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# Lantern Pharma, Inc. (LTRN: NASDAQ)

## *Harmonic Screening Underway*

Based on our DCF model which uses a 15% discount rate, Lantern Pharma is valued at approximately $26.00 per share. Our model applies a 25% probability of ultimate approval and commercialization for LP-300 in never-smoker NSCLC, for LP-184 in multiple tumors in combination with ADCs and as monotherapy in ATRT. The model includes contributions from the United States, EU and rest of world.

| | |
|---|---|
| Current Price (11/7/2022) | $4.47 |
| **Valuation** | **$26.00** |

## OUTLOOK

Lantern Pharma uses AI & data to identify drug responders, uncover mechanism of action & rescue failed drugs. It is developing LP-300 for non- & never smoker NSCLC in the Harmonic trial. Secondary candidates include LP-100 for mCRPC which was reacquired from Allarity Therapeutics, and LP-184 and LP-284 which are in preclinical development for multiple biomarker-defined tumors and hematological cancers, respectively.

Lantern uses AI & machine learning to rescue failed and abandoned compounds by predicting response in biomarker-defined subpopulations. RADR is the firm's AI platform which analyzes proprietary, curated data to identify new candidates, mechanisms of action & patients most likely to respond to drug therapy, de-risking clinical trials and saving time and cost.

Lantern launched its Ph2 trial for LP-300 in never-smoker NSCLC in late 2022. We expect it to lead into a Ph3 study that will generate registrational data in 2025, US & EU regulatory submission in 2026 & commercialization in 2027. LP-184 is expected to begin Ph2 trials in defined advanced tumors in 2022.

## SUMMARY DATA

| | |
|---|---|
| **52-Week High** | **10.32** |
| **52-Week Low** | **4.19** |
| **One-Year Return (%)** | **-56.0** |
| **Beta** | **0.8** |
| **Average Daily Volume (sh)** | **25,900** |
| **Shares Outstanding (mil)** | **10.9** |
| **Market Capitalization ($mil)** | **48.5** |
| **Short Interest Ratio (days)** | **4.8** |
| **Institutional Ownership (%)** | **30.5** |
| **Insider Ownership (%)** | **15.0** |
| **Annual Cash Dividend** | **$0.00** |
| **Dividend Yield (%)** | **0.00** |
| **5-Yr. Historical Growth Rates** | |
| **Sales (%)** | **N/A** |
| **Earnings Per Share (%)** | **N/A** |
| **Dividend (%)** | **N/A** |
| **P/E using TTM EPS** | **N/A** |
| **P/E using 2022 Estimate** | **N/A** |
| **P/E using 2023 Estimate** | **N/A** |
| **Zacks Rank** | **N/A** |

| | |
|---|---|
| **Risk Level** | **Above Average** |
| **Type of Stock** | **Small-Growth** |
| **Industry** | **Med-Biomed/Gene** |

## ZACKS ESTIMATES

### Revenue

(In millions of US$)

| | Q1 (Mar) | Q2 (Jun) | Q3 (Sep) | Q4 (Dec) | Year (Dec) |
|---|---|---|---|---|---|
| 2021 | $0.0 A | $0.0 A | $0.0 A | $0.0 A | $0.0 A |
| 2022 | $0.0 A | $0.0 A | $0.0 A | $0.0 E | $0.0 E |
| 2023 | | | | | $0.0 E |
| 2024 | | | | | $0.0 E |

### Earnings per Share

| | Q1 (Mar) | Q2 (Jun) | Q3 (Sep) | Q4 (Dec) | Year (Dec) |
|---|---|---|---|---|---|
| 2021 | -$0.24 A | -$0.21 A | -$0.36 A | -$0.31 A | -$1.13 A |
| 2022 | -$0.38 A | -$0.41 A | -$0.21 A | -$0.49 E | -$1.50 E |
| 2023 | | | | | -$1.72 E |
| 2024 | | | | | -$2.42 E |

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## What's New?

**Third Quarter 2022 Financial and Operational Results**

On November 7, 2022, Lantern Pharma, Inc. (NASDAQ: LTRN) announced 3Q:22 financial and operational results, filed its Form 10-Q with the SEC and hosted a video webcast to review accomplishments. Since our previous update, Lantern has participated in multiple investor and scientific conferences, continued to advance its LP-184 and LP284 Investigational New Drug (IND) applications, and begun screening its first subjects for the Harmonic trial.

Highlights for the third quarter and to-date include:

- FDA Authorization to start LP-300 trial – July 2022
- LP-184 data presented at AACR – September 2022
- KOL Webinar, Pediatric Cancers – September 2022
- LP-284 data for mantle cell lymphoma presented at SOHO – September 2022
- Publication in Frontiers in Drug Discovery – October 2022
- New patent issued for LP-300 – October 2022
- Over 25 billion RADR data points generated – November 2022

Lantern generated no revenues during the third quarter and incurred operating expense of $2.1 million, producing a net loss of ($2.3) million or ($0.21) per share.

For the quarter ending September 30, 2022 and versus the same comparable prior year period:

- Research & development expenses totaled $702,000, falling 76% from $3.0 million on account of a reversal of amounts paid to a service provider and lower spending on LP-100. These movements were partially offset by recognition of expenses for LP-284, and increased spending on the RADR platform;
- General & administrative expenses were $1.4 million up 22% vs. $1.2 million. The following expense categories drove the increase: office and administrative, travel, legal and patent, professional fees, payroll and compensation and unallocated. This was partially offset by decreases in business development and corporate insurance expenses;
- Interest income was $52,000 vs. $77,000 while other (expense) income shifted to a loss of ($172,000) to a gain of $172,000. The change was attributable to a loss on marketable securities and foreign currency offset by a gain from dividend income and tax incentives;
- Net loss was ($2.3) million, or ($0.21) per share, compared to ($4.1) million, or ($0.36) per share.

At the end of 3Q:22, cash and marketable securities on the balance sheet totaled $57.8 million, declining $4.3 million sequentially. Cash burn for the quarter was ($4.0) million vs. ($4.7) million in the prior year period with the difference between net loss and free cash flow largely explained by a draw from prepaid expenses and other current assets related to upfront Harmonic costs. There was zero movement in cash from financing sources during the quarter.

**Harmonic Trial to Start**

In mid-July, Lantern announced the start of the Harmonic trial that will evaluate LP-300 in never smokers with non-small cell lung cancer (NSCLC). 90 subjects are expected to enroll in the Phase II study at 15 – 20 sites around the United States with enrollment expected to last from 12 to 16 months. It will target never smokers with lung adenocarcinoma who have relapsed after treatment with tyrosine kinase inhibitors (TKIs). The study will consist of two stages, the safety lead-in stage and the randomization stage. Patients on LP-300 + pemetrexed and carboplatin will be measured against patients on pemetrexed and carboplatin only in a 2:1 ratio. Primary endpoints are progression free survival (PFS) and overall survival (OS). Secondary endpoints include objective response rate (ORR), duration of objective response (DOR) and clinical benefit rate (CBR). The trial will also collect liquid biopsies and acquire genomic and transcriptomic data from patients. As of the 3Q report, Lantern has activated its first two clinical trial sites in Illinois and Ohio and is actively screening up to a dozen subjects.

**Exhibit I – Harmonic Trial[1]**




**Posters, Publications, Patents, Partners and Pipeline**

*ASH LP-284 Poster*
Lantern will present a poster at the American Society of Hematology (ASH) 2022 conference which is being held from December 10th to 13th in New Orleans. The title of the abstract is Development of a Potent DNA Damaging Agent LP-284 for Treatment of Mantle Cell Lymphoma and it reports on the efficacy of LP284 in a MCL xenograft mouse model and examines safety of the compound in dogs. The results demonstrated improved efficacy over the use of ibrutinib, bortezomib or vehicle in the animal model and they demonstrated that LP-284 reduced the expression of the onco-fusion gene CCND1 and the MYC pathway, which are pathways implicated in MCL.

*RADR Platform*
An open access article entitled Artificial intelligence platform, RADR®, aids in the discovery of DNA damaging agent for the ultra-rare cancer Atypical Teratoid Rhabdoid Tumors was published in Frontiers in Drug Discovery in October. The piece explores the impact of genomics and how related tools have become an important part of advancing drug development. The National Cancer Institute's (NCI's) CellMiner Cross Database and Lantern's RADR platform are featured which together are able to characterize mechanism of action, gene sets aligned with each drug and how the tested compounds differed from existing DNA alkylating agents.

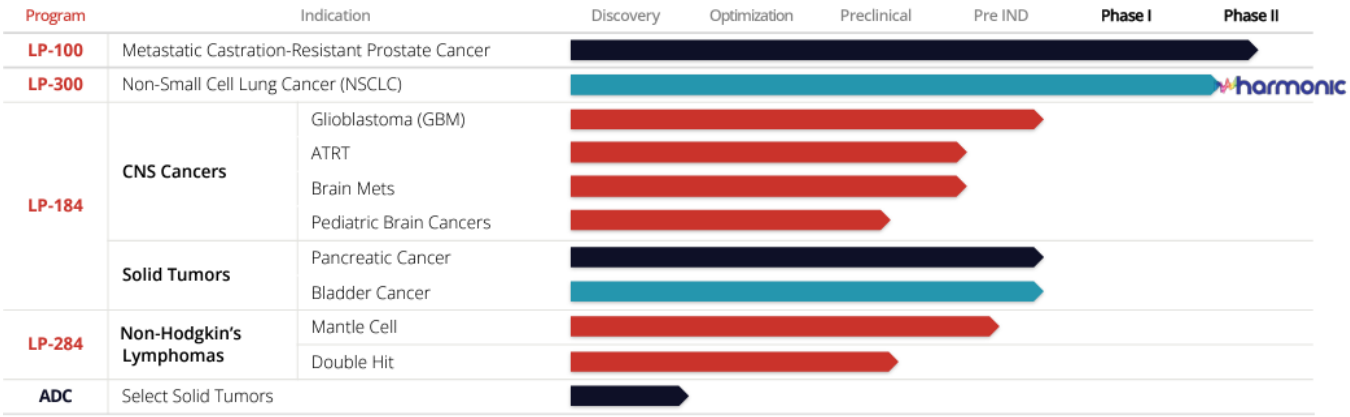
*Patent*
In an October 20 release, Lantern announced that the US Patent and Trademark Office had issued it a new patent entitled Increasing Cancer Patient Survival Time By Administration Of Dithio-containing Compounds. It is listed under patent number 11,471,431 and is directed to increasing the survival time of cancer patients receiving LP-300 for cancers that are marked by overexpression of several regulatory proteins. These include thioredoxin (TRX) or glutaredoxin (GRX) and/or exhibition of TRX- or GRX-mediated resistance to one or more chemotherapeutic interventions. TRX and GRX are commonly overexpressed in adenocarcinomas, a cancer subtype of NSCLC, and can lead to increased tumor resistance to chemotherapy. LP-300 can inhibit activity of TRX and GRX, restoring the redox balance of cancer cells and improving their sensitivity to chemotherapy.

*Actuate Therapeutics*
In May of 2021, Lantern entered into a collaboration agreement with private company Actuate Therapeutics to help develop novel biomarker derived signatures using the RADR platform for use with Actuate's product candidates, specifically elraglusib, a GSK-3β inhibitor. Remuneration was made through the issuance of 25,000 restricted shares of stock. The term of the agreement was recently extended to March 31, 2023. The collaboration has identified several candidate-specific biomarkers to be used in future trials. RADR and its algorithms have been able to model clinical response to elraglusib, identify actionable biomarkers and use this data to design the upcoming Phase II trial. Lantern's tools will later be applied to future biomarker validation and will be expanded to incorporate modeling with additional forms of patient data in the future including RNA, ctDNA, soluble biomarkers and other genomic features.

*Other Pipeline Assets*
Lantern's LP-184 is the subject of an IND which is expected to be submitted to the FDA in 1Q:23. The asset will pursue indications in both solid and CNS cancers. If the IND is cleared, first trials for LP-184 will start in early 2023 with a broad selection of partners including Johns Hopkins for CNS, Fox Chase and the Danish Cancer Society for solid tumors and UT Health for pediatric cancers. Initial clinical trials will likely be multi-tumor and the program will move forward based on which tumors are most responsive. LP-284 is the subject of an IND for non-Hodgkin's B-cell lymphomas, specifically mantle cell and double hit. An IND is expected for this candidate in early 2023 with a Phase I trial to follow.

[1] Source: Lantern Pharma 3Q:22 Earnings Call Presentation

**Exhibit II – Lantern Pipeline[2]**




## Milestones

- KOL webinar: treatment of pediatric cancer – September 22, 2022
- LP-100
  - Assess in conjunction with PARPi
- LP-300 Harmonic trial (non-smoker NSCLC)
  - Enrollment of first patient – 4Q:22
  - Interim Results – 4Q:23
- LP-184
  - Multiple tumor types (solid and CNS)
  - Develop and submit IND – 1Q:23
  - Phase I trial – 2023
- LP-284 (hematologic cancers)
  - Submission of IND – 1Q:23
  - Launch of Phase I trial – 2Q:23
- KOL Webinar, Synthetic Lethality – Coming months
- RADR Platform Day – 1Q:23

## Summary

On November 7th, Lantern reported 3Q:22 financial and operational results. Since the previous quarterly update, the company has announced and/or participated in several investor and scientific events. Additionally, the Harmonic trial began and is now screening the first patients who will be enrolled and receive LP-300 for non-smoker NSCLC. RADR has now surpassed 25 billion data points and employs 200 algorithms to develop its conclusions.

Other programs, including LP-184 and LP-284 are on track for near-term submission of an IND and start of Phase I trials in 2023. Expenses for the third quarter were below our expectations on account of a reimbursement from a service provider. We note that Lantern's market cap is almost $10 million below its September 30 cash level. We see material value in RADR and its ability to identify patient populations that can benefit from specific compounds. With Harmonic beginning, we see substantial value above where the shares are trading. We maintain our price target of $26.00 per share to reflect the portfolio of assets moving forward, with LP-300 in non-smoker NSCLC driving the majority of the value.

[2] Source: Lantern Pharma 3Q:22 Earnings Call Presentation

## PROJECTED FINANCIALS

**Lantern Pharma, Inc. - Income Statement**

| Lantern Pharma Inc. | 2021 A | Q1 A | Q2 A | Q3 A | Q4 E | 2022 E | 2023 E | 2024 E |
|---|---|---|---|---|---|---|---|---|
| **Total Revenues ($US)** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |
| *YOY Growth* | | | | | | | | |
| General & Administrative | $5,021 | $1,406 | $1,406 | $1,443 | $1,532 | $5,787 | $5,932 | $6,500 |
| Research & Development | $7,571 | $2,660 | $2,989 | $702 | $3,850 | $10,201 | $13,772 | $23,100 |
| Income from operations | ($12,592) | ($4,066) | ($4,395) | ($2,145) | ($5,382) | ($15,988) | ($19,704) | ($29,600) |
| *Operating Margin* | | | | | | | | |
| Interest Income | $68 | $22 | $55 | $52 | $12 | $142 | $80 | $50 |
| Other Income | $161 | ($78) | ($153) | ($172) | $0 | ($402) | $0 | $0 |
| Pre-Tax Income | ($12,363) | ($4,122) | ($4,492) | ($2,265) | ($5,370) | ($16,249) | ($19,624) | ($29,550) |
| Provision for Income Tax | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| *Tax Rate* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* |
| **Net Income** | **($12,363)** | **($4,122)** | **($4,492)** | **($2,265)** | **($5,370)** | **($16,249)** | **($19,624)** | **($29,550)** |
| *Net Margin* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* | *# DIV/0!* |
| **Reported EPS** | **($1.13)** | **($0.38)** | **($0.41)** | **($0.21)** | **($0.49)** | **($1.50)** | **($1.72)** | **($2.42)** |
| *YOY Growth* | *-17%* | *55.7%* | *100.2%* | *-42.6%* | *56%* | *32%* | *15%* | *41%* |
| Basic Shares Outstanding | 10,905 | 10,876 | 10,831 | 10,839 | 10,855 | 10,850 | 11,400 | 12,200 |

*Source: Company Filing // Zacks Investment Research, Inc. Estimates*

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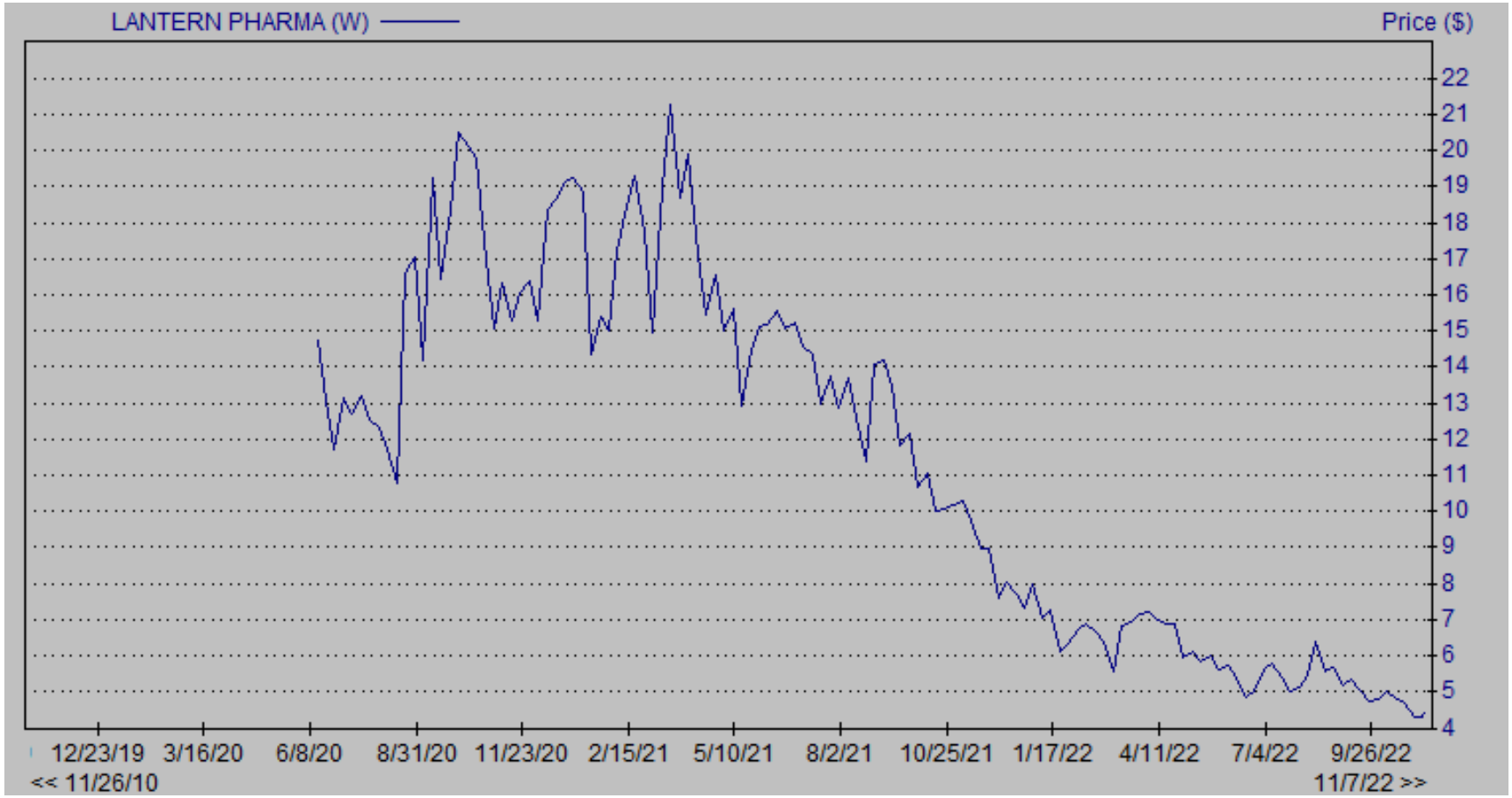
## HISTORICAL STOCK PRICE

**Lantern Pharma, Inc. – Share Price Chart[3]**




[3] Source: Zacks Research System

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