# Second Quarter 2022
## Operating & Financial Results Conference Call / Webinar

August 8th, 2022
4:30 PM Eastern Time

Lantern Pharma

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 candidates and antibody drug conjugate (ADC) development program; estimates regarding the development timing for our drug candidates and ADC development program; expectations and estimates regarding clinical trial timing and patient enrollment; our research and development efforts of our internal drug discovery programs and the utilization of our RADR® platform to streamline the drug development process; our intention to leverage artificial intelligence, machine learning and genomic data to streamline and transform the pace, risk and cost of oncology drug discovery and development and to identify patient populations that would likely respond to a drug candidate; estimates regarding patient populations, potential markets and potential market sizes; sales estimates for our drug candidates and our plans to discover and develop drug candidates and to maximize their commercial potential by advancing such drug candidates ourselves or in collaboration with others. Any statements that are not statements of historical fact (including, without limitation, statements that use words such as "anticipate," "believe," "contemplate," "could," "estimate," "expect," "intend," "seek," "may," "might," "plan," "potential," "predict," "project," "target," "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® A.I. 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, 2021, filed with the Securities and Exchange Commission on March 10, 2022. You may access our Annual Report on Form 10-K for the year ended December 31, 2021 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

Chief Executive Officer,
President and Director

### David Margrave

Chief Financial Officer

## Host

### Nicole Leber

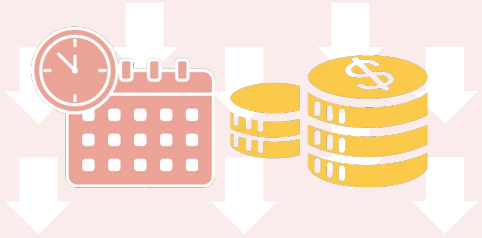
Investor Relations

# Lantern Pharma

*Leveraging A.I. to reduce oncology drug development costs and improve the likelihood of success*

Abundance of data

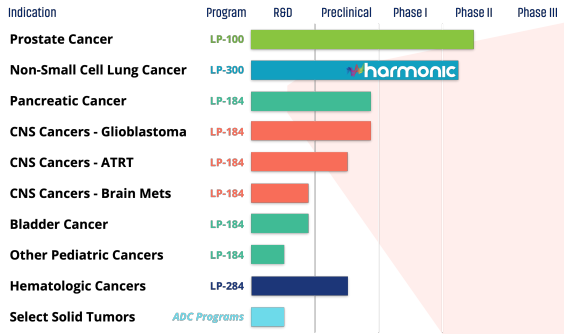

Proprietary A.I. platform RADR®



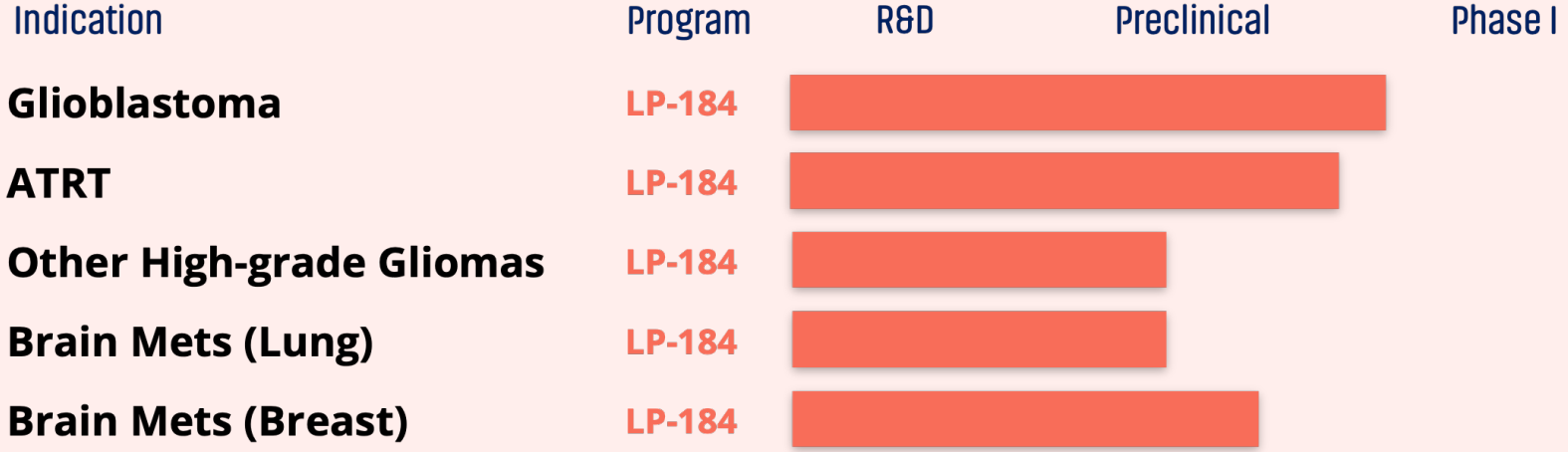
Accelerated timeline and reduced cost

| Indication | Program | R&D | Preclinical | Phase I | Phase II | Phase III |
|---|---|---|---|---|---|---|
| Prostate Cancer | LP-100 | | | | | |
| Non-Small Cell Lung Cancer | LP-300 | | | | harmonic | |
| Pancreatic Cancer | LP-184 | | | | | |
| CNS Cancers - Glioblastoma | LP-184 | | | | | |
| CNS Cancers - ATRT | LP-184 | | | | | |
| CNS Cancers - Brain Mets | LP-184 | | | | | |
| Bladder Cancer | LP-184 | | | | | |
| Other Pediatric Cancers | LP-184 | | | | | |
| Hematologic Cancers | LP-284 | | | | | |
| Select Solid Tumors | *ADC Programs* | | | | | |

# Lantern Pharma's CNS Indications Have Significant Stand-alone Value




## Lantern's CNS indications represent market potential of over $4 Billion USD




### GBM

Estimated
**$1.5-2 Billion**
Market Potential

### ATRT & Pediatric CNS

Estimated
**$0.2 Billion**
Market Potential

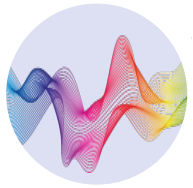
### Brain Mets

Estimated
**$2+ Billion**
Market Potential

### Other High-Grade Gliomas

Estimated
**$0.5 Billion**
Market Potential

# Second Quarter 2022 Highlights



## Harmonic™ Trial

- Submitted IND amendment including a finalized clinical study protocol to the FDA in April 2022 for Phase 2 trial.
- 1st patient is anticipated during Q3 2022.

## LP-184 for Solid Tumors

- Anticipate completing IND enabling studies and submitting an IND application in Q1 2023.
- A Phase 1 clinical trial in solid tumors, including pancreatic & bladder cancers, is anticipated for Q2 2023.

## LP-184 for CNS Cancers

- Preparing a second Phase 1 trial for LP-184 in central nervous system (CNS) tumors in collaboration with Johns Hopkins University.

## LP-284

- Initiated IND enabling studies for LP-284 in the first half of 2022 that are targeted to be completed in Q1 2023.
- Phase 1 clinical trial anticipated for Q2 2023.


## RADR® Expansion

- RADR® has surpassed 21 billion datapoints.
- Significant improvements to machine learning algorithms & modeling tools.
- Additional performance enhancements to platform including large-scale parallelization.

## Collaborations

- Hosted a KOL webinar for GBM and LP-184 for Brain Tumor Awareness Month in May 2022.
- Hosting a KOL Webinar in September for Childhood Cancer Awareness Month featuring Dr. Peter Houghton.

## Upcoming Scientific Conferences

- Lantern will present data from preclinical programs at multiple conferences in the second half of 2022.

## Financial Updates

- $62.2 million of cash, cash equivalents, and marketable securities as of June 30, 2022.
- Lantern has a cash runway into 2025.

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

*The Harmonic Trial for LP-300 Launched in Q2 and Will Begin Enrolling Patients in Q3*

**Harmonic™ is a clinical trial for never smoker patients with relapsed NSCLC**

| multi-site | 90 patients | two arm, open-label, randomized trial | never smoker | Non-Small Cell Lung Cancer |
|---|---|---|---|---|

- **Harmonic™** trial will assess the effect of LP-300 in combination with standard of care (SOC) chemotherapy, pemetrexed and carboplatin, on patient overall and progression-free survival.
- Begin enrolling patients in **Q3 2022** across **multiple sites** in the US, and enrollment is anticipated to last from 12-16 months.
- Initial interim results anticipated to be available during Q4 2023.
- Global partnering discussions for regions of the world with higher prevalence of never smokers with NSCLC, including parts of Asia, South America, and Europe.
- More info: https://clinicaltrials.gov/ct2/show/NCT05456256

**In the United States,**

Lung cancer is the **#1** **cause of death** among cancer patients

**1 in 6**

lung cancer deaths will occur in patients that are **never smokers with NSCLC**

**20,000-40,000**

never smokers will be diagnosed with NSCLC each year

**200,000** patients diagnosed worldwide

Estimated

**$1.5-2 Billion**

**US Market Potential**

Never smoker patients with relapsed NSCLC, represents a potential market size of **$1.5-2.0 billion.**

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

*LP-300 with Chemotherapy Shows a Doubling of Overall and Two Year Survival*

## Never Smokers and NSCLC

### *What is a "Never Smoker"?*

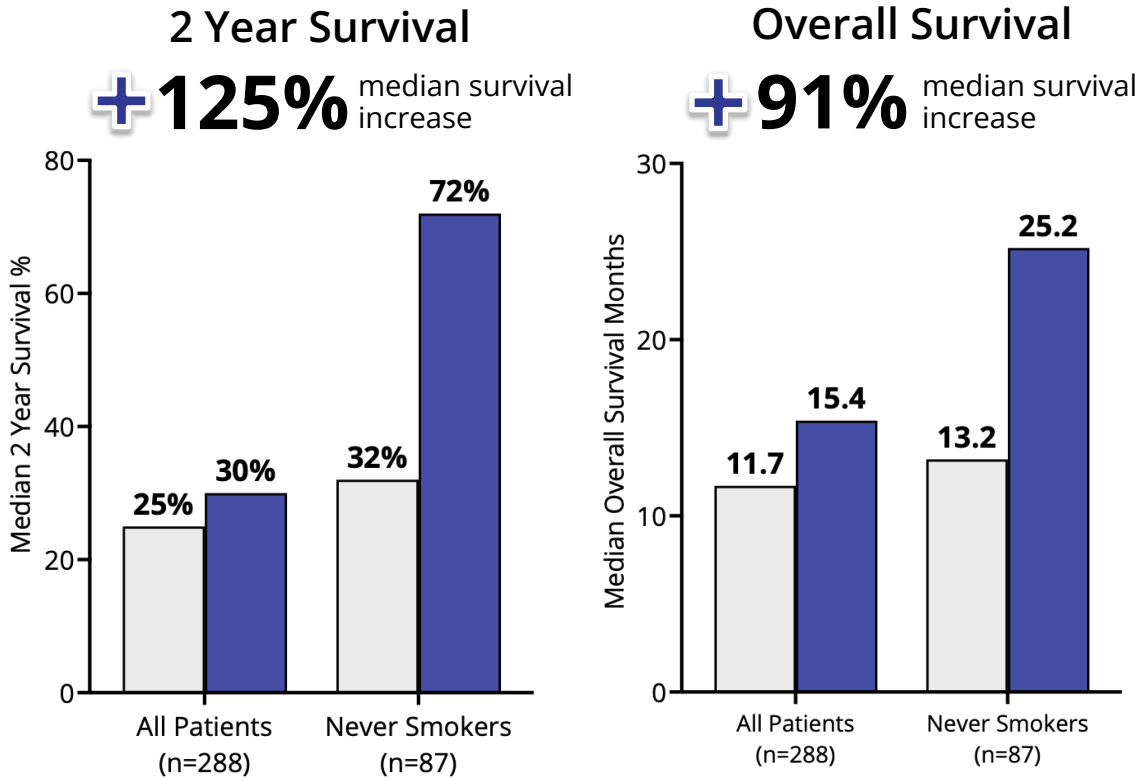
CDC defines a never smoker as an adult who has never smoked or has smoked less than 100 cigarettes in his or her lifetime.

### *Lung cancer is different in a Never Smoker*

NSCLC presents differently in never smokers compared to smokers. These differences are believed due to a higher percentage of genetic mutations in a family of cancer-promoting genes called Tyrosine Kinases (TK). Changes in TK genes, such as EGFR, ALK, ROS and MET, can contribute to the development of healthy cells into cancer cells, leading to tumor formation and growth.

### *Mechanism of Action of LP-300*

LP-300 works together with chemotherapy by interacting in the TK gene pathways and receptors; interrupting their activity to slow or prevent tumor growth and spread.




- In a subset of never smoker patients from a larger NSCLC trial, patients who received LP-300 with chemotherapy showed **increased overall and 2-year patient survival by 91% and 125%**, respectively.
- LP-300 has been administered in multiple clinical trials to more than 1,000 people and has been generally well tolerated.

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

*Harmonic™ Trial Will Provide Unique Longitudinal Assessment of Liquid Biopsies of Never Smokers with NSCLC*

Multiple Liquid Biopsies


Potential Future Clinical Trial Design & Companion Dx

Liquid biopsies will be taken from Harmonic™ clinical trial participants at **4 time points**

- At enrollment, prior to treatment
- After the initial 3 treatments
- After 6 treatments
- At completion of treatment

- The patient samples will be assessed for both genomic and transcriptomic changes & response
- We believe this will represent one of largest and most comprehensive biomarker studies done on the never smoker NSCLC population during treatment
- These insights may be integrated into RADR® to assist in potential patient selection for a future pivotal trial
- This data and analysis may also uncover additional indications and targets for LP-300

# Progress of LP-184 Towards Trials

*LP-184 IND Filing Anticipated in Q1 2023 with Multiple Trial Launches in Q2 2023*

## 01. Phase 1 Clinical Trial for **LP-184** in Solid Tumors

Genomically defined pancreatic, bladder cancers, and other solid tumors

**Expected Timeline**

Targeted for Q4 2022 / Q1 2023 — Targeted for Q2 2023

Complete the IND enabling studies → IND filing → Phase 1 LP-184 trial

**Collaborators and potential sites**

Fox Chase Cancer Center, Temple Health; The University of Texas MD Anderson Cancer Center, Making Cancer History®; BCM, Baylor College of Medicine; UT Southwestern Medical Center

## 02. Phase 1 Clinical Trial for **LP-184** in CNS Tumors

CNS cancers including gliomas and brain metastases (anticipated)

**Expected Timeline**

Targeted for Q4 2022 / Q1 2023 — Targeted for Q2 2023

Complete the IND enabling studies → IND filing → Phase 1 LP-184 trial

**Collaborator**

Johns Hopkins Medicine

# Progress of LP-284 towards trials

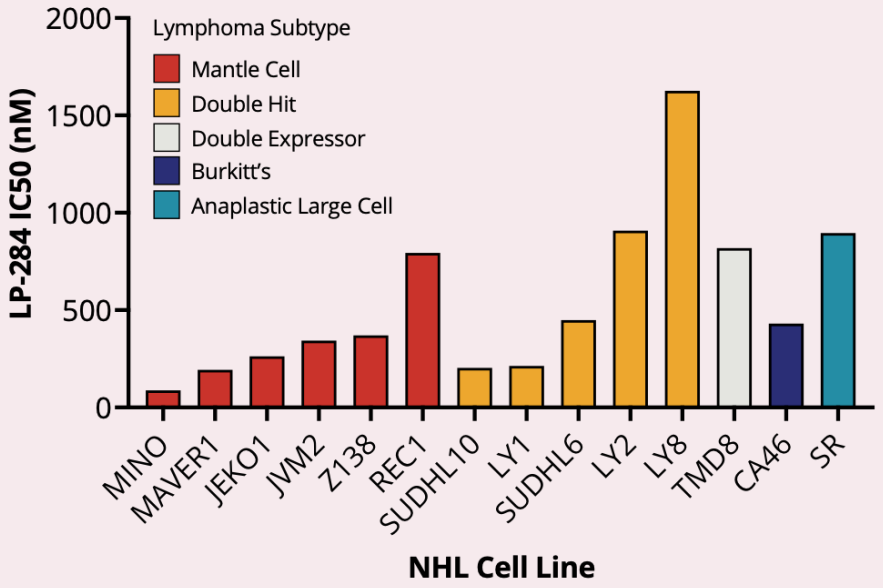
*LP-284 IND Filing Anticipated in Q1 2023 With Trial Launch in 2023*

## 01. Phase 1 Clinical Trial for **LP-284** in non-Hodgkin's B-cell Lymphomas

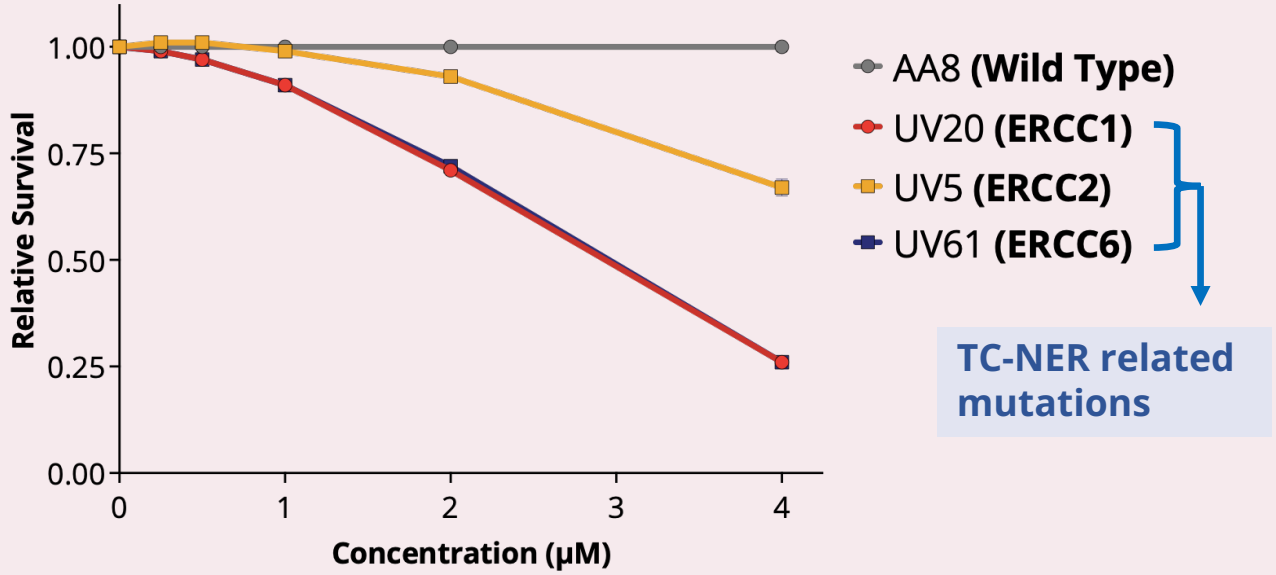
**Expected Timeline**

| Targeted for Q1 2023 | Targeted for Q1-Q2 2023 | Targeted for Q2-Q3 2023 |
|---|---|---|
| Complete the IND enabling studies | IND filing | Phase 1 LP-284 trial |

### LP-284 Exhibits Nanomolar Potency in NHL




### LP-284 Reduces Viability in Cells with Specific DDR Mutations

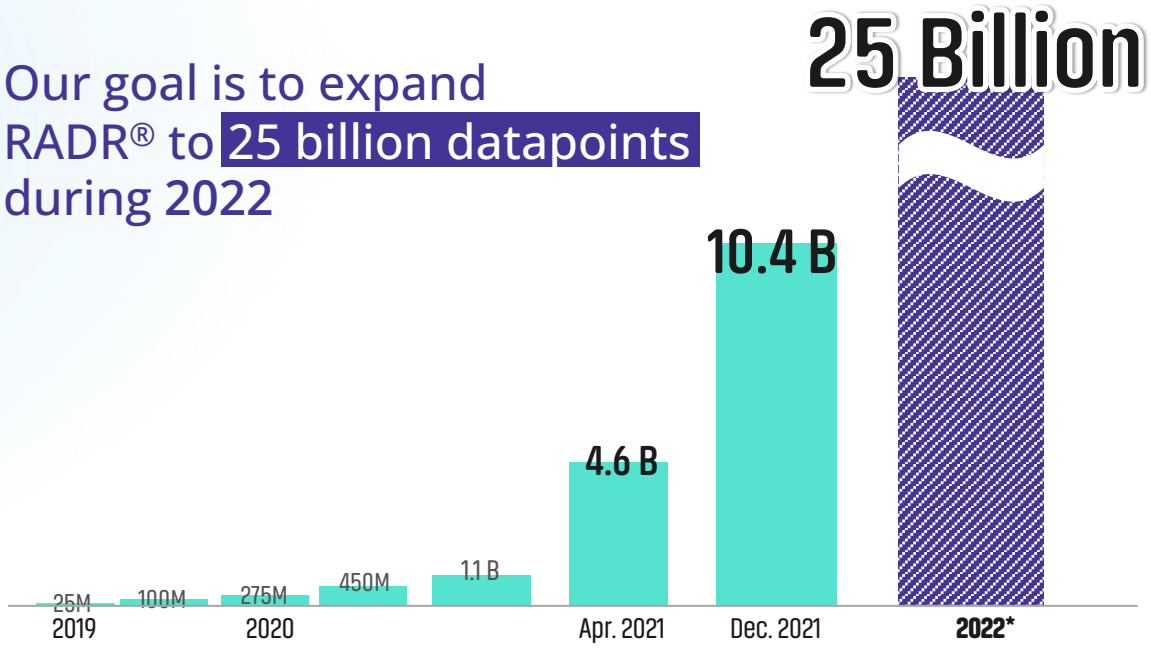


# RADR® Has Surpassed 21 Billion Datapoints and Undergone Significant Improvements


## Future Goals For A.I. Platform

1. Focus on automation of data acquisition
2. Improve data interface to other analytical tools & containers
3. Improve tagging of metadata and algorithms
4. Enter into additional value-based biopharma collaborations

Our goal is to expand RADR® to **25 billion datapoints** during 2022



# Lantern Will Host a KOL Webinar Sept. 22nd for Childhood Cancer Awareness Month

***Key Opinion Leader (KOL) Webinar on LP-184, LP-284, and the treatment of pediatric cancer***

Lantern Collaboration Partner

UT Health San Antonio
Greehey Children's Cancer Research Institute

**Peter Houghton Ph.D.**

Professor & Principal Investigator at Greehey Children's Cancer Research Institute (GCCRI) at UT Health Science Center-San Antonio

Every three minutes, a child is diagnosed with cancer

**300,000 children** are diagnosed with cancer each year world wide

**250 kids** daily and **91,250 kids** yearly lose their life to cancer

There are **only 6 drugs** that have been developed specifically for children

# New Preclinical Data will Be Presented at Multiple Scientific Conferences in Q3/Q4

## September

13

### AACR 2022 Annual Meeting

September 13th -16th , 2022
in Boston, MA

28

### SOHO 2022 Annual Meeting

September 28th – October 1st, 2022
in Houston, TX

## October

12

### MicroCap Rodeo Presents: Windy City Roundup 2022

October 12th – 13th , 2022
in Chicago, IL

26

### ThinkEquity Conference

October 26th , 2022
in New York, NY

# Financial Update Q2 2022

## Summary Results of Operations

| | Three Months Ended June 30, (unaudited) 2022 | 2021 |
|---|---|---|
| **Operating expenses:** | | |
| General and administrative | $ 1,405,998 | $ 1,314,201 |
| Research and development | 2,988,823 | 1,164,892 |
| Total operating expenses | 4,394,821 | 2,479,093 |
| **Loss from operations** | **(4,394,821)** | **(2,479,093)** |
| Interest + Other income, net | (97,565) | 162,612 |
| **NET LOSS** | **$ (4,492,386)** | **$ (2,316,481)** |
| *Net loss per common share, basic and diluted* | $ (0.41) | $ (0.21) |
| *Weighted Avg. Common Shares Outstanding - Basic and Diluted* | 10,830,947 | 11,181,504 |

## Balance Sheet Highlights & Summary

| | (unaudited) 6/30/2022 | 12/31/2021 |
|---|---|---|
| **Cash, Cash Equivalents & Marketable Securities** | **$ 62,149,497** | **$ 70,725,447** |
| Prepaid Expenses & Other Current Assets | $ 3,513,485 | $ 1,990,953 |
| **Total Assets** | **$ 66,379,800** | **$ 73,950,477** |
| **Total Liabilities** | **$ 5,304,293** | **$ 2,379,057** |
| **Total Stockholders' Equity** | **$ 61,075,507** | **$ 71,571,420** |

*"We believe our **solid financial position** will fuel continued growth and evolution of our RADR® A.I. platform, accelerate the development of our portfolio of targeted oncology drug candidates and allow us to introduce additional targeted product and collaboration opportunities in **a capital efficient manner.**"*

# Key Corporate Objectives and Milestones

## 2022 Objectives and Milestones

- Advance enrollment of **The Harmonic™ Trial** – Phase 2 clinical trial for LP-300 in NSCLC & increase patient & clinician awareness
- Assess LP-100 clinical development in conjunction with PARP*i*
- Finalize IND-Enabling studies & clinical trial design for LP-184
- Design Ph. 2 clinical trial for LP-184 in GBM
- Progress LP-184 towards Ph. ½ pediatric clinical trial, including ATRT
- Finalize additional LP-284 studies to support Ph.1 launch in 2023
- Advance ADC preclinical studies to support future Phase 1 launch
- Explore potential combinations for LP-100, LP-184, LP-284 & LP-300 with other existing approved drugs
- Strategically grow RADR® A.I. platform to 25 billion datapoints
- Explore licensing and partnership opportunities

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