LONGBOARD PHARMACEUTICALS

Founded in 2020 by Arena Pharmaceuticals

Headquartered in La Jolla, CA, USA

IPO March 2021 (Nasdaq: LBPH)

30 employees (August 2022)

FAST FACTS

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Acknowledgments

Medical writing assistance was provided by ApotheCom (San Diego, CA, USA) and funded by Longboard Pharmaceuticals, Inc. (La Jolla, CA, USA).

LONGBOARD: THE STORY SO FAR

Mission and Vision

- **Mission Statement:** We are committed to transforming the lives of patients, families, and caregivers impacted by neurological and rare diseases
- **Vision Statement:** A world where ~~devastating~~ neurological conditions are no longer devastating

Experience and Leadership

- Longboard Pharmaceuticals is a clinical-stage biopharmaceutical company focused on developing novel, transformative medicines for neurological diseases, with an initial focus on rare diseases
- Longboard aims to advance a portfolio of centrally acting product candidates designed to be highly selective for specific G protein–coupled receptors (GPCRs)
  - Longboard's small molecule product candidates were discovered out of the same world-class GPCR research platform at Arena, which represents more than 20 years of drug development and optimization
- The Longboard team has extensive experience in drug development
  - >60% have previous experience in central nervous system (CNS) drug development
  - >60% have previous experience in rare diseases
  - >30% have previous experience in epilepsy

Leadership

Kevin Lind
President and CEO/Director

Randall Kaye, MD
Chief Medical Officer

Brandi Roberts
Chief Financial Officer

Steven Spector
Head of Business Development, General Counsel

Chad Orevillo
VP, Head of Operations

G PROTEIN–COUPLED RECEPTORS

- GPCRs regulate numerous aspects of human physiology and are considered the largest family of druggable targets in the human genome[1-3]
- At Longboard, we are developing the next generation of this proven class of drugs

Druggable targets represented by GPCRs[4]

Approved prescription drugs targeting GPCRs[5]

PIPELINE

LP352

- An oral, centrally acting, next-generation 5-hydroxytryptamine 2C (5-HT_{2C}) receptor superagonist in development for the potential treatment of seizures associated with developmental and epileptic encephalopathies (DEEs)
  - There is negligible observed impact on 5-HT_{2A} and 5-HT_{2B} receptor subtypes, which is expected to minimize adverse events associated with 5-HT_{2A} and 5-HT_{2B} agonism
  - LP352 significantly reduced epileptiform frequency and duration in the zebrafish *scn1Lab/-* model of Dravet syndrome
  - Real-world evidence of 5-HT_{2C} agonism suggests efficacy across multiple seizure types in patients with DEE, including Dravet syndrome and Lennox-Gastaut syndrome[6]

LP659

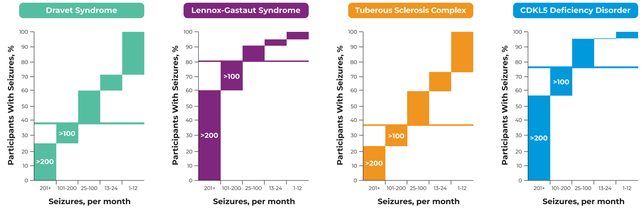
- A centrally acting, sphingosine-1-phosphate receptor (S1PR) subtypes 1 and 5 modulator in development for the potential treatment of multiple neurological diseases
  - LP659 has high selectivity for S1PR1 and S1PR5, which may decrease the risk of off-target activity and limit adverse events associated with S1PR2 and S1PR3 agonism
  - In the rat MOG-EAE model of demyelinating disease, LP659 reduced the incidence and severity of disease, and reduced circulating lymphocytes in a rapid and reversible manner

Program	MOA	Therapeutic Area	Preclinical	Ph I	Ph II	Ph III
LP352	5-HT_{2C} superagonist	DEE and other refractory epilepsies				
LP659	S1P receptor modulator	Multiple neurological diseases				

LP352 and LP659 are investigational compounds that are not approved by regulatory authorities for commercial sale in any country. We hold rights to other product candidates through the Arena License Agreement.

DEVELOPMENTAL AND EPILEPTIC ENCEPHALOPATHIES

- DEEs are a group of severe epilepsies characterized by drug-resistant seizures and significant developmental delay[7-9]
  - DEEs consist of named syndromes (eg, Dravet syndrome), as well as unclassified DEEs
  - Despite being on treatment, 40% to 80% of patients still have >100 seizures in a 6-month period, highlighting the unmet treatment need in this population



LONGBOARD'S COMMITMENT TO PATIENTS

We Are Committed to Transforming the Lives of Patients With Neurological and Rare Diseases

The people living with, supporting, and treating those with neurological conditions are at the center of what we do. We are grateful for the opportunity to have relationships, partnerships, and education that has come from working closely with the community globally, from patients and families to advocacy leaders and healthcare providers. Their contributions and feedback are crucial to the success in finding safe and effective treatments for a wide range of neurological conditions. With this input, we are working diligently toward our goal of developing novel, transformative medicines.

Thank you for allowing us to be a part of the community.

Advocacy and Research Partnerships

- Longboard has engaged with multiple advocacy and research groups across the DEE landscape to optimize the design of the PACIFIC study, increase study awareness in the community, and enrich understanding of the evolving DEE environment

List of patient advocacy groups is not exhaustive.

LONGBOARD NEWS AND RECENT EVENTS

March 2021: Longboard Pharmaceuticals Announces Initial Public Offering

- Longboard announced the initial public offering of 5,000,000 shares of common stock to the public under symbol LBPH

March 2022: PACIFIC Study Initiated

- Longboard announced initiation of the Phase 1b/2a PACIFIC study, which aims to evaluate the safety, tolerability, pharmacokinetics, and exploratory efficacy of LP352 in patients with DEE
- Study completion is expected in the second half of 2023

PACIFIC
Developmental and Epileptic Encephalopathies Study

VISIT OUR WEBSITE FOR MORE INFORMATION REGARDING THE PACIFIC STUDY

https://pacific.researchstudytrial.com/

April 2022: Longboard Data Presented at the American Academy of Neurology (AAN)

- Data from the LP352 single and multiple ascending dose studies were presented at AAN[10,11]
- Following oral administration of LP352 in healthy volunteers
  - LP352 was rapidly absorbed into the systemic circulation
  - No clinically meaningful effect of food was observed
  - Prolactin concentrations increased in a dose-dependent manner, indicating successful engagement of central 5-HT_{2C} receptors
  - Most adverse events were mild to moderate and were consistent with expected CNS effects and expected effects of serotonergic drugs
  - No serious adverse events were observed with single doses of LP352

Abbreviations **5-HT_{2C}**, 5-hydroxytryptamine 2C; **DEE**, developmental and epileptic encephalopathy; **GPCR**, G protein–coupled receptor; **MOA**, mechanism of action; **Ph**, phase; **S1P**, sphingosine-1-phosphate.

References **1.** Campbell AP and Smrcka AV. *Nat Rev Drug Discov.* 2018;17:789-803. **2.** Hauser AS et al. *Nat Rev Drug Discov.* 2017;16:829-842. **3.** Wacker D et al. *Cell.* 2017;170:414–427. **4.** Lundstrom K. *Methods Mol Biol.* 2009;552:51-66. **5.** Alhosaini K et al. *Saudi Pharmacol J.* 2021;29:539–551. **6.** Tolete P et al. *Neurology.* 2018;91:837-839. **7.** Scheffer IE et al. *Epilepsia.* 2017;58:512–521. **8.** Scheffer IE and Liao J. *Eur J Pediatr Neurol.* 2020;24:11–14. **9.** Gallop K et al. *Epilepsy Behav.* 2021;124:108324. **10.** Parasrampuria DA et al. Single Ascending Dose Pharmacokinetics (PK), Pharmacodynamics (PD), and Tolerability of LP352 in Healthy Subjects. Presented at the American Academy of Neurology 2022 Annual Meeting; April 2-7, 2022; Seattle, WA. **11.** Parasrampuria DA et al. A Randomized, Double-Blind, Placebo-Controlled, Multiple Ascending Dose Pharmacokinetics (PK), Pharmacodynamics (PD), and Tolerability Study of LP352 in Healthy Subjects. Presented at the American Academy of Neurology 2022 Annual Meeting; April 2-7, 2022; Seattle, WA.