

Lantern Pharma Inc. Corporate Overview May 10th, 2023

Leveraging A.I., machine learning & genomics to transform the **cost**, **pace**, **and timeline** of oncology drug discovery and development

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 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 and ADC 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 and ADC candidates and to maximize their commercial potential by advancing such 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 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.

Current Oncology Drug Development is Costly, Risky, and Inefficient

A perfect problem area for artificial intelligence & machine learning

Challenges in drug development...

3.4% Avg. success rate of oncology drugs **\$2.8B** R&D investment to bring a

new cancer drug to market 2019 ...are being met by data-driven, and A.I.-enabled approaches & technology



12X Success rate of oncology trials using biomarker 20,000+

Oncology trials conducted from 2012-2022

Using AI, Lantern is Transforming Drug Discovery Timelines and Cost

Lantern has launched **9 programs** in two years, and is anticipating launching Multiple Phase 1 trials in 2023

Lantern's Drug Development Model



Large Scale/Multi-omics Oncology Data



Proprietary Al platform RADR[®]



Accelerated timeline and reduced cost

Transforming Early-Stage Discovery & Development



"In around **two years**, Lantern has progressed its GBM program from initial RADR[®] insights, to wet lab validation, to late stage IND enabling studies - significantly cutting typical drug development timelines and cost"

(Biopharmatrend, 2022)

Sharpening Later-Stage Clinical Trials



"**Al-driven patient stratification** helps to focus clinical trials with potentially fewer and more select patients, which are more likely to respond, ultimately saving time and money"

(Panna Sharma)



RADR[®] is Lantern's AI and Machine-Learning Platform that Powers Oncology Drug Discovery and Development



Response Algorithm for Drug Positioning & Rescue

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



80%+ RADR[®]'s Multi-Faceted AI Modules Prediction **Discover Mechanism of Action of Any** Success **Compound or Drug** 130K+ Identify and Prioritize a Compound's Disease Patient **Indications or Subtypes** Records **Determine Optimal Drug Combinations to** 154+ **Improve Therapeutic Potential** Drug-tumor **Generate Machine Learning-Driven Biomarker** interactions **Signatures for Clinical Trial Patient Selection** 200+ **Characterize Specialized Attributes of a Molecule -** Including Predicting Blood Brain Advanced ML **Barrier Permeability** Algorithms



RADR®'s Framework to Develop Actionable AI Insights Using Billions of Datapoints



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RADR[®]'s Library of Over 200+ Advanced Algorithms Powers its Drug Development Capabilities





Examples

- Predicting drug sensitivity values, e.g. IC50
- Predicting blood brain barrier (BBB) permeability of a compound
- Predicting synergy values by combining compounds
- Identifying patient populations that can be targeted through a MoA
- Stratifying patients as <u>responder</u>, <u>partial-responder</u>, or <u>non-responder</u>
- Biomarker pattern-based patient clustering
- Predicting outcomes for companion diagnostic usage in a clinical trial
- Diversity of algorithms allow us to handle various input data types and solve different biological problems
- Lantern has filed patents for ensemble algorithms in cancer drug development

Lantern Pharma is a Top 10 End-to-End Al Drug Discovery Company

Comparison of Top-40 Leading AI for Drug Discovery Companies Expertise in Drug Discovery R&D





RADR[®] Solves one of the Most Challenging Problems in Brain Cancer Drug Discovery – Predicting any Compound's Blood Brain Barrier Permeability

What is the Blood-Brain-Barrier (BBB)?

Blood-brain-barrier (BBB) is 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 Developed Industry Leading and Top Ranked AI Algorithms to Predict BBB Permeability of Any Compound

TOP 4

Best performing BBB prediction algorithms by The Therapeutic Commons (TDC)

89-92%

Highly accurate BBB permeably predictions

Ultra Fast

Prediction generation time in ~1 minute

Scalable

Capable of rapidly screening thousands of compounds simultaneously



<u>BBB drug prediction challenge conducted</u> by <u>Therapeutics Data Commons (TDC)</u>,

Leaderboard

Rank	Model	Contact	Link	#Params	AUROC 1
1	Lantern RADR Ensemble	Rick Fontenot	GitHub,	267,439	0.962 ±
			Paper		0.003
2	Lantern RADR Logistic Regression	Rick Fontenot	GitHub,	456	0.956 ±
			Paper		0.006
3	Lantern RADR Deep Neural	Rick Fontenot	GitHub,	266,881	0.949 ±
	Network		Paper		0.004
4	Lantern RADR Random Forest	Rick Fontenot	GitHub,	319	0.928 ±
			Paper		0.002
5	ZairaChem	Gemma Turon	GitHub,	N/A	0.910 ±
			Paper		0.024

Lantern's AI BBB permeability prediction algorithms were evaluated and scored in the <u>BBB drug prediction challenge</u> conducted by <u>Therapeutics Data Commons</u> (<u>TDC</u>), a coordinated initiative to evaluate AI capabilities across therapeutic modalities and stages of discovery.



ADCs are one of the Fastest Growing Drug Segments and can be Developed Faster and More Effectively with AI

What are Antibody Drug Conjugates (ADCs)? Rapidly growing global ADC market Antibody drug conjugates (ADCs) are highly specific cancer-targeted antibodies linked to potent anti-tumor small molecules and designed for the treatment of cancer \$4+ billion currently valued at **High Specificity of** Antibody Antibody-directed Antibodies killing of cancer cells, Linker with the potential for value by 2027 **\$14+ billion** reduced damage for **High Potency of** Cytotoxic normal cells molecules Cytotoxic Molecules

RADR[®] has the potential to assist in advancing ADC drug candidates from the discovery phase to first-in-human clinical trials in approximately **2 years or less** by ...



- 1. **Significantly enhancing the selection of optimal combination ADC components including:** Targeted antibodies, Antibody linkers, and Cytotoxic payloads
- 2. Predicting ADC antibody targeting, or immunogenicity
- 3. Determining ADC biomarker signatures to predict patient selection



RADR[®] is Helping Accelerate the Clinical Development of our Collaborator's Drug Candidates

T H E R A P E U T I C S

Actuate Therapeutics, Inc. is a private clinical stage biopharmaceutical company focused on the development of compounds for use in the treatment of cancer, and inflammatory diseases leading to fibrosis.



TC Oncology is an emerging biotechnology company founded in 2015. TTC Oncology's mission is to develop and bring to market a novel, small-molecule therapy, TTC-352, to address the unmet needs of breast cancer patients. TTC has a license from the University of Illinois at Chicago covering the therapy.

Key RADR[®] Al insights for elraglusib (9-ING-41)*

- Developed a breakthrough AI model to identify potential responders and non-responders from Phase 1 trial
- Discovered actionable genetic biomarkers
- Insights and biomarkers are informing design of an upcoming Phase 2 clinical trial

Future directions of collaboration

- Development and application of novel RADR[®] algorithms and computational methods
- Incorporation of new elraglusib patient data including: RNA, ctDNA, and protein biomarkers
- Lantern received equity in Actuate as part of the collaboration

*elraglusib is a widely researched GSK-3β inhibitor. Currently, elraglusib is in multiple active Phase I/II clinical trials as a monotherapy and in combination with other agents (<u>NCT03678883)</u>

About TTC Oncology's Drug Candidate TTC-352

- Phase 2 clinical trial ready drug candidate
- Being developed for metastatic ER+ breast cancer
- First and best in class selective human estrogen receptor partial agonist

Initial aims of collaboration for TTC-352

- Identify biomarker or gene signatures to power potential patient selection for an upcoming Phase 2 clinical trial
- Further characterize TTC-352's mechanism of action
- Discover additional treatment indications for TTC-352

Terms of collaboration

 Lantern Pharma is receiving an exclusive right to license TTC-352, including any collaboration intellectual property (IP), during an exclusive option period



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

Lantern has 14 disclosed and collaborative drug programs including the Phase 2 Harmonic[™] trial

Program		Indication	Discovery	Optimization	Preclinical	Pre IND	Phase I	Phase II
LP-300	Non-Small Cell Lu	ung Cancer (NSCLC)						Mharmonia
LP-100	Homologous Repair Deficient Cancers (In combination with PARPi therapy)							•
LP-184	Solid Tumors	Pancreatic Cancer					Orphan Drug Desig	nation
		Bladder Cancer					,	
		TNBC					•	
LP-284	Non-Hodgkin's Lymphomas	Mantle Cell				Orphan	Drug Designation	
		Double Hit						
ADC	Select Solid Tumo	ors						
			Rescued Drug (andidates 🛑 New	ly Developed Molecules	Antibody Dru	ug Conjugate	
RADR [®] Collaboration	Elraglusib owned by - Actuate Therapeutics	Multiple Solid Tumors						
	TTC-352 owned by- TTC Oncology	ER+ Breast Cancers						
starlight therapeutics	STAR-001 (LP-184 for CNS and Brain indications only)	Glioblastoma (GBM)					Orphan Drug Desig	gnation
		Brain Mets (Lung, Breast, Skin)						
		ATRT				Orphan I	Drug & Rare Pediatri	c Disease Designation
		Pediatric Brain Cancers						



The Harmonic[™] Trial for Never Smoker Patients with NSCLC

Harmonic[™] for LP-300 recently dosed the first patient and is actively enrolling additional trial sites and patients

Innovative and Additional Value Drivers for Never Smokers with NSCLC and their Cancer Care Community

(1) Harmonic™ iPhone App

- First of their kind **iPhone apps** launched for the Harmonic[™] clinical trial
- The new Harmonic[™] trial apps provide physicians, patients, caregivers, and the cancer community with mobile access to up-to date information
 - 1. How NSCLC is different in never-smokers
 - 2. What taking part in the Harmonic[™] trial involves
 - 3. How to contact the Harmonic[™] clinical trial team
 - 4. Information on the investigational new drug, LP-300
 - 5. Locations of all currently active clinical trial sites
 - 6. Education & awareness for the NSCLC community



2 Liquid Biopsies

• Trial will collect liquid biopsies and acquire genomic/transcriptomic data from patients. Will represent one of the largest biomarker studies done on the never-smoker population.



3 Global Partnering Opportunities

Exploring global partnering discussions, for areas with high prevalence of never smokers with NSCLC

"... higher in East Asia, approximately **one third** of all lung cancer patients are never smokers (39.7% in China, 38% in South Korea, and 32.8% in Japan)"

(Zhou & Zhou, 2018)





A Nearly Doubling of Survival Outcomes Has Been Previously Observed in Never / Non Smokers with NSCLC Receiving LP-300 + Chemo.*

*cisplatin and paclitaxel



- LP-300 + Chemotherapy in Never Smokers with NSCLC:
 + 91% Overall Survival, +125% 2 Year Survival
- Administered to over 1,000 people
- · Generally well tolerated

NSCLC has a Different Molecular Profile in a Never Smoker

Mutation Frequency by Smoker Status



Lung Cancer in never smokers has **higher percentage of genetic mutations in Tyrosine Kinases (TK),** a family of cancerpromoting genes, such as EGFR, ALK, ROS and MET

How LP-300 + Chemo Work in Never Smokers with NSCLC

Never smokers have a different mutational profile compared to smokers, including more frequent but quieter mutations in the Tyrosine Kinases (TK) gene family

LP-300's Unique Mechanisms of Action

Combined MoAs focused on slowing growth and spread of cancer cells

- Bind and inactivate cancer causing TK's proteins and receptors
- Sensitize cancer cells to chemotherapy
- **Protect** patients from chemotherapy side effects

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LP-300's MoA Targets Pathways Implicated in Never Smoker with NSCLC



LP-300 has additional MoA's that can give it chemo-protective and chemo-sensitization properties



- 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

LP-300 Directly Engages with ALK Via Cysteine Modification

Images of LP-300 directly binding to cysteines on ALK proteins



LP-300 adduct at

Cys1235



highlight)



LP-300 adduct at **Cys1156** Molecular surface of ALK with the LP-300derived adduct at Cys1156 (yellow

Binding site of the LP-300-derived adduct at Cys 1235 (yellow highlight)

LP-300 binding to ALK inactivates it in a dose dependent manner



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





LP-184 has a Unique Mechanism of Action Leveraging Synthetic Lethality

LP-184's MoA was predicted by RADR® and validated with in-vitro/in-vivo studies

Α.

PTGR1 activates LP-184 into its highly potent and cytotoxic form

In-vitro experiments confirmed the RADR[®] insight and that LP-184 was highly potent in cells with overexpression of PTGR1





Cancer Models with Common DNA Damage Response Deficiencies are Highly Sensitive to LP-184 Treatment

PDX model	Cancer type	IC50 (nM)	DDR Mutations
ctg1194	NSCLC	31	ATM
ctg2440	Prostate	31	PMS2
ctg1522	Pancreatic	45	ATR, BRIP1, PARP1
ctg2532	NSCLC	54	CHEK1, FANCA, NBN, RAD50
ctg3167	Prostate	54	BRCA2, ATM, FANCA, FANCI, FANCM
ctg3537	Prostate	54	BRCA2, CDK12, FANCI, RAD54L,
ctg0166	NSCLC	57	ATM, FANCD2, NBN
ctg1643	Pancreatic	57	BRCA1, BRIP1,
ctg2429	Prostate	92	ATM, ATR, PALB2,
ctg0302	Pancreatic	110	BRCA2, ATM, BLM, FANCA
ctg1680	NSCLC	140	PARP2
ctg0192	NSCLC	200	BRCA1, RAD54L
ctg3337	Prostate	230	RAD51C
ctg0314	Pancreatic	270	BRCA2, CDK12, PALB2
ctg0381	Pancreatic	2,900	ATM, BRCA1, BRCA2

- PDX-derived cell lines with mutations in key HR and NER genes are highly sensitive to LP-184
- Only 1 model was not highly sensitive to LP-184 (highlighted in blue)

LP-184 Completely Inhibits Tumor Growth in Triple Negative Breast Cancer (TNBC) PDX Mouse Models

- Across 10 TNBC PDX mouse models LP-184 treatment resulted in 107-141% tumor growth inhibition
- All 10 TNBC PDX models were HR deficient
- 7/10 TNBC models were resistant to PARP inhibitors Olaparib/ Niraparib and to doxorubicin/ cyclophosphamide

LP-184 Treatment Results in Complete Regression in DNA Damage Repair (DDR) Deficient Pancreatic Cancer PDX Models

Key Highlights of LP-184 for Pancreatic Cancer

- 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
- Combination therapy potential with SOC agents: Spironolactone, PARP inhibitors, Gemcitabine, Irinotecan, Oxaliplatin
- Phase 1 clinical trial anticipated for Q2 2023
- FDA Orphan Drug Designation granted for LP-184 to treat pancreatic cancer

Combining LP-184 with SOC Agents Significantly Enhances its Potency

In-vivo LP-184 has synergy with several SOC agents including Spironolactone, Radiation Therapy, and others.

LP-184 + Radiation in the Panc03.27 CDX Model

- **Spironolactone** is an FDA approved agent that can impair DNA damage repair pathways
- **Combination** of LP-184 or LP-284 with Spironolactone:
 - 1) Enhances potency
 - 2) Decreases expected dose needed for treatment
 - 3) Exploits MoA of both drugs

- Terminal tumor volumes from the RT + LP-184 treatment group are significantly (**p < 0.01) smaller than treated with RT or LP-184 alone
- Mean tumor volumes of RT + LP184 were ~1.8 fold lower than tumors treated with LP-184 alone

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Launch of LP-184's Phase 1A Trial is Anticipated in Mid-2023

LP-184 Clinical Trial Updates and Design

- Anticipated Phase 1A Clinical Trial Dates
 - IND application submission Mid-May 2023
 - Study-start up Q2 2023
 - 1st patient dosed Summer 2023

Clinical Trial Design

- Bayesian optimal interval (BOIN) design
- Anticipated starting dose of 0.015 mg/kg, based off IND enabling studies in dogs
- Targeting up to 30-35 patients
- Future clinical trial sites anticipated at top comprehensive centers in the US:
 - Fox Chase Cancer Center
 - Johns Hopkins
 - Multiple additional sites

LP-284 was Developed from RADR[®] Insights to Late-Stage IND Enabling Studies in Less Than 2 Years for Non-Hodgkin's Lymphomas

LP-284 for non-Hodgkin's B-cell lymphomas

- Mantle Cell Lymphoma
- Double Hit Lymphoma

Program Highlights

\$1.2 billion

U.S. & Europe annual market potential

- LP-284 has nanomolar potency against several aggressive non-Hodgkin's lymphomas (NHL) including mantle cell and double hit
- In-vivo LP-284 can rescue tumors resistant to MCL standard-of-care agents Ibrutinib and Bortezomib
- Enhanced potency when used in combination with other approved agents like Spironolactone
- FDA granted Orphan Drug Designation for mantle cell lymphoma
- Results from preclinical studies have been published at ASH 2021, ASH 2022, and SOHO 2022
- Received notice of allowance from the USPTO for the composition of matter patent, no. 17/192,838, covering the molecule LP-284

Phase 1 Trial Launch in 2023*

Q2 2023	Q3 2023	2023
Complete IND enabling studies an	Phase 1 Trial Launch	

LP-284 Treatment Demonstrates Stronger Anti-Tumor Potential in Mouse Models Compared to Current MCL Therapies

LP-284 Significantly Decreases MCL Tumor Volumes in Mice vs Standard of Care Agents

LP-284 Increases Probability of Survival in Mice vs Standard of Care Agents

Days After Treatment

Superior Responses to LP-284 are Observed in Several Non-Hodgkin's B-Cell Lymphomas Including Those Resistant to SOC Agents

LP-284 exhibits **nanomolar potency** in numerous non-Hodgkin's lymphomas cell lines including: mantle cell, doublehit, Burkitt's, double expressor, and anaplastic large cell lymphoma

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

Starlight Therapeutics' CNS and Brain Cancer Programs were Born from Billions of Datapoints and Al

There are over **120 types of central nervous system (CNS)** and **brain cancers** and a majority have **no effective treatment options**

- No effective single-agent therapies have been approved for glioblastoma (GBM) in over 17 years
- Effective therapies are needed to improve outcomes for brain mets. patients
- There are no approved therapies for atypical teratoid rhabdoid tumors (ATRT)
- CNS indications were developed using AI in less than 2 years

- **\$5-6 Billion** Annual Market Potential*
- 500,000+ Potential CNS Patients Globally*
- Multiple Clinical-stage CNS Cancer Indications
- STAR-001 has been Granted FDA Orphan Drug and Rare Pediatric Disease Designations
- World Class Collaborators from Johns Hopkins and UT Health San Antonio
- 4 US Patents & Patent Applications and 10+ Foreign Pending Patent Applications

Multiple Clinical Trials are Planned for STAR-001

- Nanomolar potency gives multiple shots on goal in CNS cancers
- Excellent blood brain barrier permeability
- Improved bioavailability over current SOC Agents

- Target CNS indications have limited or no effective therapies
- Upcoming **Phase 1/2 trials** for adult CNS cancers
- Upcoming **Phase 1 trial** for pediatric CNS cancers

STAR-001 has Multi-billion Market Potential In CNS Cancers \$5-6 billion (USD)

Global Annual Estimated Market Potential

Glioblastoma \$1.5-2 billion Annual US Cases 13K

Other HGGs \$1.2 billion Annual US Cases 22K

Brain Mets. (Lung, Breast) \$3 billion Annual US Cases 100K

ATRT & Pediatric CNS

\$0.1 billion ATRT Annual US Cases 600+

Intellectual Property Portfolio Builds Expanding Protections with Additional Barriers to Competition

80⁺ Issued Patents & Pending Applications

5 families

Drug Sensitivity & Response Signatures using Biomarkers

7 families Methods of Use

2 families Composition of Matter

LP-300

- In-licensed
- Internally developed

LP-184

- In-licensed
- Internally developed

LP-284

Internally developed

RADR®

Additional Commercial Protections

FDA Orphan Drug Designation

- Granted for Pancreatic Cancer, GBM, and Malignant Gliomas in Aug. 2021, for ATRT in Jan. 2022, and for Mantle Cell Lymphoma in Jan. 2023
- Provides 7 years of market exclusivity
- Complements patent protections
- Reduces costs or provides waivers for marketing/registration fees
- Reduces annual product fees
- Assistance for expedited program development

Pediatric Rare Disease Designation

- Granted in Jan. 2022 for ATRT
- Eligibility for potential **priority review voucher** if applicable and approved
- Priority review voucher can sell in marketplace for \$100-\$120 million

Recent Publications and Posters Highlighting the Strong Validation of RADR[®] Insights, De-risking the Development of Lantern's Drug Candidates

Recent Posters/ Publications

LP-184, an acylfulvene class small molecule therapeutic, is synthetically lethal in DNA damage repair deficient cancers

Apr 2023

LP-184, an acylfulvene class small molecule therapeutic, is synthetically lethal in HR deficient and PARP inhibitor resistant triple negative breast cancer

Dec 2022

Elraglusib (9-ING-41) response prediction and mechanistic discovery using iterative machine learning

Apr 2023

Preclinical efficacy of LP-184, a tumor site activated synthetically lethal therapeutic, in glioblastoma Nov 2022

American Society of Hematology

Development of a Potent DNA Damaging Agent LP-284 for Treatment of Mantle Cell Lymphoma

Dec 2022

aleb Schimke¹, William C. Reinhold², Fathi Elloumi ter Carr¹, Yves Pommier² and Kishor Bhatia

Artificial intelligence platform, RADR[®], aids in the discovery of DNA damaging agent for the ultrarare cancer Atypical Teratoid Rhabdoid Tumors Oct 2022

2023 Objectives

A Transformational year for Lantern

- Advance enrollment of **The Harmonic**[™] **Trial** & increase patient/clinician awareness
- Launch clinical trials for LP-184 and LP-284
- Progress LP-184 (STAR-001) towards Ph. 1 / 2 pediatric clinical trial, including ATRT
- Advance ADC preclinical development to support future Phase 1 launch and/or partnership
- Explore combinations for LP-100, LP-184, LP-284, and LP-300 with other existing approved drugs
- Expand RADR[®] AI platform to 50 billion datapoints
- Establish additional RADR[®] based collaborations with companies and research partners
- Explore licensing and partnership opportunities with biopharma companies
- Continue disciplined fiscal management

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Financial Highlights And Cap Table

Solid financial position and capital efficiency fuel continued growth and give Lantern cash runway into 2025

- Approx. **\$51.5M of cash, cash equivalents and marketable securities** as of March 31, 2023
- Committed to creating enduring growth and value for LTRN shareholders

LANTERN PHARMA INC. (LTRN)	
Exchange	Nasdaq
Stock Price (5/9/23)	\$5.60
Common Shares Outstanding (3/31/23)	10.86M
Market Cap (5/9/23)*	\$60.8M
Warrants (3/31/23)	178K
Options (Employees, Management and Directors) (3/31/23)	1.1M
Fully Diluted Shares Outstanding (3/31/23)	12.13M

*Market Cap based on shares outstanding at 3/31/23.

Lantern's Board of Directors

Investment Highlights

Lantern Pharma (NASDAQ: LTRN)

Active drug rescue process and in the clinic with 2 compounds and accelerating additional compounds and combinations to clinical trials...potentially saving tens of millions of dollars and years of development

Growing AI based platform with clear roadmap to 50+ Bn. datapoints focused exquisitely on cancer therapeutic development and companion Dx in a high growth, high demand \$4 Bn market

Focused on cancer drug market segments with clear clinical need, understood mechanisms, targeted patient populations that exceed 1 million , and multi-billion USD in annual sales potential

A novel ADC platform with the potential to develop
and out-license or partner ADC assets in early phases

Several compounds in place with multiple targeted indications, including LP-184 (received Orphan Disease Designations in pancreatic and GBM & Rare Pediatric Disease Designation for ATRT), which can help accelerate development

Proven and growing library of AI & machine-learning methodologies published at ASCO, AACR, and SNO used to generate novel IP & patents and accelerate discovery by potentially years

Experienced and innovative management team w/ 70+ years experience in cancer and a passion to change the cost and outcome for cancer patients by using AI and genomics – *paradigm changing technologies*

Industry leading collaborations with National Cancer Institute, Georgetown, Johns Hopkins, UT Health San Antonio & Fox Chase Cancer Center

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