Nucorion Pharmaceuticals, Inc.

Introduction

Nucorion Overview

Innovation Focused on the Chinese Market

- US-based company focused on treatments for **liver-related diseases in China**
- Founded in 2015, with technologies from Ligand Pharmaceuticals (Nasdaq: LGND) and contributions from a faculty member of The Ohio State University
  - There is an established heritage of **successful companies based on Ligand technologies** (Retrophin and Viking Therapeutics)
  - Active involvement from scientific advisors that include **world-renowned leaders** in fields of drug discovery and delivery
- Series A funding of $5 m (July 2016) has yielded **promising preclinical proof-of-concept data** for Nucorion's lead programs
  - Silver River International Investments Ltd. and Ligand invested in the Series A
  - Efficient operation has allowed substantial progress with minimal cash burn
- First and second parts of Series B funding of $7.5 m (August 2020) designated for US phase 1 clinical development of hepatitis B program and IND-enabling study of HCC program
  - Ji-Bao pharmaceuticals and Ligand participated
  - Ji-Bao licensed China rights of the hep-B lead compound and responsible for the clinical development in China
- Seeking additional **$10 million** in Series B funding to obtain clinical proof-of-concept for the second program

Liver Diseases in China

A Growing Epidemic

- Due to economic growth, lifestyle/environmental changes, national policies and an aging population, China is the **fastest growing** pharmaceutical market among emerging countries[1]

- The liver-related markets that Nucorion's pipeline is addressing are currently at $2 b USD, and are **expected to double** to nearly $4 b by 2024[2]

- Liver diseases in China are poised to create a **global healthcare burden**. Key market facts[3]:
  - **~300 million people** are affected by liver diseases in China
  - Liver cancer is **second most common cause of death** in China
  - China accounts for **over half** of liver cancer deaths worldwide
  - Hepatitis B carrier rate in China **now approaching 10%** of population (compared to <1% in US and EU)[4]

1 Ni, et al. *Globalization and Health*, 2017, 31:21
2 Global Data, Pharma Intelligence, 2018
3 Wang, et al. *Hepatology*, 2014, 2099-2108
4 Yan, et al. *J. Clin. Translational Hepatology*, 2014, 15-22

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Nucorion Overview

Cutting-edge LTP™ Technology

- Proprietary liver-targeting prodrug (LTP) technology to generate *best-in-class* novel medicines by **activating drugs in the liver**
  - Technology is designed to increase liver concentration of actives to maximize efficacy and/or potency at site of interest
  - Also reduces drug exposure outside of liver, minimizing side-effects
- Licensed for Nucorion programs from Ligand Pharmaceuticals
- Recent data has demonstrated **clear preclinical superiority** over ProTide technology used in Sovaldi® and VEMLIDY® (Gilead), and Acelarin (NuCana)
  - Data presented at EASL's *International Liver Conference,* 2018

EASL
European Association for the Study of the Liver

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Nucorion Overview

Scientific Advisory Board

- Nucorion benefits from the active involvement from scientific advisors that include **world-renowned leaders** in fields of drug discovery and delivery

Stephen Benkovic, Ph.D.

- National Medal of Science recipient (2010)
- Penn State University (Professor/Chair of Chemistry)
- National Academy of Science member
- Anacor Pharmaceuticals Co-Founder

Jack Szostak, Ph.D.

- Nobel Laureate (2009 Nobel Prize for Medicine)
- Harvard Medical School (Professor of Genetics)
- Howard Hughes Medical Institute (Investigator)
- Massachusetts General Hospital (Distinguished Investigator)
- National Academy of Science member

John Kozarich, Ph.D.

- Ligand Pharmaceuticals (Chairman); Scripps (adjunct professor)
- ActivX Biosciences (Chairman/President)
- Merck & Co. (Head of Research)
- University of Maryland and Yale University (Professor)

Lin Zhi, Ph.D.

- Ligand Pharmaceuticals (VP, Chemistry)
- Over 25 years discovery & development experience
- Co-author of >60 publications
- Inventor on >100 issued patents
- Inventor of LTP™ Technology platform

Zucai Suo, Ph.D. Co-Founder and Chair of Scientific Advisory Board

- Florida State University
- The Ohio State University (Professor of Chemistry & Biochemistry)
- Harvard Medical School (Postdoctoral Fellow)
- Eli Lilly & Co

Nucorion Overview

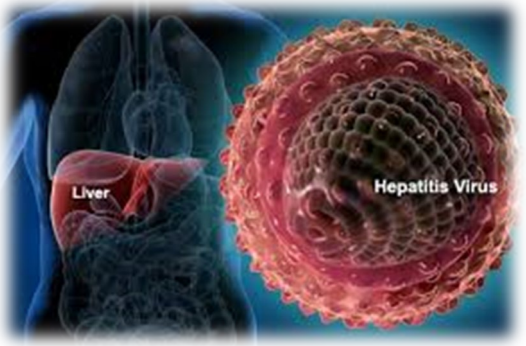
Robust, Lower-Risk Pipeline

- Multiple **potential *best-in-class* molecules** for an array of liver-related indications
  - All are novel prodrugs of **clinically-validated** actives
  - Prodrug design **avoids off-target safety concerns**

Program *Description*	*Preclinical Development*	*IND-ready*	*Phase 1*	**Upcoming Development Events**
NCO-1010 *LTP-enabled Nucleotide Analog for Hepatitis B*				• **IND/Phase 1a:** Complete • **Phase 1b initiation:** 2H 2020
NCO-2020 *LTP-enabled agent for Hepatocellular Carcinoma*				• **IND:** 3Q 2021 • **Clinical POC:** 2H 2022
NCO-3030 *LTP-enabled agents for Solid Tumors*				• **IND:** TBD[1] • **Clinical POC:** TBD[2]

[1] *TBD if the candidate compound distinct from NCO-2020*
[2] *Depending upon funding availability*

HBV Opportunity



- Established, multi-billion dollar market dominated by Gilead
  - VEMLIDY® (TAF): only new HBV drug in a decade
  - Viread® (TDF) and VEMLIDY® - 2018 Gilead global sales of <$3b[1]
- China situation analysis
  - Hepatitis B carrier rate in China **now approaching 10% of population**[2]
  - Viread® generic approved in 2017
  - Generic entecavir is the leading HBV drug
  - VEMLIDY® approved 4Q 2018
- Nucorion program (NCO-1010), potentially ***best-in-class***
  - Potentially **10-fold more potent** than TAF
  - Potentially **>3-fold more liver-selective** than TAF
- Competitions landscape
  - multiple novel drugs in development, but no immediate success in sight
  - Combo regimen expected with multiple mechanisms, nucleotide-based drug is expected to be the core of treatment

1 Gilead Q4 2018 Earnings Results Presentation
2 Yan, et al. *J. Clin. Translational Hepatology*, 2014, 15-22

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HCC Opportunity

- Market approaching a billion USD for small molecule drugs (~$700m in 2017) [1]
  - Market leaders are Nexavar® (sorafenib) and Lenvima® (lenvatinib), Stivarga® (regorafenib), for 2nd line HCC
  - No nucleotide-based drug approved for HCC
- China situation analysis
  - Liver cancer is **second most common cause of death** in China[3] and treatment options limited
- Nucorion program – NCO-2020, potentially ***first-in-class***
  - Oral delivery of a potent nucleotide agent selectively to the liver for potential use with transartery chemoabalation (TACE) before systemic therapies
  - Lowered development and regulatory risks
- Competitive Landscape
  - New kinase inhibitors approved in US and in China[4] second line with limited efficacy
  - Immuno-oncology (I-O) therapy; Tecentriq approved as 1st line; Opdivo 2nd line
  - I-Os will boost market size, although response rate remains low

1 Mordor Intelligence, Liver Cancer Market, 2017
2 Bayer Annual Report 2017
3 Wang, et al. *Hepatology*, 2014, 2099-2108
4 Eisai Major R&D Pipeline, February 2, 2018

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Nucorion Overview

Current Status and Plans

- Data obtained post Series A has **clearly validated** the LTP hypothesis
  - Preclinical research goals were achieved on time and under budget

- **Series B investment** will be focused on *Proof-of-Concept* in humans
  - Raising $17.5 million from US and Asia-based investors ($7.5 million completed)
  - Positioned to obtain **clinical** *proof-of-concept* data for two programs addressing billion dollar markets within two years from funding close

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Nucorion Overview

An Attractive Investment Thesis

- Potential for a leverageable and **lower-risk drug development platform**
  - Enhancing efficacy and safety profile of validated actives to create *best-in-class* novel medicines for the Chinese market
- A **clear and rapid plan** to clinical *proof-of-concept*
  - Programs quickly approaching or at Clinical Candidate stage
  - Clinical trial designs based on protocols of previously-approved drugs
- **High potential return** for Series B investors
  - Novel, patentable drugs for validated targets, for growing markets with high unmet medical needs
  - Low operating cost structure focuses investment into value-driving events
  - Clinical proof-of-concept for two programs in less than 24 months
  - Potential IPO event in 24-36 months

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