Tetraphase Pharmaceuticals Presents Preclinical Data on TP-2846, a Novel Drug Candidate for Acute Myeloid Leukemia

April 3, 2019

WATERTOWN, Mass.--(BUSINESS WIRE)--Apr. 3, 2019-- Tetraphase Pharmaceuticals, Inc. (NASDAQ:TTPH), a biopharmaceutical company focused on developing and commercializing novel tetracyclines to treat serious and life-threatening conditions, today announced data from its preclinical program for TP-2846, the Company's new pipeline candidate for acute myeloid leukemia (AML) discovered using Tetraphase's proprietary total synthesis platform. The data were presented at the 2019 American Association for Cancer Research (AACR) Annual Meeting, held March 29-April 3 at the Georgia World Congress Center in Atlanta. The posters showed results from preclinical *in vitro* and *in vivo* studies demonstrating the activity, potency and unique mechanism of action (MOA) of TP-2846.

"Preclinical testing has characterized TP-2846 as a novel, potent, synthetic tetracycline with activity across multiple *in vitro* and *in vivo* cancer models," said Guy Macdonald, President and Chief Executive Officer of Tetraphase. "We are very encouraged by these early data, which suggest that TP-2846 holds the potential to benefit AML patients regardless of their mutation status. Further, these data show that because of its unique MOA, TP-2846 may have antileukemic activity in patients whose cancer has progressed while on different treatment regimens."

"TP-2846 has a new MOA that has never before been fully explored clinically as a viable approach to treating AML," said Jacques Dumas, Chief Scientific Officer of Tetraphase. "Our preclinical data demonstrated high potency across multiple AML cell lines, along with *in vivo* tumor responses at well-tolerated doses. These early data are very encouraging and support the continued preclinical evaluation of TP-2846 as a potential new antileukemia agent."

TP-2846 binds to the mitochondrial ribosome, inhibiting protein translation and inducing apoptosis. Mechanistic assays demonstrated changes in protein and gene expression – all consistent with disruption of mitochondrial translation.

TP-2846 showed antiproliferative activity against cultured AML cell lines *in vitro,* as well as bone marrow samples derived from AML patients in *ex vivo* assays. The data available to date also suggest that TP-2846's activity is independent of p53 status. Because of its novel MOA, TP-2846 maintained antiproliferative activity in cell lines that are resistant to anthracyclines, cytarabine and venetoclax, which are currently approved treatments for AML.

In vivo efficacy studies were also performed, comparing TP-2846 to cytarabine and tigecycline, a tetracycline antibacterial, in two AML mouse xenograft models. In these studies, TP-2846 demonstrated potent, dose-dependent *in vivo* efficacy, including greater than 50 percent tumor shrinkage in 19 out of 20 animals treated with TP-2846, while none in the comparator treatment groups achieved a tumor response in the same studies. TP-2846 was well tolerated in both models.

About Tetraphase Pharmaceuticals, Inc.

Tetraphase Pharmaceuticals, Inc., is a biopharmaceutical company using its proprietary chemistry technology to create novel tetracyclines for serious and life-threatening conditions, including bacterial infections caused by many of the multidrug-resistant bacteria highlighted as urgent public health threats by the World Health Organization and the Centers for Disease Control and Prevention. The Company has created more than 3,000 novel tetracycline compounds using its proprietary technology platform. Tetraphase's lead product, XERAVA™ (eravacycline), is approved for the treatment of complicated intra-abdominal infections by the U.S. Food and Drug Administration and the European Medicines Agency. The Company's pipeline includes TP-271 and TP-6076, which are in Phase 1 clinical trials, and TP-2846, which is in preclinical testing for acute myeloid leukemia. Please visit www.tphase.com for more company information.

Forward-Looking Statements

Any statements in this press release about our future expectations, plans and prospects, including statements regarding our strategy, future operations, prospects, plans and objectives, including our key milestones for 2019 and our anticipated cash runway, and other statements containing the words "anticipates," "believes," "expects," "plans," "will" and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including whether preclinical data is indicative of expected clinical data; our cash resources and the expected revenue will be sufficient to fund our operations in the future; our product candidates, such as TP2846, will succeed in clinical trials; even if such clinical trials are successful, whether we may ever achieve regulatory approval of such product candidates and other clinical, regulatory and commercial risk factors discussed in the "Risk Factors" section of our annual report on Form 10-K for the period ended December 31, 2018, filed with the Securities and Exchange Commission on March 15, 2019. In addition, the forward-looking statements included in this press release represent our views as of April 3, 2019. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so.

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