/30/2026 (unaudited)	12/31/2025
Cash, Cash Equivalents & Marketable Securities	**7,361,255**	**10,119,224**
Prepaid Expenses & Other Current Assets	1,097,664	683,948
Total Assets	8,602,349	11,035,811
Total Current Liabilities	4,322,512	4,501,587
Warrant Liability	7,497,089	-
Total Liabilities	11,819,601	4,501,587
Total Stockholders' (Deficit) Equity	(3,217,252)	6,534,224

Lantern Pharma

NASDAQ: LTRN

CONNECT WITH US

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

www.lanternpharma.com

@LanternPharma

linkedin.com/company/lanternpharma

OPEN MEDICINE

FROM IDEA TO MEDICINE AT THE SPEED OF INSIGHT

open-medicine.ai

withzeta.ai