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Lantern Pharma, Inc. (LTRN: NASDAQ)

LTRN: Spotlight on LP-184 & 284

Our approach uses a DCF model and a 15% discount rate for valuation. 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 (9/28/2023)	$3.45
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 undergoing Ph2 trials in defined advanced tumors while LP-284 has been cleared for human trials.

SUMMARY DATA

52-Week High	**6.20**
52-Week Low	**3.38**
One-Year Return (%)	**-28.0**
Beta	**0.6**
Average Daily Volume (sh)	**37,093**
Shares Outstanding (mil)	**10.9**
Market Capitalization ($mil)	**37.6**
Short Interest Ratio (days)	**5.7**
Institutional Ownership (%)	**24.5**
Insider Ownership (%)	**17.5**
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 2023 Estimate	**N/A**
P/E using 2024 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)
2022	$0.0 A	$0.0 A	$0.0 A	$0.0 A	$0.0 A
2023	$0.0 A	$0.0 A	$0.0 E	$0.0 E	$0.0 E
2024					$0.0 E
2025					$0.0 E

Earnings per Share

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2022	-$0.38 A	-$0.41 A	-$0.21 A	-$0.31 A	-$1.31 A
2023	-$0.36 A	-$0.44 A	-$0.43 E	-$0.50 E	-$1.72 E
2024					-$2.01 E
2025					-$2.02 E

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What's New?

While the clinical trial for LP-300 is ongoing in never-smoker, non-small cell lung cancer patients, Lantern Pharma, Inc. (NASDAQ: LTRN) has been busy advancing some of its earlier stage assets including LP-184 and LP-284. These small molecule acylfulvenes are chemically related as LP-284 is the positive enantiomer of LP-184. With respect to LP-184, a notice of patent allowance was issued for the compound in rare pediatric brain cancer and the first patient was dosed in the Phase I advanced solid tumor trial. Regarding LP-284, Lantern presented data in non-Hodgkin's lymphomas at the Society of Hematologic Oncology Annual Meeting followed shortly after by FDA clearance of the investigational new drug (IND) application for a Phase I in the same indication. In other news, the company announced the expansion of the artificial intelligence (AI) capabilities of the Response Algorithm for Drug Positioning & Rescue (RADR) platform to predict combinations with checkpoint inhibitors.

Lantern continues to build its portfolio leveraging the ability of its RADR platform to rapidly and cost-effectively add new candidates to its pipeline.

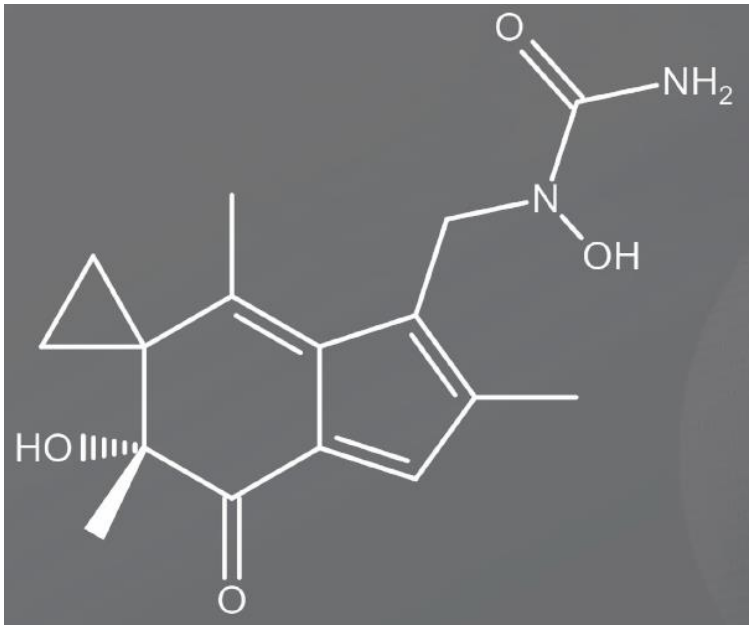
LP-184 Notice of Patent Allowance

In mid-August Lantern announced that the US Patent and Trademark Office (USPTO) had issued a notice of allowance regarding Lantern's method of treatment for Atypical Teratoid Rhabdoid Tumor (ATRT) using LP-184. A notice of patent allowance indicates that a patent application has been examined and approved for issuance as a granted patent. Before the patent is issued, fees must be paid and an amendments or formalities must be completed. This usually takes a few months to complete.

LP-184 First Patient Dosed

A late September press release informed investors that the first patient in the LP-184 Phase I study in advanced solid tumors had been dosed. The single arm, multicenter trial is evaluating the safety and tolerability of escalating doses of LP-184 to determine the maximum tolerated dose and recommended Phase II dose. Indications that will be pursued include advanced solid tumors and recurrent high-grade gliomas, including glioblastoma. The study expects to enroll 35 subjects who have relapsed or are refractory to standard therapy. LP-184 will be infused on day 1 and day 8 of a 21-day cycle for a minimum of two cycles. In addition to the primary endpoints of incidence and severity of adverse events, subjects will be monitored for safety, pharmacokinetics and clinical activity. Assuming results are supportive, LP-184 will be advanced in solid tumors by Lantern and in central nervous system (CNS) indications by Starlight Therapeutics under the designator STAR-001.

Exhibit I – LP-184 Chemical Structure[1]



[1] Source: Lantern Pharma September 2023 Corporate Presentation

LP-284 Data Presented

Lantern participated in the Society of Hematologic Oncology Annual Meeting held in Houston, Texas during the week of September 6th, 2023. The title of the associated poster presentation is: Targeting Homologous Recombination Deficiencies in B-Cell Non-Hodgkin's Lymphomas with the Novel Anti-Tumor Small Molecule LP-284.

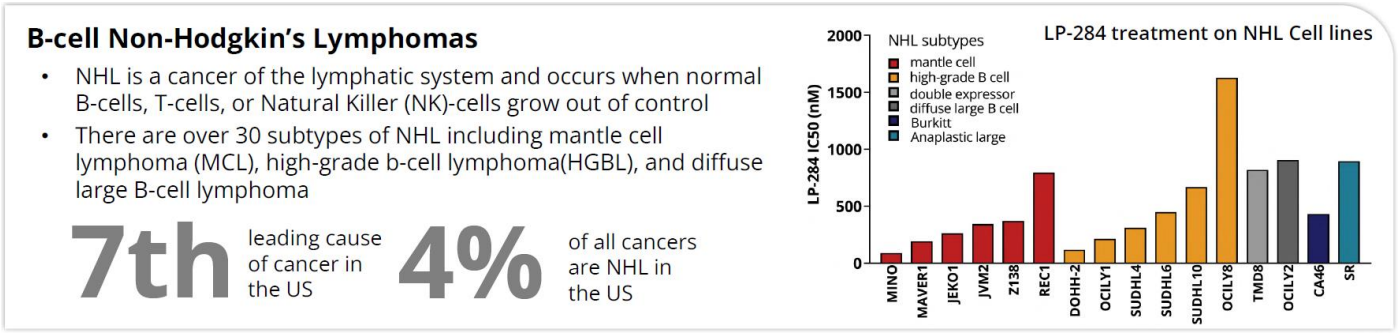
The poster addressed the importance of DNA double-strand breaks and noted that failure to repair these breaks due to homologous recombination deficiency (HRD) is a vulnerability that can be exploited. B-cell Non-Hodgkin's lymphomas (B-NHL) frequently present DNA damage response; however, the ecosystem around this characteristic has not approved any agents targeting HRD. Lantern's LP-284 may be able to take advantage of the DNA damage in relapsed or refractory lymphomas due to its strong potency in HRD B-NHL.

The poster concluded that at least 10% of B-NHL patients in a Pan-Cancer Analysis of Whole Genomes (PCAWG) study are likely HRD positive and ~91% of these cases may be suitable for treatment with DSB-inducing agents such as LP-284. The evidence in the poster supports Lantern's clinical development of LP-284 in HRD positive B-NHL patients.

IND Clearance for LP-284 in Non-Hodgkin's Lymphoma

LP-284 has made substantial strides over the last year with a notice of allowance issued for a composition of matter patent and an orphan drug designation granted for mantle cell lymphoma. In mid-September Lantern announced that the IND had been cleared for a Phase I study in relapsed or refractory non-Hodgkin's lymphomas. This includes mantle cell lymphoma, double hit lymphoma and other high-grade B-cell lymphomas. The press release identified 40 to 80 thousand patients with blood cancers that may benefit from the therapy each year. Lantern was able to use its RADR platform to accelerate the development of the drug to clinical stage in less than two and a half years and for $2.7 million. The trial is expected to begin enrollment of patients in 4Q:23

Exhibit II – B-Cell Non-Hodgkin's Lymphomas Overview[2]



Expansion of RADR to Developing Immune Checkpoint Inhibitors

Lantern's RADR platform is a broadly applicable tool that uses transcriptome data, genomic data and drug sensitivity data from a wide range of curated sources. Output from the algorithm is able to identify combination strategies, patient response and now combination therapy regimens for immune checkpoint inhibitors. Checkpoint inhibitors have emerged as the largest segment of immuno-oncology and combination therapies are extremely common as evidenced by the multitude of Keynote trials with Merck's Keytruda being run.

With this backdrop, Lantern has expanded the utility of RADR to address the multiple challenges facing the increased usage of ICIs in cancer therapy. An August press release highlighted the initiatives using RADR to accelerate the clinical development of checkpoint inhibitors and identified additional functionality for testing response.

Harmonic Trial

In July 2022, Lantern announced the start of the Harmonic trial that is evaluating 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 to 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

[2] Source: Lantern Pharma September 2023 Corporate Presentation

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.

A March 28th, 2023 press release announced that the first patient in the trial had been dosed, kicking off the Phase II effort led by lead principal investigator Dr. Joseph Treat of Fox Chase Cancer Center. Lantern has activated five clinical trial sites including Gabrail Cancer Center, Northwest Oncology, New York Cancer and Blood Specialists, Texas Oncology and Cancer and Blood Specialty Clinic. Further trial sites across the United States and Asia are expected, especially in regions where never-smoker NSCLC are prevalent. Enrollment is anticipated to take 18-24 months.

Lantern expects to report details from the first stage of Harmonic as they become available. Genomic and transcriptomic data collected from subject biopsies will be used to further refine subject identification and potential responders. Investigators have identified a higher incidence of low PD-L1 expression in responders, highlighting this as an important marker and potential signature for identifying LP-300 candidates.

Exhibit III – Lantern Pipeline[3]



Milestones

- IND submission for LP-184 – May 2023
- Subject dosing, Stage 1 of Harmonic trial – 2Q:23
- ADC collaboration with Bielefeld University – June 2023
- Start of LP-184 Phase I trial in solid tumors – mid-2023
- Completion of IND-enabling studies for LP-284 – mid-2023
- IND submission for LP-284 – August 2023
- LP-284 trial start – 4Q:23

Summary

Since our previous update, Lantern has continued to make progress with its LP-184 and LP-284 assets, most importantly in the clinical sphere. The first patient has been dosed with LP-184 and the IND for LP-284 has been cleared. We keep our attention trained on the HARMONIC trial, which is the primary value driver for the company and expect further updates during the third quarter earnings release in November. We maintain our price target of $26.00 per share.

[3] Source: Lantern Pharma September 2023 Corporate Presentation

PROJECTED FINANCIALS

Lantern Pharma, Inc. - Income Statement

Lantern Pharma Inc.	2022 A	Q1 A	Q2 A	Q3 E	Q4 E	2023 E	2024 E	2025 E
Total Revenues ($US)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
General & Administrative	$5,830	$1,733	$1,632	$1,479	$1,614	$6,458	$6,500	$6,581
Research & Development	$8,603	$2,553	$3,558	$3,211	$3,855	$13,177	$18,100	$18,643
Income from operations	($14,433)	($4,286)	($5,190)	($4,690)	($5,469)	($19,636)	($24,600)	($25,224)
Operating Margin								
Interest Income	$204	$134	$118	$19	$17	$288	$50	$10
Other Income	($32)	$285	$326	$0	$0	$611	$0	$0
Pre-Tax Income	($14,260)	($3,868)	($4,746)	($4,671)	($5,452)	($18,737)	($24,550)	($25,214)
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	**($14,260)**	**($3,868)**	**($4,746)**	**($4,671)**	**($5,452)**	**($18,737)**	**($24,550)**	**($25,214)**
Reported EPS	**($1.31)**	**($0.36)**	**($0.44)**	**($0.43)**	**($0.50)**	**($1.72)**	**($2.01)**	**($2.02)**
Basic Shares Outstanding	10,851	10,857	10,857	10,860	10,900	10,869	12,200	12,500

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

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HISTORICAL STOCK PRICE

Lantern Pharma, Inc. – Share Price Chart[4]



[4] Source: Zacks Research System

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