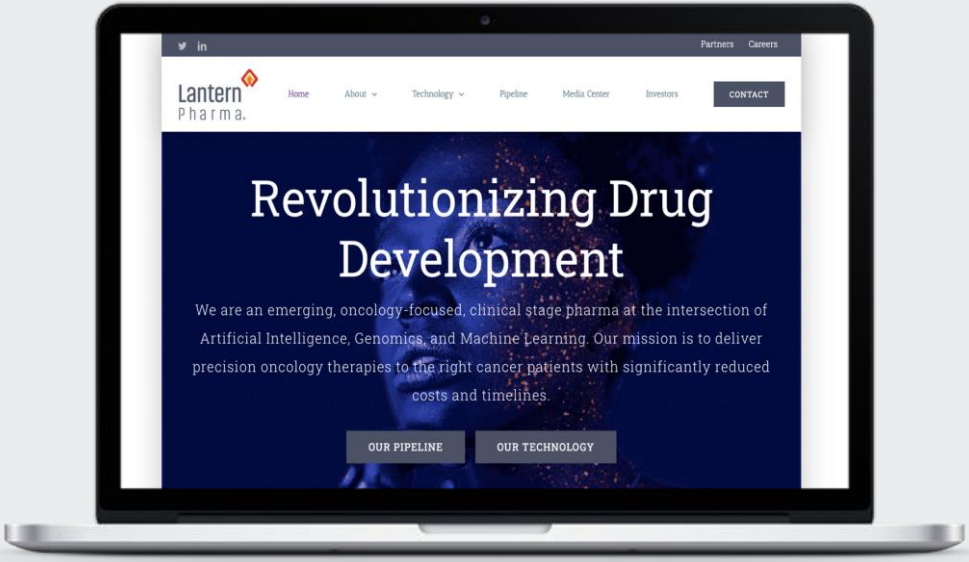
Lantern Pharma®

Third Quarter 2020

Operating & Financial Results Conference Call



https://ir.lanternpharma.com/

OCTOBER 29, 2020
4 PM Eastern

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; estimates regarding the development timing for our drug candidates; our strategic plans to expand the number of data points that our RADR® platform can access and analyze; 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 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 to the effect that Lantern Pharma Inc. or our management "believes", "expects", "anticipates", "estimates", "plans", and words such as “targets,” “objectives” (and 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 the impact of the COVID-19 pandemic, the results of our clinical trials, and the impact of competition. Additional factors can be found in the Risk Factors section in our final prospectus, dated June 10, 2020, for our initial public offering, on file with the Securities and Exchange Commission. You may access our June 10, 2020 final prospectus 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 Pharma

Third Quarter 2020

Operating and Financial Results Conference Call

KEY TOPICS

1. Business Overview & Background
   Panna Sharma, CEO

2. Financial Results & Highlights
   David Margrave, CFO

3. Details on RADR Achieving 1 Billion
   Panna Sharma, CEO

4. Future Milestones & Outlook
   Panna Sharma, CEO

5. Q&A Session

Lantern leverages A.I. to rescue and develop cancer therapies and has the potential to transform the cost, risk and timeline of drug development

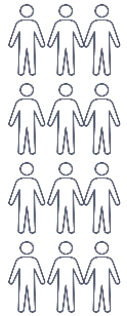
Failed or Abandoned Drug Assets

Drugs that have failed clinical trials or have been abandoned by pharma and biotech companies in late stage trials

RADR®

- Big data (genomic, clinical, response) assembled and analyzed
- Patient subgroups identified through machine learning and artificial intelligence
- Mechanisms of action clarified
- Potential combinations identified
- Potential for faster and more efficient path to relaunching in the clinical trial setting

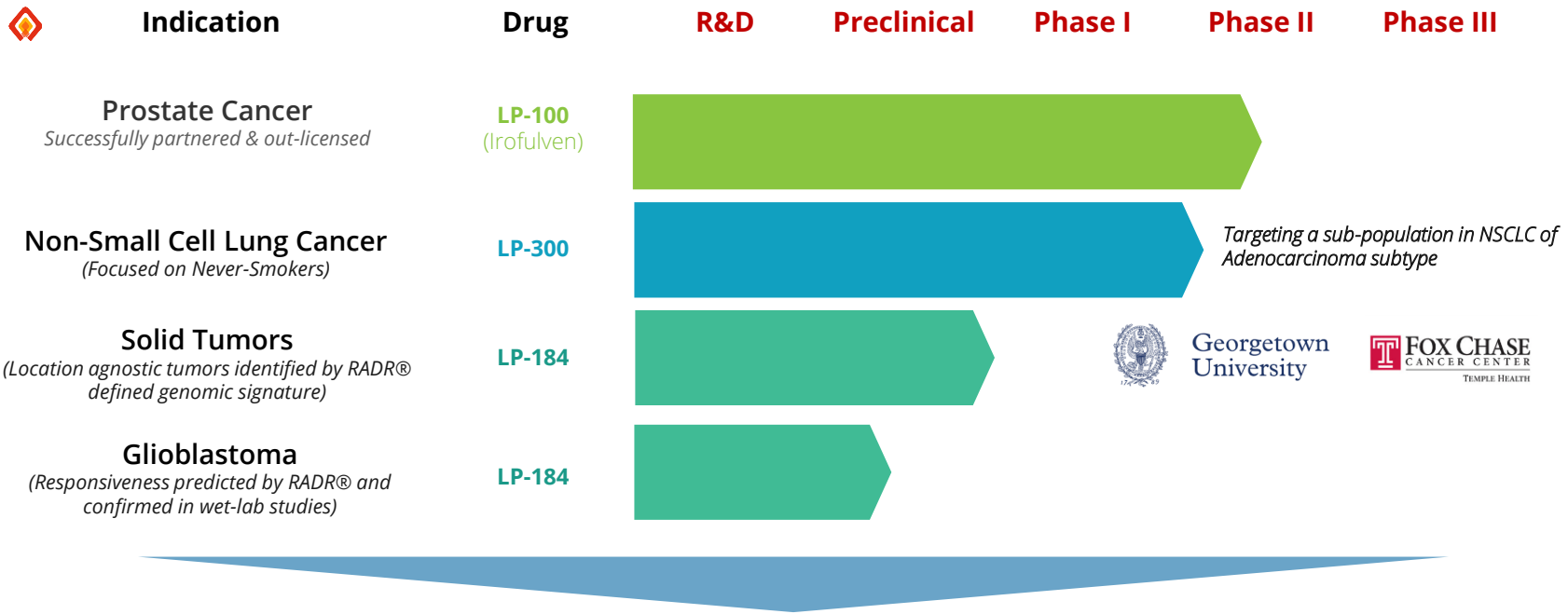
Responders



Non-Responders

- Patient stratification based on A.I. enabled genomic biomarker discovery
- New patient populations for failed or abandoned drugs based on validated biomarker signatures
- Aimed to shorten time to market
- Designed to reduce risk in development
- Potential for orphan or fast track status
- New Chemical Entities designed and filed

Lantern's Unique & Rapidly Developing Pipeline



Accelerated Development by Leveraging the RADR® A.I. platform

106 issued patents and 8 pending applications across 14 patent families

Summary Results of Operations (Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	**2019**	**2020**	**2019**
Operating expenses:				
General and administrative	1,100,719	441,251	2,117,290	977,300
Research and development	600,769	228,401	894,896	775,718
Total operating expenses	1,701,488	669,652	3,012,186	1,753,018
NET LOSS	**$ (1,701,488)**	**$ (669,652)**	**$ (3,012,186)**	**$ (1,753,018)**
Net loss per common share, basic and diluted	$ (0.27)	$ (0.34)	$ (0.82)	$ (0.89)
Weighted Avg. Common Shares Outstanding - Basic and Diluted	6,217,577	1,978,269	3,661,942	1,978,269

Balance Sheet Highlights & Summary

	09/30/2020 *(Unaudited)*	12/31/2019
Cash	**$ 20,802,542**	**$1,232,030**
Prepaid Expenses & Other Current Assets	$1,672,802	788
Total Assets	**$ 22,492,952**	**$ 1,432,576**
Total Liabilities	**$ 923,057**	**$ 489,292**
Total Stockholders' Equity	**$ 21,569,895**	**$ 943,284**

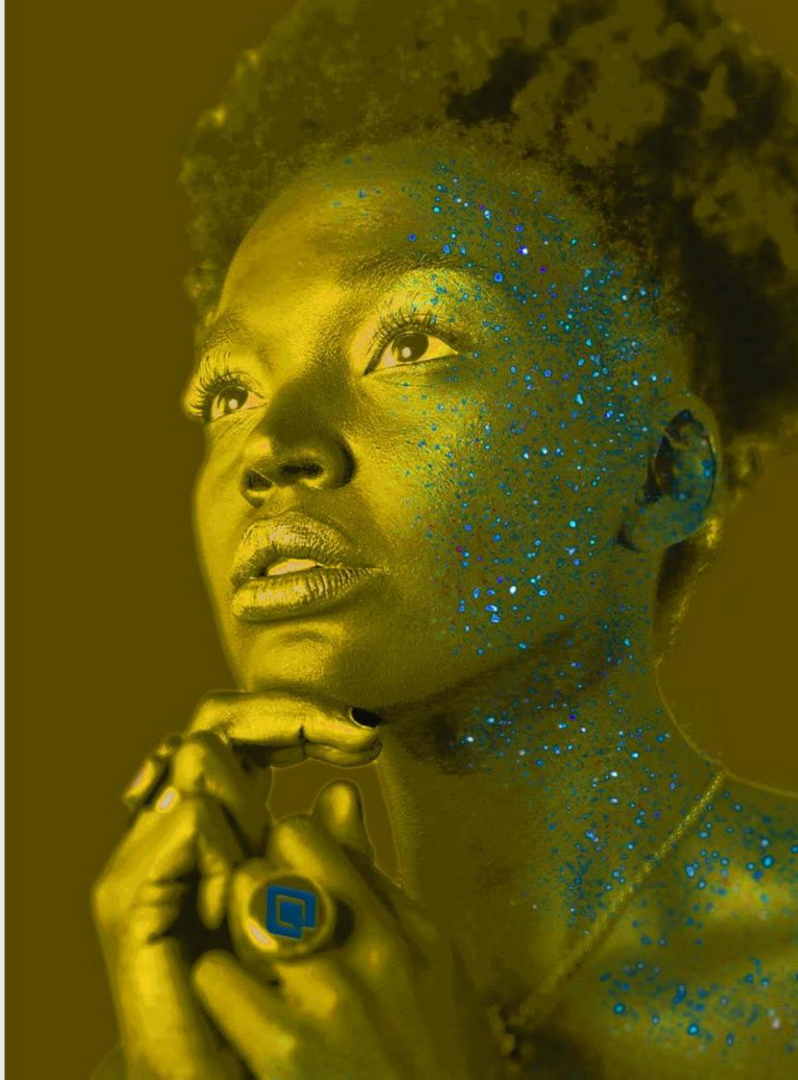
Cash position of $20.8 million as of quarter end provides a strong financial platform, that we anticipate will allow us to support and fuel our business model and growth strategy through at least mid-2022.

Entering “The Golden Age of A.I.”

10 Mega-Trends Setting The Stage for A.I. Led Transformation in Drug Development & Medicine

- Large-scale, relevant and readily available data-sets
- Methods, technologies and algorithms that are massively scalable
- Computing, storage and transmission continue exponential advances
- Rapid rise of global talent and collaboration networks
- Tremendous increase in quality of biological data and methods
- Rise of sequencing as a highly available, on-demand, low-cost service
- Consumers willing to share personal data in near-time
- Industries that have an increasing impetus to transform
- New generation of investors demanding novel value creation
- Executives and entrepreneurs rewarded for rapid change

Lantern is at the forefront of this model of A.I. driven transformation in the area of personalized oncology drug development to drive value for cancer patients and our investors.

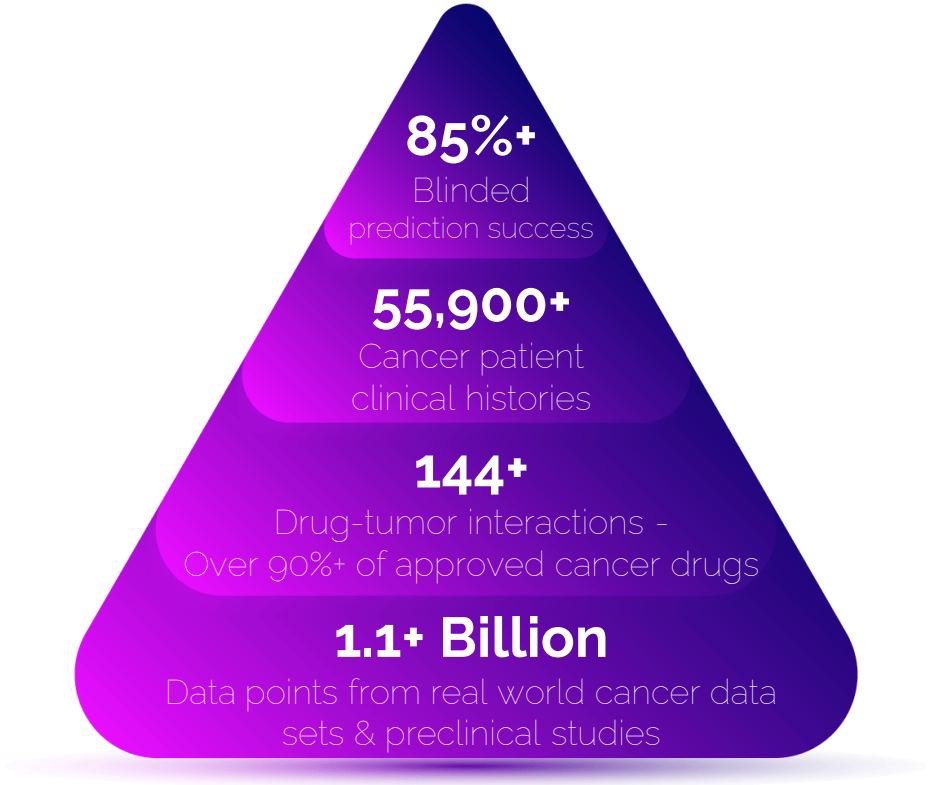


Precision Medicine Platform

RADR® rapidly identifies genetic & biomarker signatures for precision oncology drug development, clinical response prediction and CDx (companion diagnostic) enablement.

We continue to invest in the platform's functionality, scale, and volume of data.

RADR® Platform Key Features & Architecture



RADR® Platform Continues to Grow in Volume and Functionality

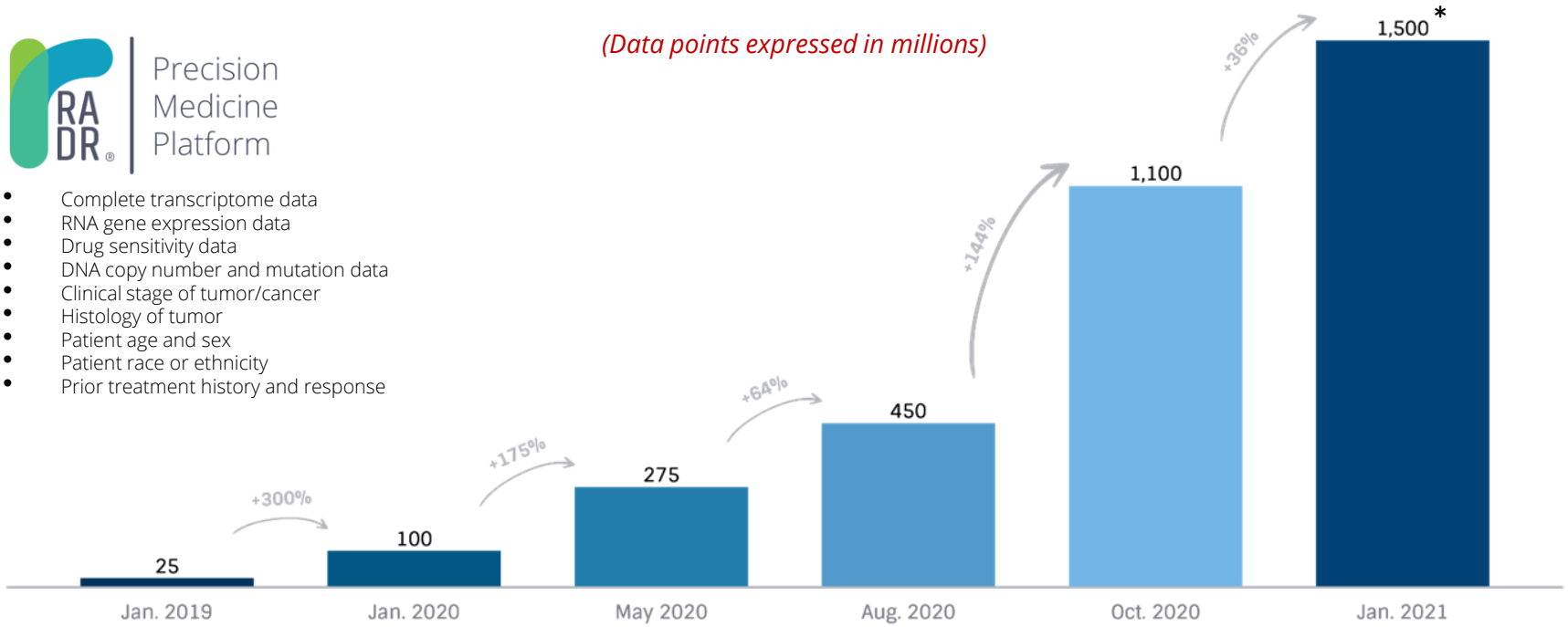
Growth in Data Drives Growth in Capabilities

The Data Powering our AI Platform has grown by **45x** in the past 7 quarters

(Data points expressed in millions)

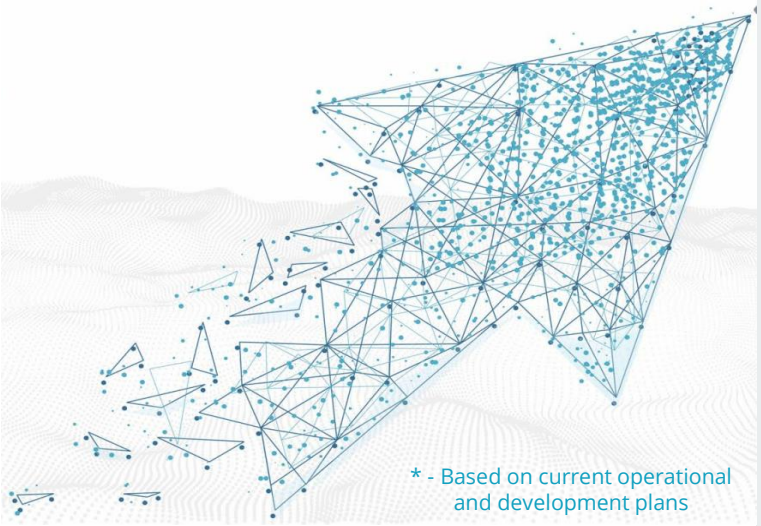
RADR® Precision Medicine Platform

- Complete transcriptome data
- RNA gene expression data
- Drug sensitivity data
- DNA copy number and mutation data
- Clinical stage of tumor/cancer
- Histology of tumor
- Patient age and sex
- Patient race or ethnicity
- Prior treatment history and response



* Expected amount of data based on development plan and pipeline

Precision Medicine Platform



10 Million >	125 Million >	1 Billion >	3 Billion* >	6 Billion* >
2018	2019	2020	2021	2022

Curated Data Sources Include:

- *Historical Trials*
- *Proprietary Internal Studies*
- *Studies & Collaborations w/ Partners*
- *Active Clinical Trials*
- *Trials in adjacent drug classes and tumors*
- *Proprietary Sequencing Campaigns*
- *Proprietary Drug Sensitivity Studies*
- *Open Sources from Publications and Research*
- *Clinical Outcome & Lab Data From Select Groups*

The RADR® Platform Enables…

Scientific Value +

- ✓ Rapid identification of potential compounds to rescue and develop
- ✓ Improved and more nuanced understanding of responder groups, and non-responder groups based on biological networks
- ✓ Feedback for potential mechanisms to be exploited in target-based development activity

Patient Value +

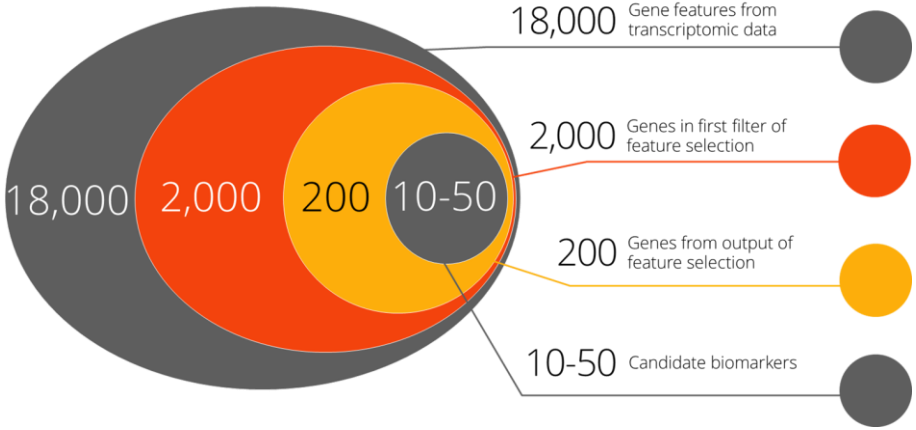
- ✓ More rapid entry into clinical trials and patient subgroups
- ✓ Robust companion diagnostics that can be used to accelerate trials and commercial traction
- ✓ Potential for improved patient outcomes with drastically reduced costs and economic burden

Precision Medicine Platform

RADR® automates machine-learning approaches in generating a biomarker based response signature that can be **used throughout the lifecycle of therapy development:**

1. Preclinical modeling and studies
2. Clarifying mechanisms of action
3. Launching a robust companion diagnostic (CDx).
4. Identifying additional potential combination drugs or therapies

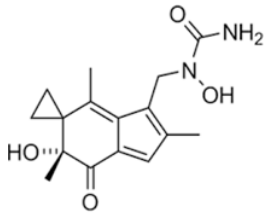
Biomarker Signature is Based on Statistical Significance and Biological Relevance



Output & Signature Development Process

Collaboration Focused on Pancreatic Cancer for LP-184

Structure of LP-184



FOCUS:
The Fox Chase collaboration is focused on advancing the targeted use of LP-184 in molecularly defined sub-types of pancreatic cancer.

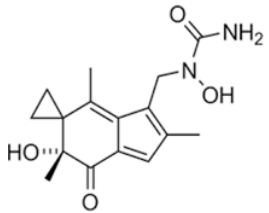
GOAL:
The goal of the collaboration is to create a more biologically relevant and robust gene signature in preparation for future clinical trials, enabling pancreatic cancer patients to potentially benefit from a more effective and personalized cancer therapy. Initial results expected in early Q1, 2021.

LEAD INVESTIGATOR:
The research will be led by Igor Astsaturov, MD, Ph.D., an internationally-recognized researcher in gastrointestinal cancers at the Molecular Therapeutics Program at Fox Chase where he specializes in investigating signaling pathways that inform the choice of biomarkers and innovative therapy combinations in clinical trials. Dr. Astsaturov is known for his research in a number of cancer indications spanning pancreatic, stomach, liver, and several others, as well as his belief that each individual cancer patient will soon be defined by the molecular makeup of their cancer cells.

Collaboration Focused on Prostate Cancer for LP-184

GEORGETOWN UNIVERSITY

Structure of LP-184



BACKDROP:
The first phase of the joint research activities with Georgetown which began in the 4th quarter of 2019 generated strong evidence of the efficacy of LP-184 in certain solid tumors and linked the anti-tumor activity to the presence of specific biomarkers. Phase one of the collaboration was a proof of concept study that demonstrated LP-184 had nanomolar potency across a wide variety of cell lines specifically engineered to study prostate cancer. LP-184 demonstrated increased efficacy in killing prostate cancer cells that overexpress PTGR1, a gene that is often upregulated in aggressive cancer tumors as well as higher anti-cancer activity in cells lines that had targeted DNA damage repair gene mutations.

GOAL:
The next phase of the collaboration and research program with Georgetown will focus on a larger set of PDX models and help pinpoint the specific mechanism of action, and seek confirmatory validation of the role of PTGR1 and the genetic mutations driving the DNA damage repair pathways that make the drug highly potent in these cancers. Research will also focus on completing the acquisition of detailed genomic information in prostate cancers, which will involve work in animal models and cell lines that have been edited to under and over express key driver genes. The goal of phase two of the collaboration is to create a more biologically relevant and robust gene signature in preparation for clinical trials, with the objective of allowing future prostate cancer patients to experience the benefit of a more personalized cancer treatment approach. Ultimately, Lantern's A.I. driven approach could save millions of dollars in drug development costs while significantly accelerating the path to commercialization.

LEAD INVESTIGATOR:
The research is being led by Partha Banerjee, Ph.D., a world-renowned expert in molecular oncology and prostate cancer, and lead investigator for LP-184 at Georgetown University

Key Value Building Objectives

Foundational Year
Advance Platform
Prepare Trial Launches
Prioritize Additional Compounds

4th Quarter 2020 & Early 2021

- Advances for launch of LP-184 IND-Enabling studies
- Data from collaborations w. Georgetown & Fox Chase
- Results from preclinical work & BBB in Glioblastoma w/ LP-184
- FDA related activity to explore launch of Phase 2 for LP-300 for never-smokers
- Potential addition of new drug candidates / programs
- Validate signature for LP-184 to design pan-tumor clinical studies and trial
- Grow RADR® A.I. Platform beyond 1 billion data points & Showcase Platform During an "Analyst Day"

Multiple Streams of Value Creation
Launch Multiple Precision Trials
Leverage Platform for Pharma Partners
Secure Additional Compounds

2021-22

- Readout from targeted Ph. 2 trial in Europe in prostate cancer by first half of 2021 with LP-100
- Launch Ph. 2 clinical trial for LP-300 in NSCLC (never-smokers) by mid 2021
- Launch Ph. 1 clinical trial for LP-184 in solid tumors
- Launch Ph. 1/2 clinical trial for LP-184 in GBM
- Explore potential combinations for LP-184 & LP-300 with other existing approved drugs (inc. I-O agents)
- Strategically grow RADR® A.I. Platform beyond 1 Billion data-points
- Big pharma partnership and collaboration on drug rescue, repurposing or development

Upcoming Conference & Presentation Schedule

11/18/20	Benchmark Discovery One-on-One Conference
12/9/20	Benziga Global Small Cap Conference

Unless otherwise noted, all events are virtual and based on confirmed registration and subject to the policies of the event organizer.

Lantern Pharma

Investor Contact:
Marek Ciszewski, J.D.
ir@lanternpharma.com
ph: 1.628.777.3167

Q & A

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