TETRAPHASE PHARMACEUTICALS

FACT SHEET

COMPANY SUMMARY

Tetraphase Pharmaceuticals, Inc. (NASDAQ: TTPH) is a biopharmaceutical company focused on developing and commercializing novel tetracyclines to treat serious and life-threatening conditions including Gram-negative multidrug-resistant (MDR) bacterial infections that pose a major and growing health threat to society. Our proprietary chemistry technology represents significant innovation in the creation of diverse compounds and has the potential to reinvigorate the tetracycline class by enabling the fully synthetic synthesis of novel candidates. Using this technology, we have synthesized more than 3,000 compounds.

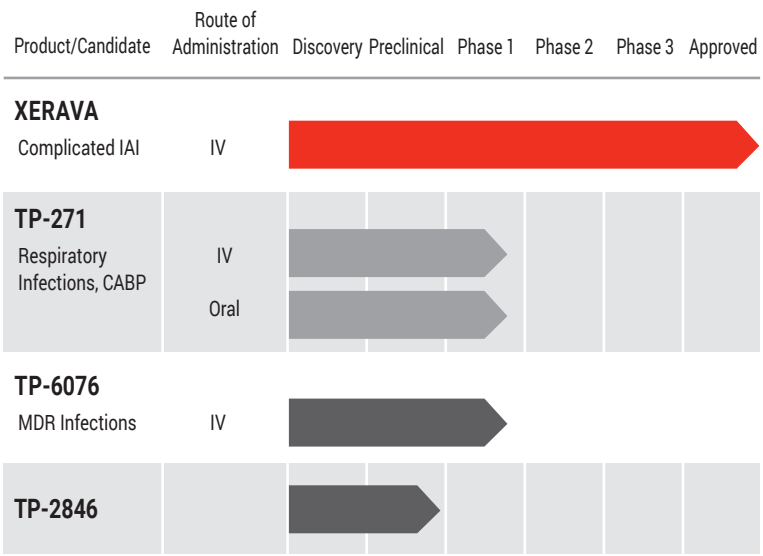
Tetraphase's lead product is XERAVA™ (eravacycline), which is approved by the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA) for the treatment of complicated intra-abdominal infections (cIAI). The Company's pipeline includes three product candidates in development: TP-271, a novel, broad-spectrum antibiotic for the treatment of respiratory infections, including those caused by bacterial biothreats and antibiotic-resistant public health pathogens; TP-6076, a fully-synthetic fluorocycline derivative targeting life-threatening infections, including those caused by carbapenem-resistant *Acinetobacter baumannii*; and TP-2846, fully synthetic tetracycline discovered in-house, for the treatment of acute myeloid leukemia. TP-271 and TP-6076 are in Phase 1 development and TP-2846 is in preclinical testing.

BUSINESS STRATEGY

Our goal is to become a fully integrated biopharmaceutical company that discovers, develops, and commercializes novel tetracyclines for use in areas of unmet medical need. Specifically, we intend to:

- Directly commercialize XERAVA with a targeted hospital sales force in the U.S.
- Collaborate with China biopharmaceutical company Everest Medicines Limited to develop and commercialize eravacycline in China, Taiwan, Hong Kong, Macau, South Korea and Singapore
- Establish partnerships for the development and commercialization of eravacycline in other territories outside of the U.S.
- Opportunistically advance development of other pipeline candidates

TETRAPHASE PIPELINE



ANTIBIOTIC CRISIS EMERGING

Antibiotic resistance is one of the biggest threats to global health today. According to the United Nations report "World Populations Prospect," based on scenarios of rising drug resistance for six pathogens, unless action is taken, by 2050 deaths from antimicrobial drug resistance could reach 10 million lives each year, at a cumulative cost to global economic output of $100 trillion. On this basis, the death toll could be a staggering one person every three seconds. Further, in 2017, the World Health Organization (WHO) published a report on antibacterial agents in development which noted a serious lack of treatment options for multidrug- and extensively drug-resistant M. tuberculosis and Gram-negative pathogens, including *Acinetobacter* and *Enterobacteriaceae* (such as *Klebsiella* and *E. coli*) which can cause severe and often deadly infections that pose a particular threat in hospitals and nursing homes. Dr. Tedros Adhanom Ghebreyesus, Director-General of WHO, commented on the report, "Antimicrobial resistance is a global health emergency that will seriously jeopardize progress in modern medicine. There is an urgent need for more investment in research and development for antibiotic-resistant infections… otherwise we will be forced back to a time when people feared common infections and risked their lives from minor surgery."

AT A GLANCE

Tetraphase is developing novel tetracyclines for serious and life-threatening conditions including Gram-negative MDR infections

- Pipeline of differentiated antibiotics created by proprietary chemistry platform
- Active against a wide variety of MDR bacteria: Gram-negative, Gram-positive and anaerobes

Lead product XERAVA

- Key attributes observed in preclinical and clinical studies to date have differentiated XERAVA from other antibiotics that target MDR infections and address the limitations of currently available treatments
- The Phase 3 studies demonstrated statistical non-inferiority of XERAVA to ertapenem in IGNITE1 and to meropenem in IGNITE4 to support regulatory approvals in cIAI
- Broad label well-suited for use as empiric therapy in the majority of patients in the hospital with cIAI

Pipeline candidates TP-271 and TP-6076 in Phase 1 development

TP-271

- A novel, fully synthetic tetracycline antibiotic targeting respiratory diseases caused by bacterial biothreats and antibiotic-resistant public health pathogens
- Potent *in vitro* activity against Gram-negative and Gram-positive pathogens associated with respiratory tract infections
- Positive safety and pharmacokinetic data from IV single- ascending and multiple-ascending dose studies
- Granted Qualified Infectious Disease Product and Fast Track designations by the FDA for both IV and oral formulations
- Both single- and multiple-ascending dose Phase 1 studies complete

TP-6076

- A novel, fully synthetic tetracycline antibiotic with potent *in vitro* activity against multidrug-resistant Gram-negative pathogens, including *Acinetobacter baumannii*
- Positive safety and pharmacokinetic data in single- and multiple-ascending dose studies
- Phase 1 bronchopulmonary disposition study ongoing
- Selected to receive $4 million funding from Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator (CARB-X) to support development

TP-2846

- A novel, potent tetracycline with activity across multiple *in vitro* and *in vivo* cancer models
- New mechanism of action which has not been fully explored clinically for oncology
- Antiproliferative activity against AML cell lines *in vitro* and against bone marrow samples from AML patients in *ex vivo* assays
- Potent dose-dependent *in vivo* efficacy when compared to cytarabine in AML mouse xenograft models

XERAVA™ – ADDRESSING THE ANTIBIOTIC CRISIS

XERAVA, approved for use by the FDA and EMA, is a novel, fully-synthetic fluorocycline antibiotic for the treatment of cIAIXERAVA was investigated for the treatment of cIAI as part of the Company's **I**nvestigating **G**ram-**N**egative **I**nfections **T**reated with **E**ravacycline (IGNITE) Phase 3 programs. In the Company's first pivotal Phase 3 trial in patients with cIAI, twice-daily IV XERAVA met the primary endpoint by demonstrating statistical non-inferiority of clinical response compared to ertapenem, was well-tolerated, and achieved high cure rates in patients with Gram-negative pathogens, including resistant isolates. In a second Phase 3 clinical trial in patients with cIAI, twice-daily IV XERAVA met the primary endpoint by demonstrating statistical non-inferiority of clinical response compared to meropenem, was well-tolerated, and achieved high cure rates.

MANAGEMENT

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Jacques Dumas, Ph.D.
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