Lantern Pharma®

Corporate Overview

July 2026

NASDAQ: LTRN

Forward Looking Statements

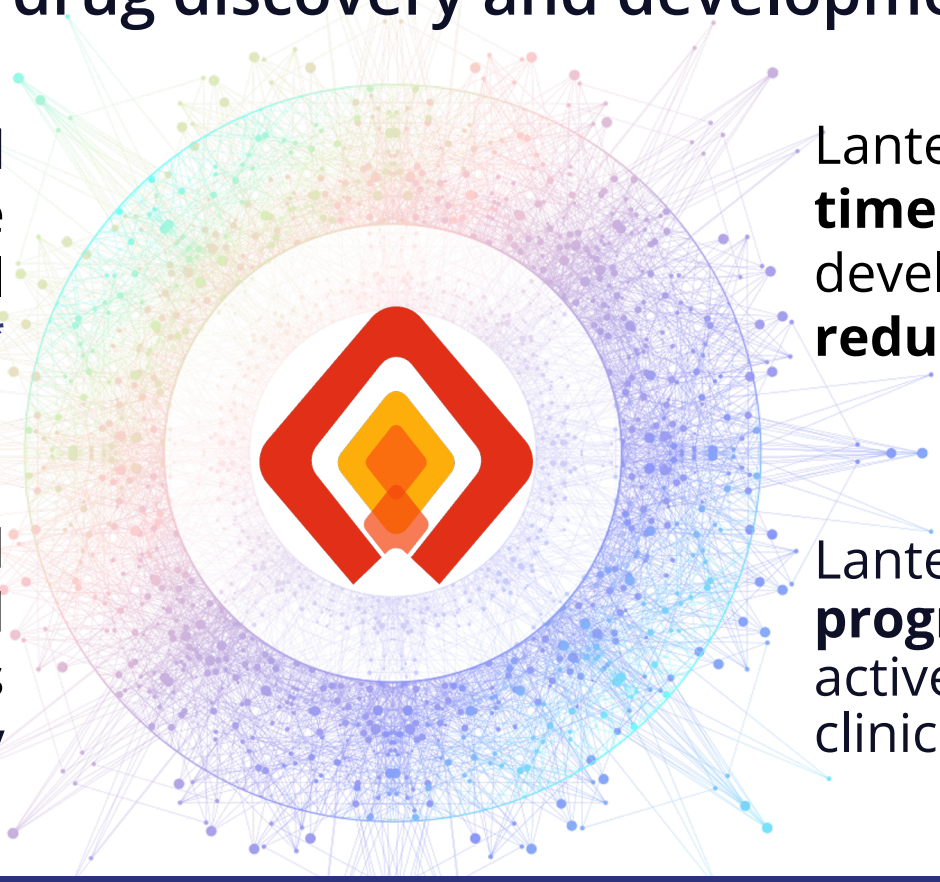
This presentation contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include, among other things, statements relating to: future events or our future financial performance; the potential advantages of our RADR® platform and withZeta.ai platform in identifying drug candidates, accelerating drug development, and generating revenue through software licensing and subscription models; our strategic plans to advance the development of our drug candidates and antibody drug conjugate (ADC) development program; the planned development and commercialization of our AI platforms; estimates regarding the development timing for our drug candidates, AI platforms, and ADC development program; expectations and estimates regarding clinical trial timing and patient enrollment; 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 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 our research and the research of our collaborators may not be successful, (iv) the risk that we may not be successful in licensing our product 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 AI platforms has received FDA marketing approval or otherwise been incorporated into a commercial product, (vii) the risk that our AI platform commercialization efforts, including withZeta.ai, may not generate the anticipated revenue or achieve the expected market adoption, and (viii) 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.

Lantern's AI platforms are transforming the cost, pace, and timeline of cancer drug discovery and development

AI insights and biomarkers can increase the odds of clinical trial success by **12X***

*(*Parker et al., 2021)*

RADR® can **predict and stratify real-world patients** for clinical trials with **88% accuracy**



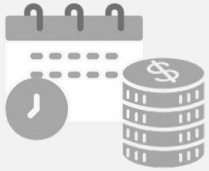
Lantern can **compress the timeline** of early-stage drug development by **70%** and **reduce the cost** by **80%**

Lantern has launched **10 new programs in 2 years**, and has active ongoing Ph.1 and Ph.2 clinical trials

LANTERN'S DRUG DEVELOPMENT MODEL AND OBJECTIVES

Large Scale/Multi-omics Oncology Data

Proprietary AI platform RADR®



Accelerated timelines; reduced costs and risks

Lantern's AI-Driven Business Model has Multiple Routes Towards Success

Areas of Focus | **Successes to Date**

1 Rescue & Reposition
Drug Candidates

Based on previous clinical data and observations, **LP-300 was rescued for never smokers with NSCLC** and is in a Phase 2 trial

2 Discover & Develop
New Molecules Including ADCs

LP-284's unique mechanism of action was predicted by RADR® and was **developed to Phase 1 trial** in 2 years

3 Accelerate & De-risk
Trials with Biopharma Partners

Predicting patient response with greater than **88% accuracy**, Lantern has accelerated the development of Elraglusib

RADR®
AI Platform

Targeted Clinical Trials

By Lantern and/or other biopharma partners

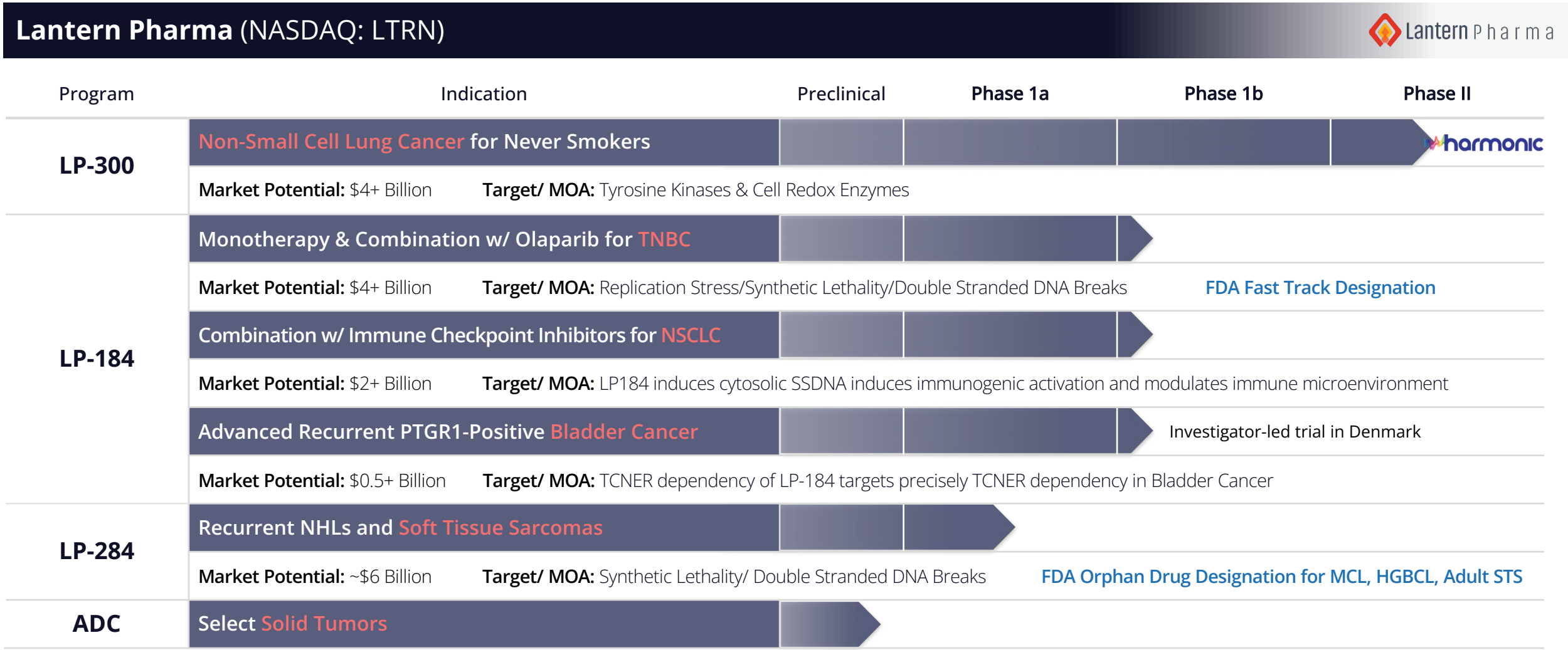
High-value Partnering & Licensing Opportunities

With biopharma and tech companies

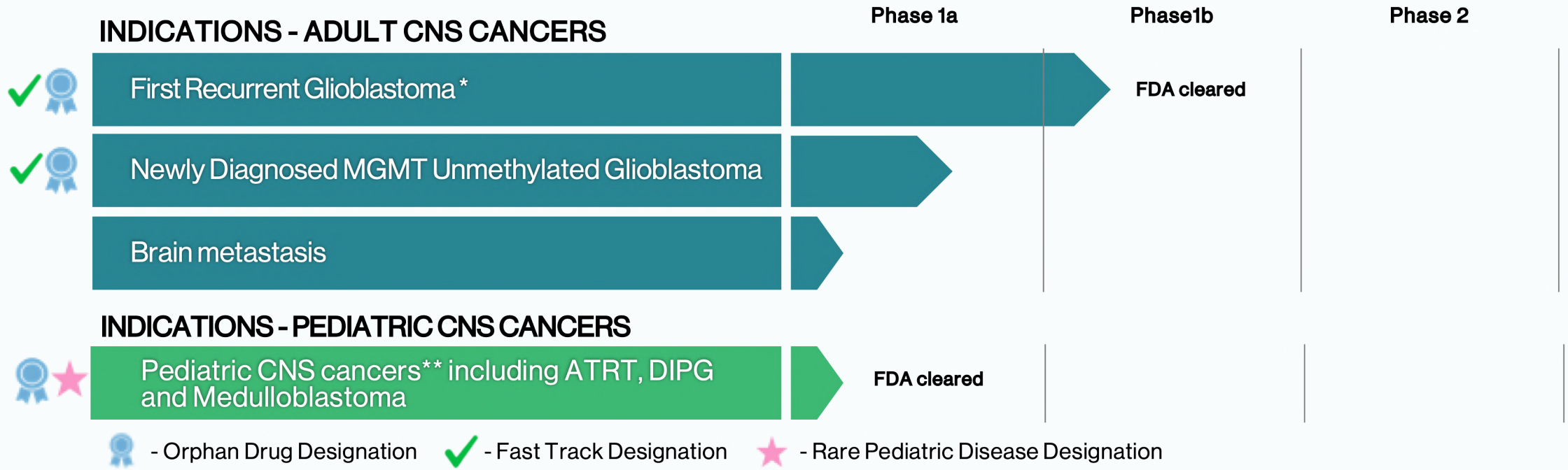
Lantern's Diverse & Unique AI Driven Pipeline of Drug Programs

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

Lantern Pharma (NASDAQ: LTRN)



CLINICAL TRIALS PLANNED FOR STAR-001



*Phase 1a enrollment completed by Lantern Pharma and information obtained to support commencement of Phase 1b/2
**Pediatric is positioned to commence now that Phase 1a adult enrollment completed and MTD information has been obtained

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

FDA

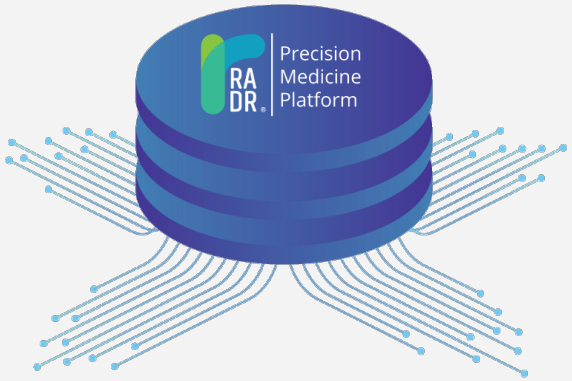
12 designations

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

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

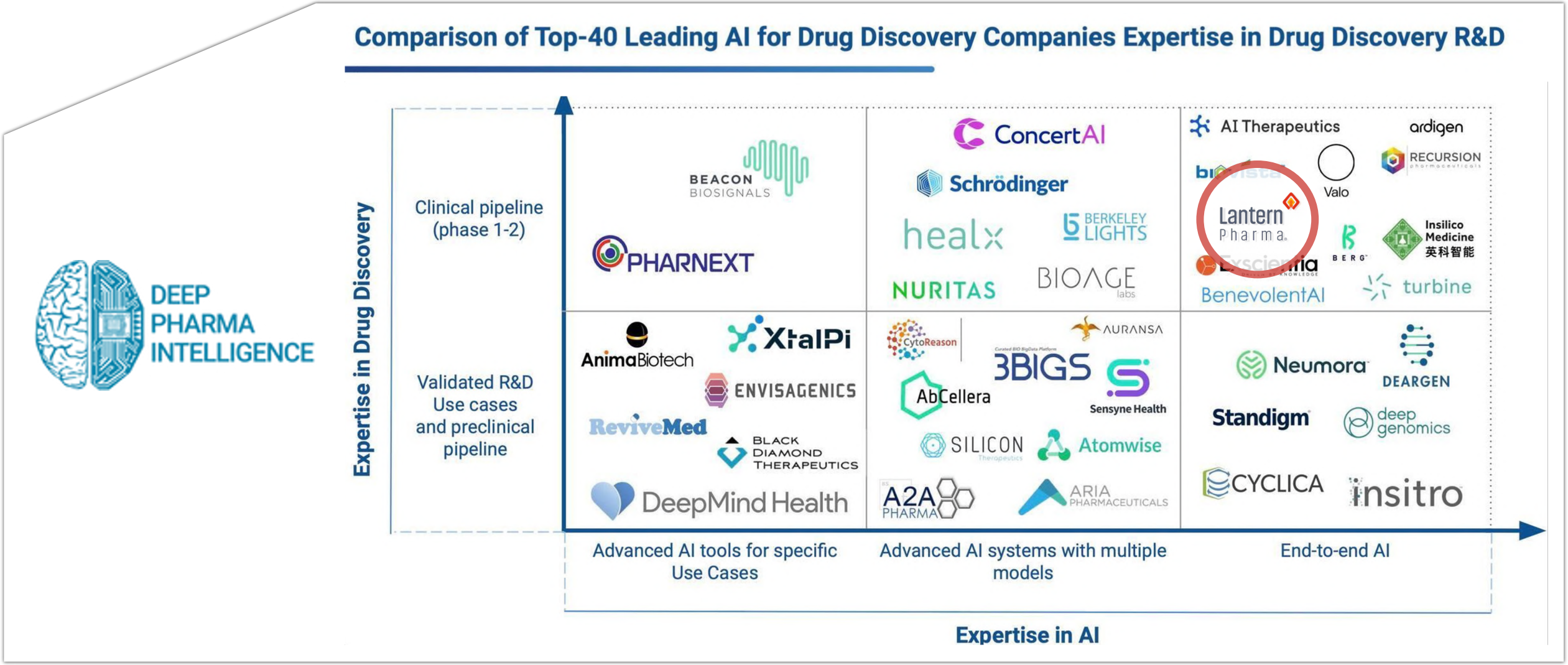
200+
Advanced ML Algorithms

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 Pharma is a Top 10 End-to-End AI Drug Discovery Company



According to Deep Pharma Intelligence

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

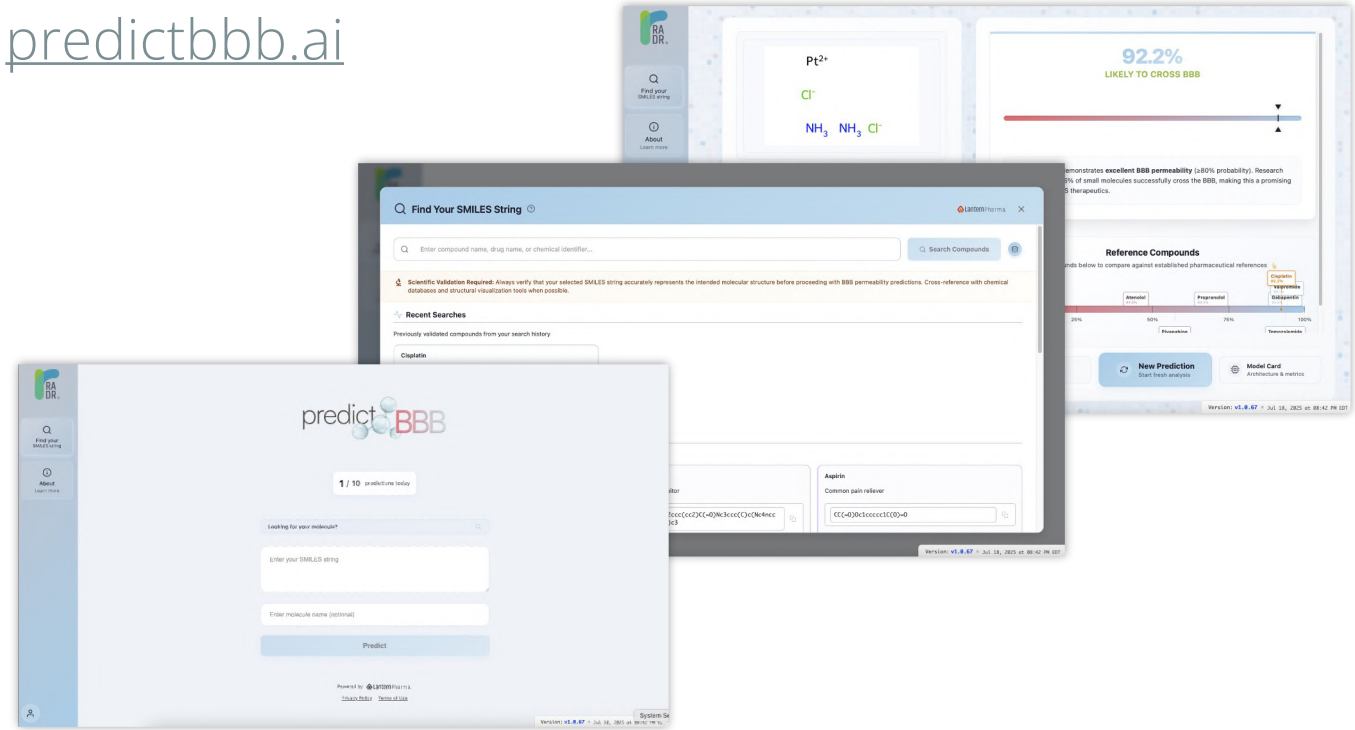
- Built on Lantern's RADR® AI platform
- Converts molecular structure into thousands of predictive features
- Evaluates permeability using ensemble machine learning models

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

predictbbb.ai



PredictBBB - Beyond Brain Permeability 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

Overview

Integrates structure, physicochemical properties, and AI prediction into a single interpretable view- delivering probability scores, key drivers, and decision-ready insights at a glance

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

withZeta.ai – The Multi-Agentic Co-Scientist & AI System For Rare Cancer Drug Development and Research

withZeta 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

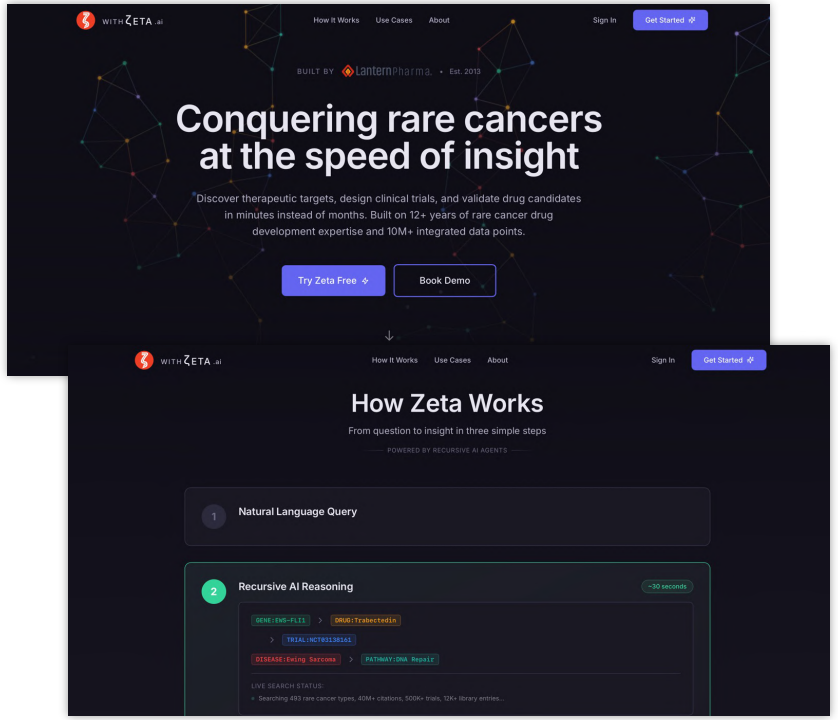
- Curated rare cancer databases and ontology
- Integrated 500k+ clinical trials, 200k+ publications, 1.2M knowledge objects
- Real-time bioinformatics and chemo informatics toolkits
- Links to RADR® predictive modules (e.g., PredictBBB.ai)

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”



withZeta.ai Roadmap - Multi-agent reasoning, computational biology, and enterprise infrastructure powering the next generation of oncology AI

withZeta.ai is evolving into a unified AI research environment combining multi-agent reasoning, computational biology, and enterprise-grade scientific infrastructure

ZetaSwarm™

Autonomous Multi-Agent Intelligence

- Parallel specialist AI reasoning
- Agents for chemistry, biomarkers, trials, and oncology
- Real tool execution with auditability

ZetaOmics™

Computational Biology & Multi-Omic Analytics

- Differential expression and pathway analysis
- Drug-response and biomarker correlation
- TCGA, GTEx, TARGET, GEO, and cBioPortal integration

Enterprise Platform

Institutional & Commercial Deployment

- Workspace collaboration and access controls
- Audit trails and execution-level tracking
- Private knowledge base integration

> *With this roadmap, withZeta.ai is being built as the third option — a multi-agentic, learning platform that knows what it doesn't know, can call the right tool to find out, and improves with every research session. We believe this is what the next decade of AI in biomedicine looks like.*
>
> – Panna Sharma

Research and Clinical Collaborations

Strategic collaborations that are providing unique real-world insights and accelerating timelines

World-Class Academic and Research Institutions

Johns Hopkins Medicine

Fox Chase Cancer Center, Temple Health

UT Health San Antonio, Greehey Children's Cancer Research Institute

UMass Boston

Cornell University

The University of Texas MD Anderson Cancer Center, Making Cancer History®

Danish Cancer Society

Universität Bielefeld

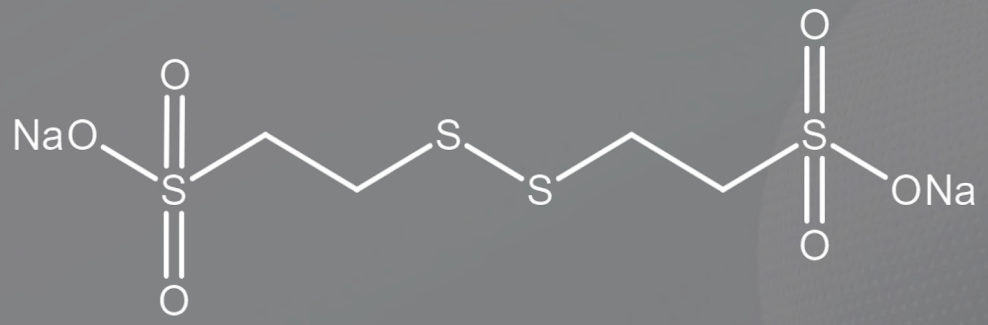
Biopharma Collaborations

Actuate Therapeutics

ttc oncology

Oregon Therapeutics

LP-300 for the Treatment of Non-Small Cell Lung Cancer (NSCLC) in Never Smokers



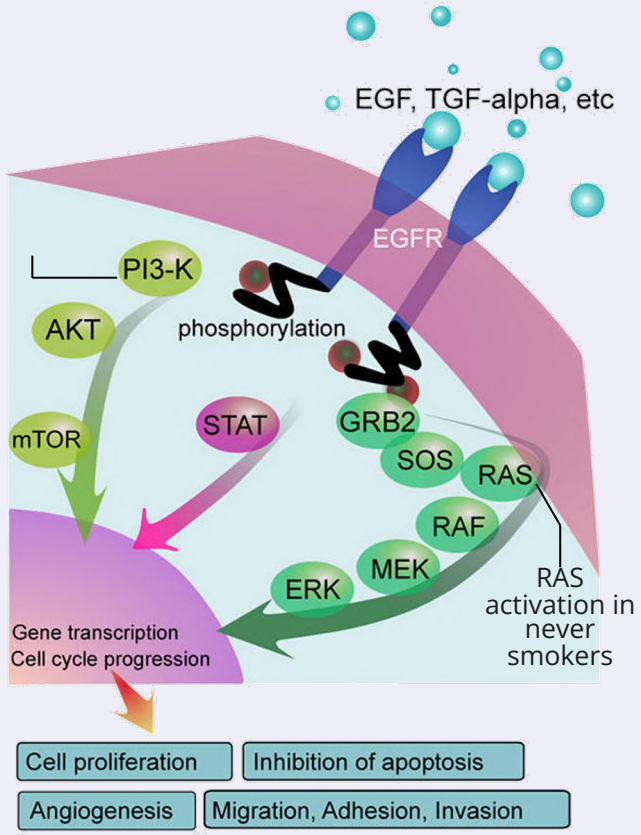
Lead Indication	Relapsed NSCLC for Never Smokers
Clinical Status	Phase 2 (multiple patients dosed globally, Japan enrollment complete)
Market Potential*	$4+ billion
Indication Size*	150,000 + Cases
Target/ MOA	Tyrosine Kinases & Cell Redox Enzymes
Molecule Type	Disulfide Small Molecule
Combination	With Carboplatin and Pemetrexed
IP Estate	Claims extending to at least 2032

**Estimated Annual Global*

Mechanism of Action – LP-300

LP-300's multimodal MoA resensitizes NSCLC to chemo in the never smoker population

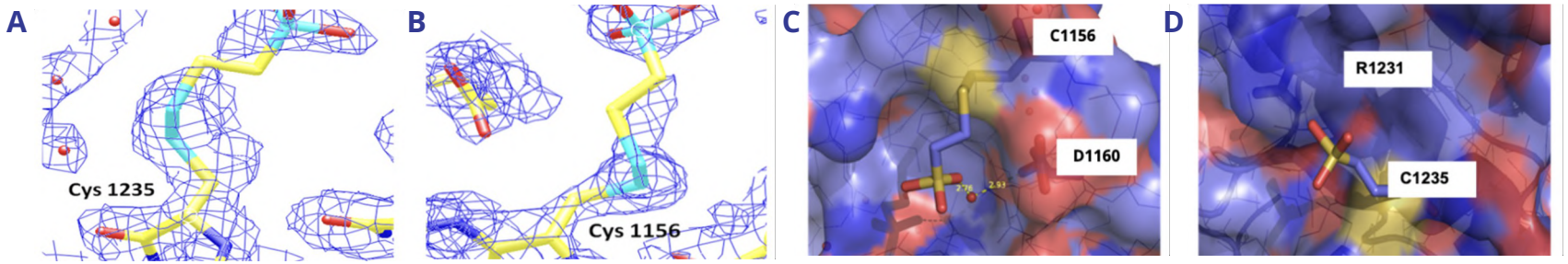
Relevant Receptor Signaling Pathways in Never Smokers



Source: www.cancer.gov

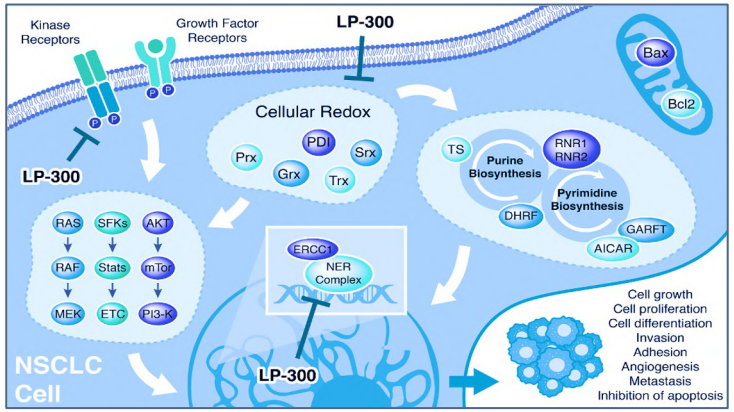
LP-300's multimodal MoA resensitizes NSCLC to chemo

1 LP-300 Directly Engages with TKI Receptors via Cysteine Modification



A-B. LP-300 adduct at **Cys1235 Cys1156** **C.** Molecular surface of ALK with the LP-300-derived adduct at **Cys1156** *(yellow highlight)* **D.** Binding site of the LP-300-derived adduct at **Cys 1235** *(yellow highlight)*

2 LP-300 Modulates Cellular Redox in Key Signaling Pathways in NSCLC



- Restoring apoptosis sensitivity
- Oxidative stress modulation
- Anti-angiogenesis
- Reduced DNA synthesis and gene expression
- Reduce glutathione/thioredoxin mediated tumor resistance to therapy
- Nephrotoxicity protection against chemotherapy

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

Accelerating recruitment efforts for a growing indication with limited treatment options

harmonic

NCT05456256

Non-Small Cell Lung Cancer

Never Smokers

~60

Patients

Two arm, Open-label, Randomized Trial

Multi-Site in US & Asia

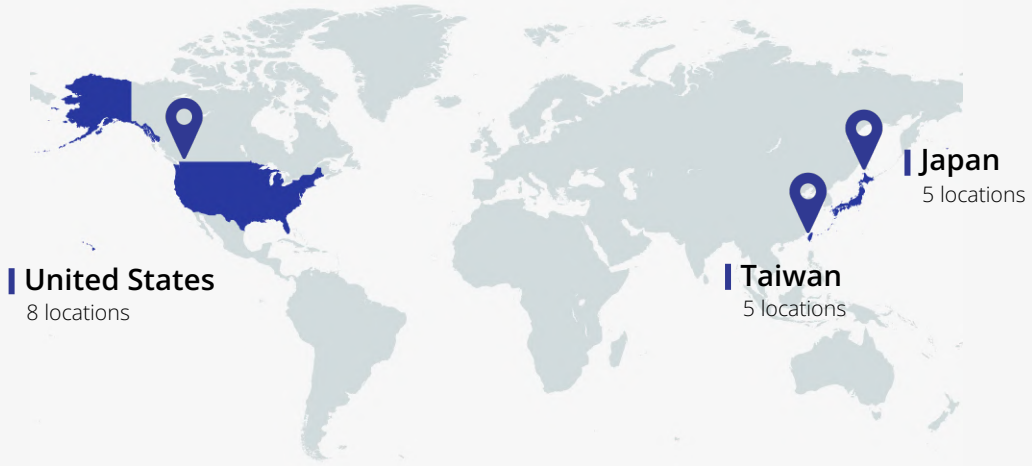
Trial Highlights

- 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**
- Preliminary patient data and clinical readouts showed an **86% clinical benefit rate**

Primary Outcomes: Overall and progression free survival

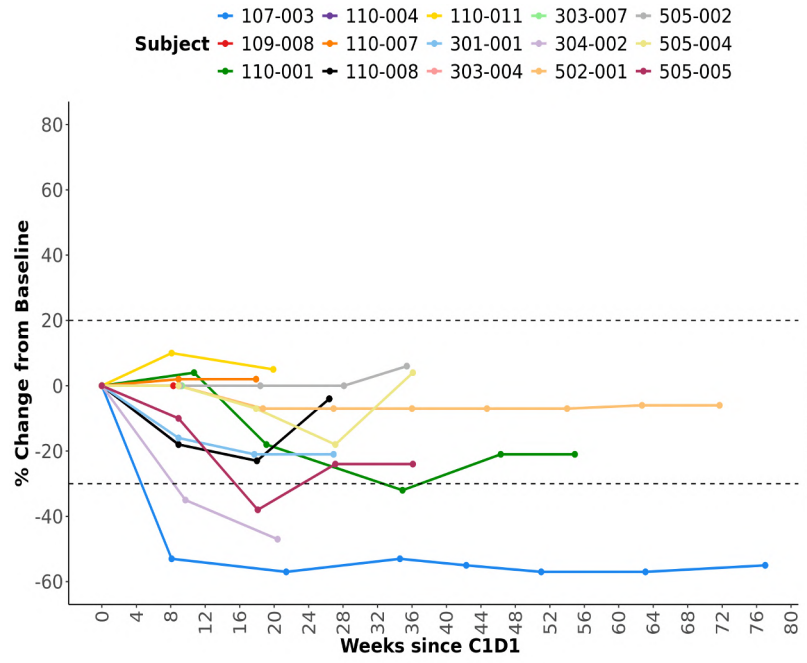
Announced preliminary patient data showing an 86% clinical benefit rate - Scan the QR code for the full initial result release

Multi-national Phase 2 Trial with 8 sites in the **US**, 5 sites in **Japan**, and 5 sites in **Taiwan**

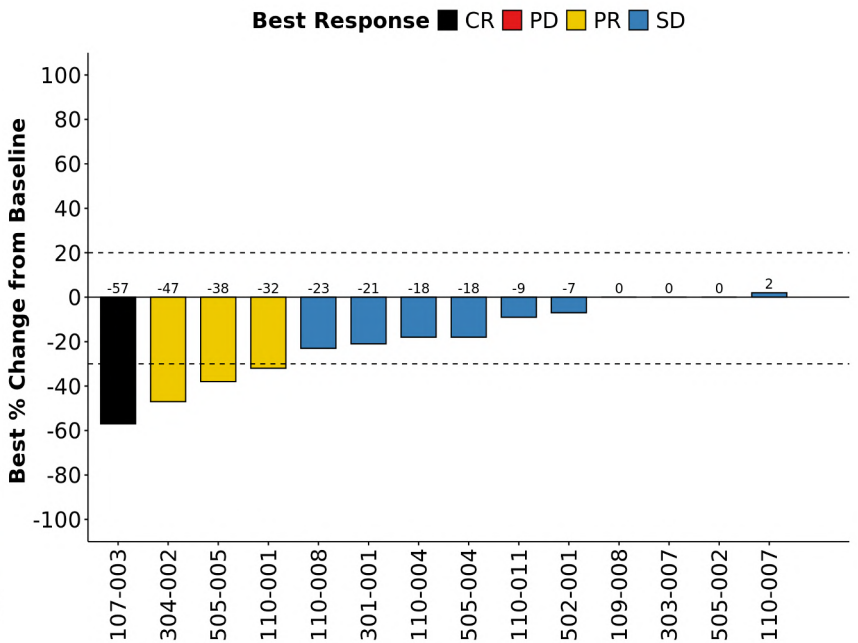


Target Lesion Decreased in Over 70% of Evaluable L858R Patients

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

8.4 months
Median PFS in patients who received up to 6 cycles

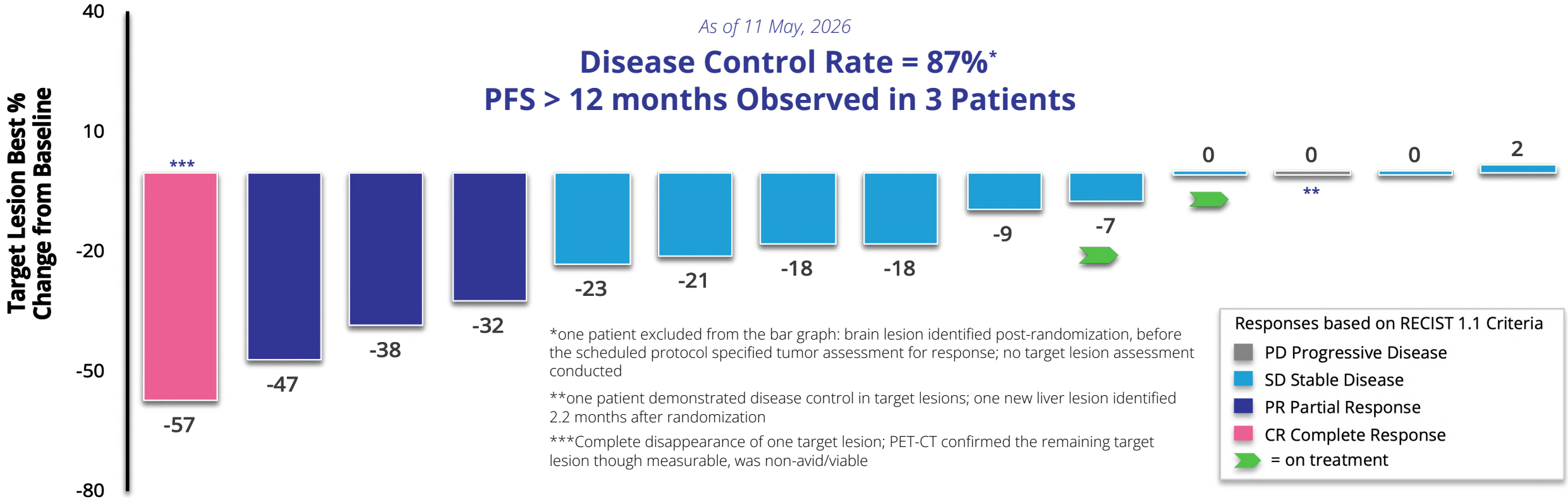
2+ years
Durable responses sustained in select L858R patients

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



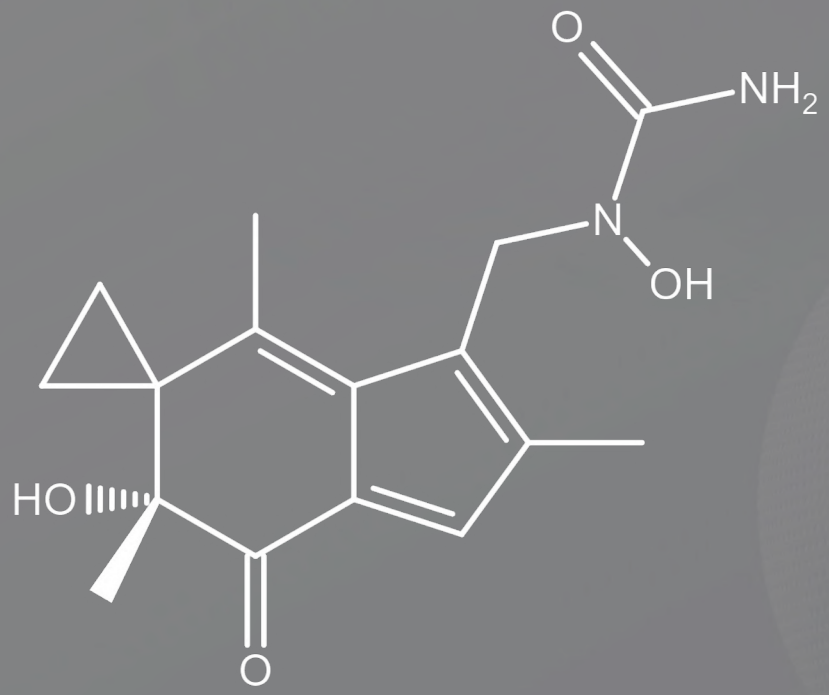
*one patient excluded from the bar graph: brain lesion identified post-randomization, before the scheduled protocol specified tumor assessment for response; no target lesion assessment conducted

**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

LP-184 for the Treatment of Advanced Solid Tumors



Lead Indications	DDR deficient solid tumors including Pancreatic cancer, Bladder cancer, and TNBC
Clinical Status	Phase 1a enrollment completed, Phase 1b/2 planned
Market Potential*	$10+ Billion
Indication Size*	170,000 + Cases, Estimated 400,000 + Cases Global
Target/ MOA	Double-stranded DNA breaks; alkylates DNA in the 3' of Adenine
Molecule Type	Acylfulvene Class
Combination Potential	Checkpoint inhibitors, PARP inhibitors, Spironolactone, Chemotherapy and Radiation Therapy
IP Estate	10+ patents/pending apps., Claims extending into 2044

**Estimated Annual USA*

Disease Overview – Advanced Solid Tumors with DDR Deficiencies

LP-184 has Blockbuster Potential Across Multiple Cancers as a Single Agent or in Combination Therapy

Annual US Market Potential: $10+ Billion

(DDR Deficient Solid Tumors)

1 in 4 people have solid tumors with DDR Deficiencies

Triple Negative Breast Cancer

Lung Cancer

Bladder Cancer

Advanced Solid Tumors

- Advanced solid tumor cancers, having spread beyond the primary site, are often more challenging to treat than earlier stage tumors due to their advanced progression
- Demonstrated preclinical synergy with multiple FDA approved drugs (e.g. PARPi, PD-1, and Spironolactone)
- Many of these indications - *reinforced with AI insights* - have limited or no standard of care, making them ideal and efficient entry points for LP-184 as an approved therapy

DNA Damage Response (DDR) Deficiency

DDR is essential for maintaining genomic stability by repairing different types of DNA damage. Inhibition of DDR has been shown to increase the effectiveness of anticancer immunotherapies

Cancer cells with high underlying levels of DNA damage are **more dependent on DDR** for survival when compared to normal cells

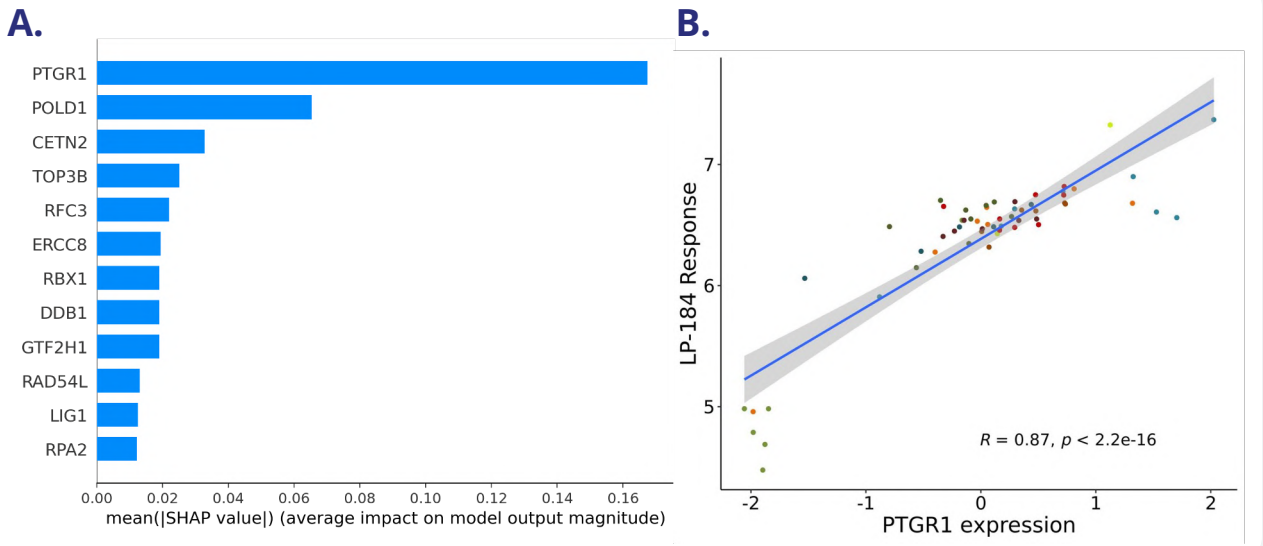
DDR Deficiencies result in the accumulation of DNA damage, which produces an "Achiles Heel" for drugs leveraging synthetic lethality

LP-184's MoA was Predicted by RADR® and Validated in Multiple Lab Studies

In silico

Precision Medicine Platform

Using RADR®, PTGR1 was Identified as a Biomarker that Predicts LP-184 Response

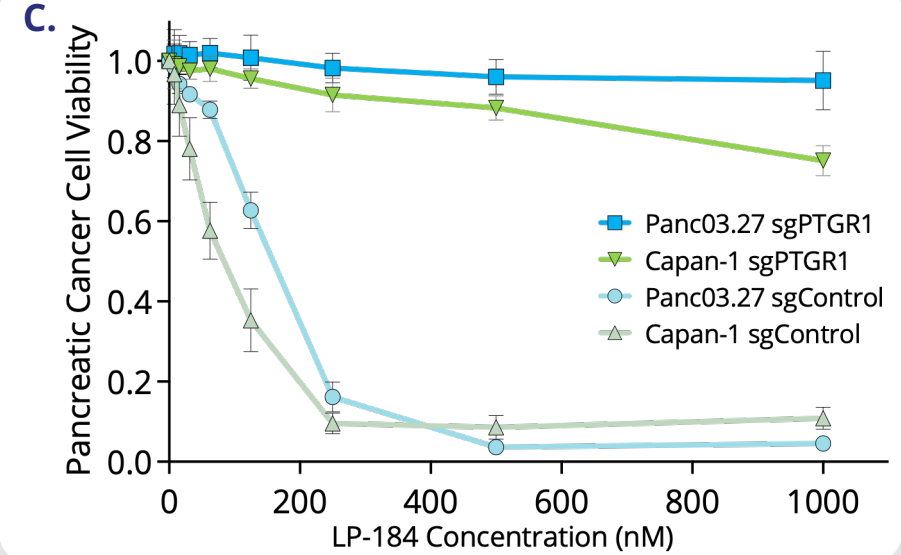


- **Prostaglandin Reductase 1 (PTGR1)** is an oxidoreductase enzyme that is frequently elevated in cancers
- PTGR1 activates LP-184 into its highly potent and cytotoxic form
- RADR® insights predicted that LP-184 activity positively correlates with PTGR1 transcript levels in the NCI60 cancer cell line panel

In vitro

Fox Chase Cancer Center, Temple Health

Validated using CRISPR Experiments

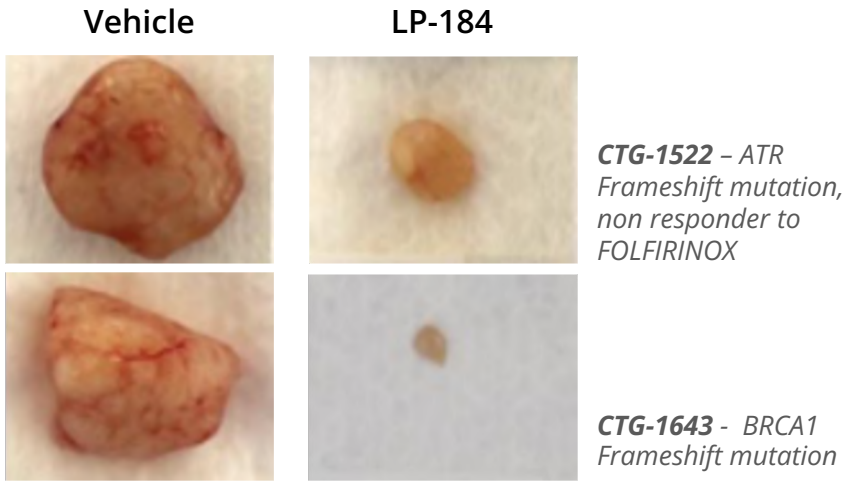


- CRISPR-mediated depletion of PTGR1 expression in a pancreatic cancer cell line is sufficient to **fully diminish LP-184 activity**
- This **confirmed the RADR® insights** and that LP-184 was highly potent in cells with PTGR1

LP-184 Treatment Results in Complete Regression in Multiple DDR Deficient PDX Models

In-vitro PDX pancreatic mouse models treated with LP-184 - CTG-1522 and CTG-1643 models showed **a tumor growth inhibition of >100%**

A.

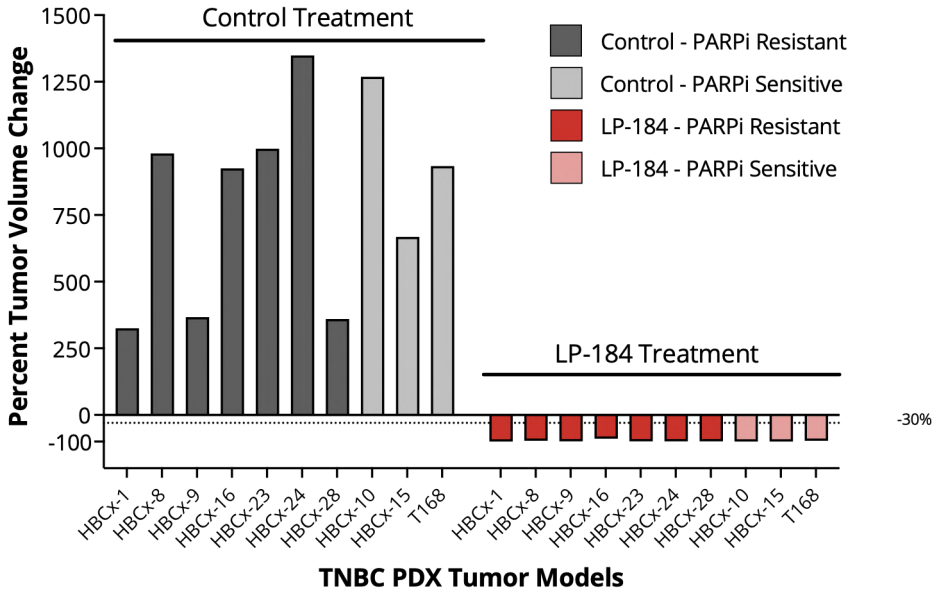


CTG-1522 *– ATR Frameshift mutation, non responder to FOLFIRINOX*

CTG-1643 *- BRCA1 Frameshift mutation*

Across 10 TNBC PDX mouse models (*All 10 TNBC PDX models were **HR deficient***) LP-184 treatment resulted in 107-141% tumor growth inhibition

B.



In collab. with FOX CHASE CANCER CENTER, TEMPLE HEALTH

Poster: AACR

- LP-184 exhibits nanomolar potency in PTGR1 overexpressing tumors with DDR deficiencies
- Positioned for 2nd and 3rd line treatment, where there is unmet need for novel therapies
- FDA **Orphan Drug Designation** granted in pancreatic and **Fast Track Designation** in TNBC
- Combination therapy potential with SOC agents: Spironolactone, PARP inhibitors, Gemcitabine, Irinotecan, Oxaliplatin, and PD-1

Clinical Trial – Completed LP-184 Phase 1a Basket Trial

Potential blockbuster molecule with a market of $10+ billion in annual sales

First-In-Human Trial for **LP-184**

Clinicaltrials.gov (NCT05933265)

Solid Tumors / Brain & CNS Cancers

63

Patients enrolled

$10+ Bn

Annual US market potential in DDR deficient solid tumors

Multi-Site

Achieved all primary endpoints with robust safety profile and promising antitumor activity in multiple advanced solid tumors

54% **Disease control rate** at or above therapeutic dose levels

NSCLC with BRCA1 alteration

23+ months ongoing benefit

22% target lesion reduction

GIST with ATM alteration

12+ months ongoing benefit

26% target lesion reduction

Thymic Carcinoma w/ CHEK2 alteration

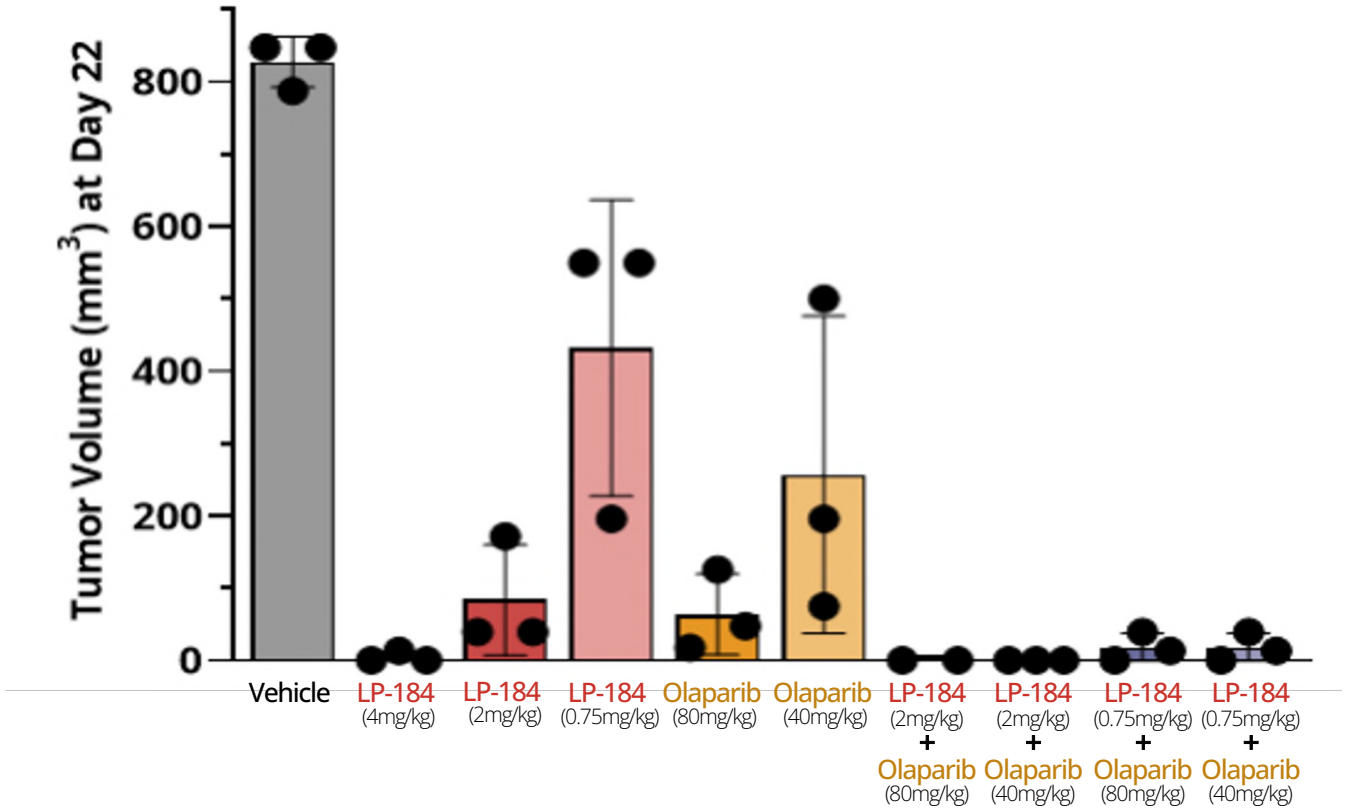
12+ months ongoing benefit

9% target lesion reduction

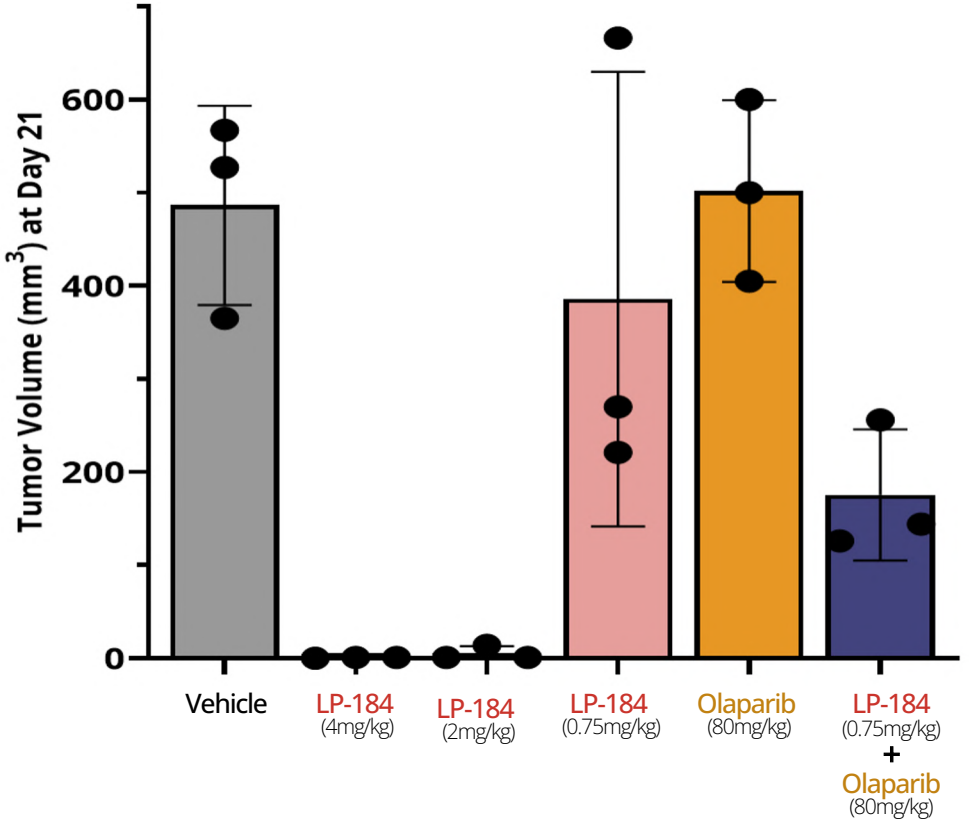
- **Established Maximum Tolerated Dose (MTD):** 0.49 mg/kg administered intravenously on Days 1 and 8 of a 21-day cycle
- **Favorable Safety Profile:** Main adverse events included reversible transaminitis, nausea/vomiting, and thrombocytopenia—all clinically manageable and consistent with the alkylating agent class
- **High Therapeutic Index:** Therapeutic plasma concentrations achieved four dose levels below MTD, indicating a wide therapeutic window (~2.45-fold)
- **Biomarker Validation:** More than 87% of Phase 1a patients exceeded the PTGR1 bioactivation threshold, confirming the biomarker's utility for patient selection

LP-184 + Olaparib Combination Achieves 3-14x Greater Tumor Regression Compared To Olaparib Alone In TNBC PDX Models

Tumor regression is achieved using 5x lower doses of LP-184 in combination as compared to doses used as monotherapy



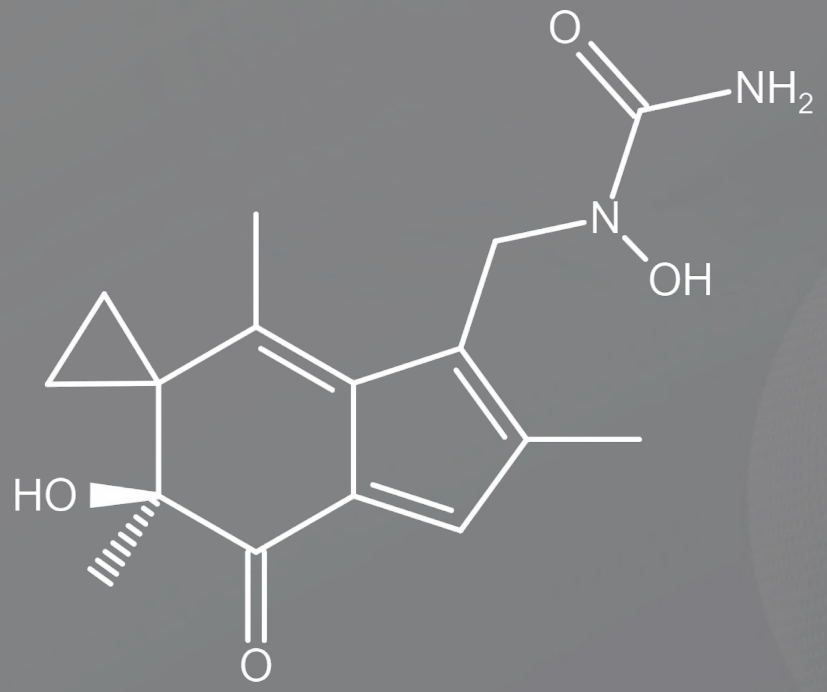
Tumor Volume in HBCx-10 PARPi sensitive TNBC PDX Model Treated with LP-184 (days 1, 8), Olaparib (daily), or Combination



Tumor Volume in HBCx-28 PARPi resistant TNBC PDX Model Treated with LP-184 (days 1, 4, 8, 11), Olaparib (daily), or Combination

Kulkarni, A. et al., Cancer Research Communications, 2024

LP-284 for the Treatment of B-cell Non-Hodgkin's Lymphomas (NHL)



Lead Indications	Mantle Cell, Double Hit Lymphomas, DDR Deficient Non-Hodgkin's Lymphomas, Soft Tissue Sarcoma
Clinical Status	Phase 1 (Complete response in heavily pre-treated lymphoma patient)
Market Potential*	~$6 Billion
Indication Size*	450,000+
Target/ MOA	Synthetic Lethality/ Double Stranded DNA Breaks
Molecule Type	Acylfulvene Class
Designations	Orphan Drug - Mantle Cell Lymphoma, High-grade B Cell Lymphoma, Soft Tissue Sarcomas
Combination Potential	Rituximab and Spironolactone
IP Estate	Claims extending into 2039

**Estimated Annual Global*

Disease Overview – B-cell NHL & Soft Tissue Sarcomas

LP-284 is being developed for aggressive cancers with significant unmet need and expanding market opportunity

Annual Global Market Potential: ~$ 6 Billion

(NHL + Adult Sot Tissue Sarcoma)

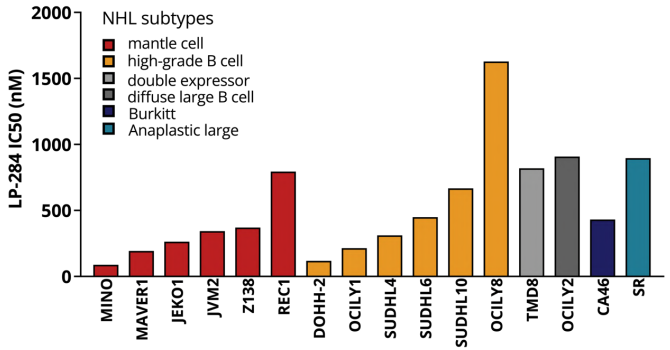
B-cell Non-Hodgkin's Lymphomas

7th leading cause of cancer in the US

4% of all cancers are NHL in the US

- NHL is a cancer of the lymphatic system and occurs when normal B-cells, T-cells, or Natural Killer (NK)-cells grow out of control
- There are over 30 subtypes of NHL including mantle cell lymphoma (MCL), high-grade b-cell lymphoma(HGBL), and diffuse large B-cell lymphoma

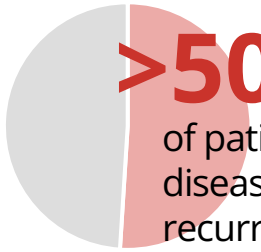
LP-284 treatment on NHL Cell lines



Soft Tissue Sarcomas

13K+ new cases annually in the US

80K+ new cases annually worldwide



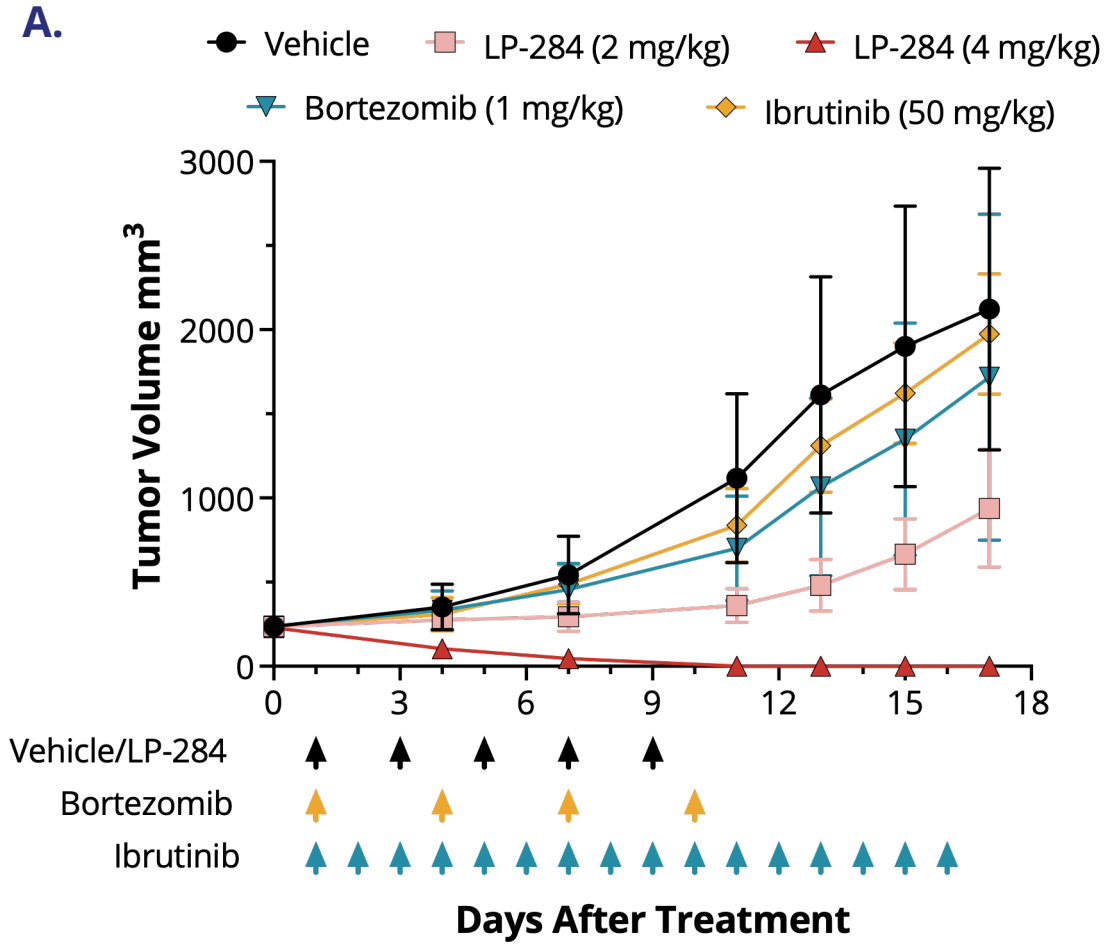
>50% of patients with advanced disease experience recurrence or progression

- Rare cancers arising from connective tissues including muscle, fat, blood vessels, and fibrous tissue
- More than 70 histological subtypes
- Incidence continues to increase globally as diagnostic capabilities improve and populations age
- Limited effective therapies for advanced or metastatic disease
- Five-year survival drops substantially following metastatic progression

Superior Responses to LP-284 are Observed Preclinically in Several NHLs Including those Resistant to SOC Agents

MCL tumor volumes drastically reduced compared to FDA approved agents in mice models

A.



Tumors resistant to Ibrutinib and Bortezomib has significantly reduced volume

B.

Nearly all MCL Patients Relapse from SOC Therapies

In cell-derived xenograft MCL models, LP-284 can completely reduce tumors that are resistant to Ibrutinib and Bortezomib

LP-284 Highlights from NHL Clinical Trial & Potential New Indications

Phase 1a trial for recurrent NHLs with scarce therapeutic options and potential in SLE / Lupus

First-In-Human Trial for **LP-284**

Non-Hodgkin's Lymphomas

30-35

Patients expected to be enrolled

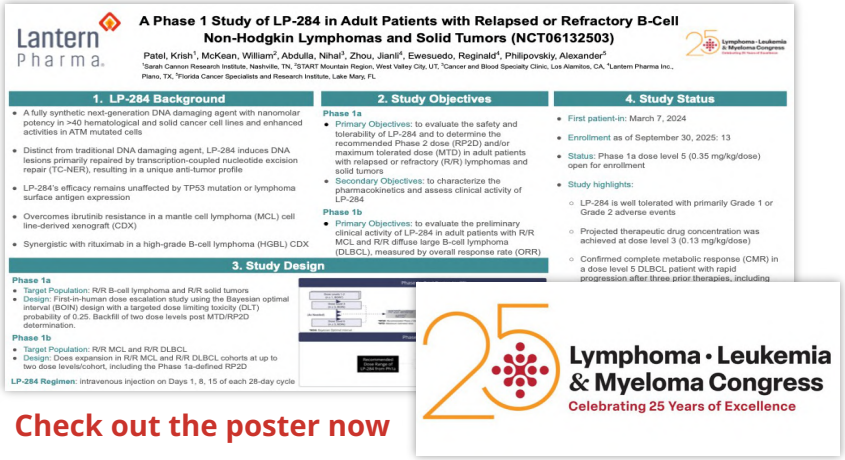
$4.0Bn

Estimated global annual market potential in NHL

Multi-Site

Highlights

- Heavily pretreated patient with aggressive Grade 3 B-cell lymphoma (DLBCL) achieved a **complete metabolic response**
- Presented at the Lymphoma Leukemia and Myeloma Congress 2025



Check out the poster now

25 Lymphoma • Leukemia & Myeloma Congress
Celebrating 25 Years of Excellence

FDA

LP-284 Received FDA Orphan Drug Designation for Soft Tissue Sarcomas

- Expands LP-284 Beyond Hematologic Malignancies
- Third FDA Orphan Drug Designation awarded to LP-284 (MCL & HGBL 2023)
- Market opportunity estimated at $2.4B in 2025, projected to reach $4.7B by 2035
- Adult sarcomas frequently exhibit DNA repair deficiencies and chromosomal instability, aligning with LP-284's synthetic lethal mechanism
- Creates a strategic path into both hematologic malignancies and solid tumors

Developed from Billions of Datapoints Using AI

$5-6 Billion Market Potential

Multiple Clinical Stage CNS Cancer Indications

Received Fast Track & Orphan Drug Designation for GBM, Orphan Drug & Rare Pediatric Designation for ATRT

Completed Enrollment for Adult Phase 1a Trial

World Class Collaborators from Johns Hopkins, and UT Health San Antonio

Scan the QR code for the full Starlight Corporate Overview

starlight therapeutics

THERE ARE OVER 120 TYPES OF CNS CANCERS AND A MAJORITY HAVE NO CURATIVE TREATMENT OPTIONS

Starlight's Unique Areas of Focus

01 Glioblastoma (GBM)

13,000/yr in USA

No effective systemic therapies have been approved for GBM in over 18 years

02 Brain Metastases

100,000+/yr

More effective therapies are needed to improve outcomes for brain metastases

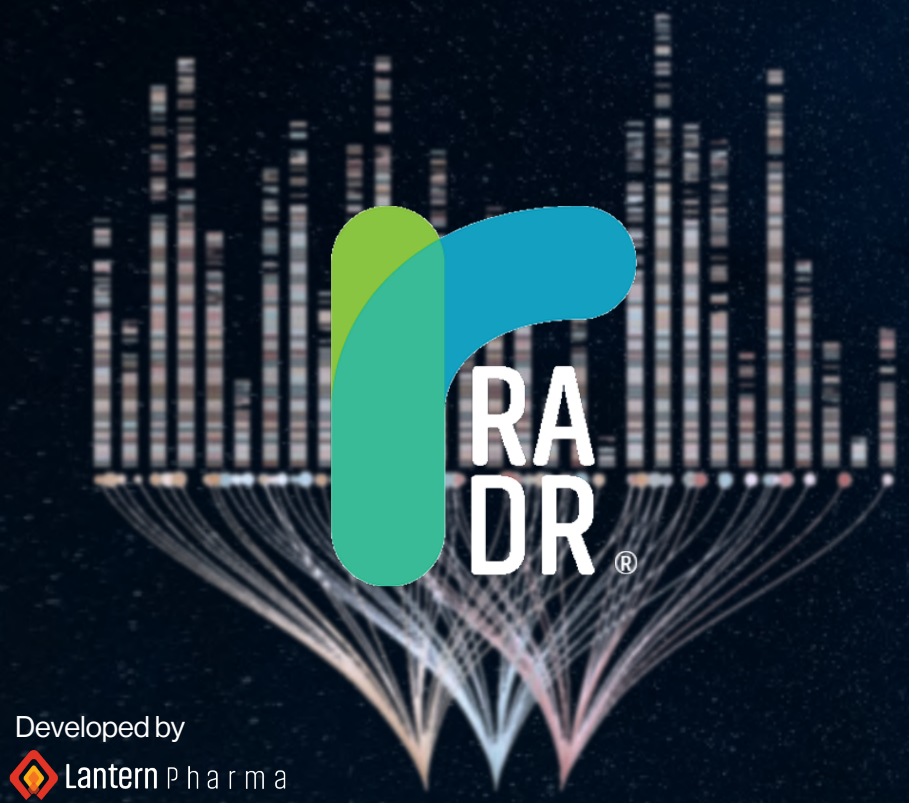
03 Pediatric CNS Cancers

4,000/yr in USA

There are no approved therapies for atypical teratoid rhabdoid tumors (ATRT)

Annual **5-6B** (USD) Estimated Market Potential

ORIGINATION OF STAR-001(LP-184): RADR PREDICTIONS POWERED BY AI



Leading AI Technology developed by Lantern Pharma, RADR®, Helped Identify

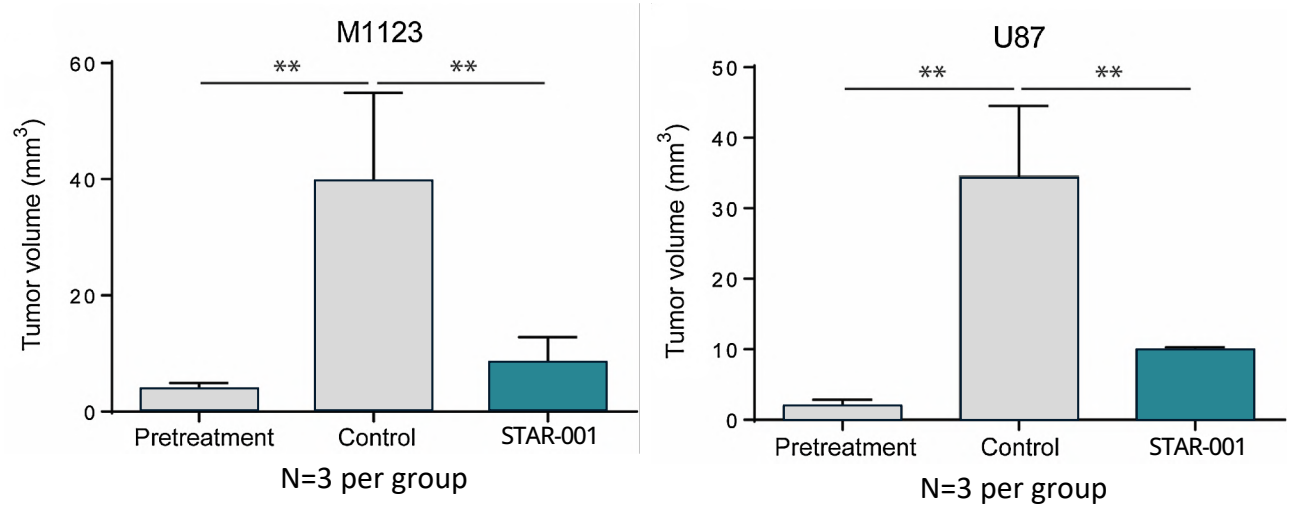
- PTGR1 levels correlate with drug response
- Brain penetrant
- GBM has higher levels of PTGR1 relative to normal brain
- **Novel alkylation site** (at the N^3 adenosine base) **causing replication stress and double-strand DNA breaks**
- Agnostic to MGMT promoter methylation
- Increased activity with alterations in EGFR and SMARCB1
- Synthetic lethality when co-administered with spironolactone or in tumors deficient in DNA damage repair

STAR-001 Demonstrated Significant Tumor Reduction in Both Adult GBM and ATRT Mouse Models

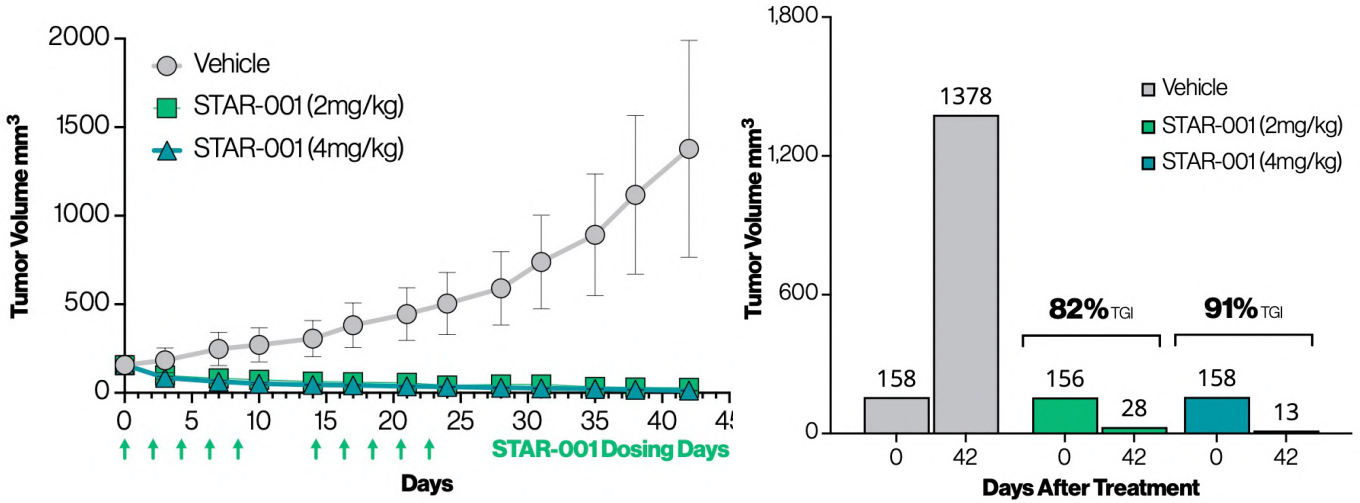
KEY TAKEAWAYS

- STAR-001 reduced M1123 and U87 (GBM cell lines) tumor volume by >75%
- STAR-001 increases survival in ATRT mouse models, decreases tumor volume by >80%
- STAR-001 was granted FDA Fast Track and Orphan Drug Designations to treat GBM, and Rare Pediatric Disease and Orphan Drug Designations to treat ATRT

A GBM Tumor volumes before and after STAR-001 treatment



B STAR-001 treatment of ATRT mouse tumors



RESEARCH SUGGESTS INCREASING INVESTOR AND INDUSTRY INTEREST IN CNS ONCOLOGY

COMPANY	VALUE	TRANSACTION	DATE	STAGE	COMPOUND	INDICATION
CHIMERIX® A Jazz Pharmaceuticals Company	**953 M**	Acquired by Jazz Pharma	April 21, 2025	PDUFA After Phase II Trial	Dordaviprone	H3K27M Mutant Gliomas
ModifiBio	**1.3 B**	Acquired by Merck	October 23, 2024	Preclinical	MOD246	TMZ-Resistant GBM
Day One BIOPHARMACEUTICALS	**461 M**	Ex-US rights only sold to Ipsen	July 25, 2024	Phase III Trial	Tovorafenib	RAF-altered PLGG (pediatric low-grade glioma)
agios	**2 B**	Servier acquired Agios CNS oncology	April 1, 2021	Phase II	Vorasidenib	Grade 2 IDH Mutant Gliomas

IP Portfolio

Intellectual property portfolio builds expanding protections with additional barriers to competition

100+ Issued Patents & Pending Applications

5 Families
Drug Sensitivity & Response Signatures using Biomarkers

11 Families
Methods of Use

2 Families
Composition of Matter

RADR

2041*
Identifying suitable cancer types and subtypes for a drug candidate

2043*
Applying ensemble methods in machine learning and deep learning for drug discovery

2044*
Predicting blood-brain barrier permeability

LP-300

2041*
Determining sensitivity to LP-300 based on biomarkers

2041*
Treating female (non-smoker) patients with non-small cell lung cancer

Increasing cancer patient survival time using LP-300

LP-184

2041
Treating rhabdoid tumors with LP-184

2039*
Treating solid tumor cancers using LP-184 and biomarker

2041*
Treating pancreatic cancer using LP-184

2042*
Treating cancers with spironolactone and LP-184

LP-284

2040
Composition of Matter

2041*
Treating blood cancers with LP-284

Patent Highlights

**Pending patent application. Date referenced indicates estimated year of expiration if the patent is granted.*

Financial Highlights And Cap Table

- **Raised additional gross proceeds of up to $9.25M** (approximately $4.4M in funding closed on May 14, 2026 and up to additional $4.85M of investor warrants at $2.27 per share exercise price)
- **Approx. $6.3M of cash, cash equivalents and marketable securities as of March 31, 2026**

LANTERN PHARMA INC. (LTRN – Nasdaq)	
52 Week Per Share Price Range (through 7/1/26)	$1.11-$5.74
Basic Shares Outstanding (7/1/26) – includes pre-funded warrants	13.4M
Fully Diluted Shares Outstanding (7/1/26)	17.2M

Leadership & Board of Directors

Leadership

PANNA SHARMA
Chief Executive Officer & President

PRIOR: President & CEO, Cancer Genetics (CGIX); CEO & Managing Partner, TSG Partners; Managing Member, Oncospire Genomics (Joint Venture with Mayo Clinic); CSO, iXL Services

DAVID MARGRAVE
Chief Financial Officer

PRIOR: 20+ years of oncology focused management experience; Chairman, Texas Healthcare & Bioscience Institute (current); President & CAO, BioNumerik Pharmaceuticals

KISHOR BHATIA, Ph.D.
Chief Scientific Officer

PRIOR: 40+ years experience in cancer research; Director, Children's cancer Center Riyadh; Director Office of AIDS Malignancy Program, NCI

REGINALD EWESUEDO, M.D., M.S.c., MBA
VP of Clinical Development

PRIOR: VP, Kymera Theraputics
VP, Tesaro/GSK
VP, Pfizer

MARC CHAMBERLAIN, M.D.
Chief Medical Officer of Starlight

PRIOR: Co-director of Neuro-oncology program, UC San Diego; USC; Moffitt Cancer Center; Fred Hutchinson Cancer Center; Medical Director, Cascadian Therapeutics; SeaGen; SystImmune; Pionyr Immunotherapeutics

SANDRA SINCLAIR, BSBA, MHA/ED, RN
Executive Director, Clinical Operations

PRIOR: 30+ years in clinical operations and trial execution
Alaunos Therapeutics; SAB Biotherapeutics; MD Anderson Cancer Center

Board of Directors

- **Donald "Jeff" Keyser, J.D., MPH, Ph.D.**
  Non-executive Chairman
- **Maria Maccecchini, Ph.D.**
- **David Silberstein, Ph.D.**
- **Lee Schalop, M.D.**
- **Vijay Chandru, Ph.D.**
- **Panna Sharma**
  CEO and President

2026 Investment Highlights

Recent Milestones

- Preliminary patient data showing an 86% clinical benefit rate in the initial safety lead-in cohort of the Harmonic™ Phase 2 Trial
- Received FDA clearance of IND for planned pediatric Phase 1 STAR-001 CNS cancer trial
- Reported 8.4-month median PFS in EGFR L858R NSCLC patients in HARMONIC™ Phase 2 trial
- Delivered complete metabolic response after two cycles of LP-284 for in a heavily pre-treated lymphoma patient
- Advanced predictBBB.ai into a real-time molecular intelligence engine for small molecule characterization and developability profiling
- Unveiled roadmap for withZeta.ai featuring ZetaSwarm™ and ZetaOmics™ multi-agentic AI capabilities
- Expanded the Harmonic™ trial to Taiwan and Japan with 5 sites in each country and completed enrollment in Japan

Upcoming Milestones & objectives

- Complete further analysis of Phase 1a LP-184 results; pursue Phase 1b/2 and investigator or grant led opportunities
- Advance enrollment for LP-284 in NHL + soft tissue sarcoma and initiate partnering discussions
- Report initial clinical data for Asian cohort in the Harmonic™ Trial and updates on the US patient population
- Progress and monetize Starlight Therapeutics towards Phase 1/2 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 Phase 1 launch and/or partnership
- Develop and communicate combination programs and trials for Lantern's portfolio with existing FDA approved drugs

Lantern Pharma®

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