Tetraphase Pharmaceuticals Announces Data from a Pooled Analysis of IGNITE1 and IGNITE4 Phase 3 Trials Evaluating Eravacycline in Complicated Intra-Abdominal Infections at the ASM Microbe 2018 Annual Meeting

June 11, 2018

Eravacycline Global Surveillance and TP-6076 Data Also Highlighted

WATERTOWN, Mass., June 11, 2018 (GLOBE NEWSWIRE) -- Tetraphase Pharmaceuticals, Inc. (NASDAQ:TTPH), a biopharmaceutical company focused on developing and commercializing novel antibiotics to treat life-threatening multidrug-resistant (MDR) infections, recently reported data on eravacycline, which is currently under review by the United States Food and Drug Administration (FDA) and the European Medicines Agency (EMA) for the treatment of complicated intra-abdominal infections (cIAI), as well as data for TP-6076, its second-generation candidate targeting MDR Gram-negative bacteria, which is currently in phase 1 clinical testing. These data were presented at the American Society for Microbiology (ASM) Microbe 2018 Annual Meeting, held June 7-11, 2018 in Atlanta, GA.

"For the first time, we are sharing a pooled analysis of our IGNITE1 and IGNITE4 studies of eravacycline and are pleased to show that favorable clinical and microbiological responses were observed for eravacycline against Enterobacteriaceae and *Acinetobacter baumannii*, including those demonstrating resistant phenotypes and genotypes such as MDR and extended spectrum beta-lactamase (ESBL) production," said Guy Macdonald, President and Chief Executive Officer of Tetraphase. "Further, in a global surveillance study, eravacycline exhibited potent *in vitro* activity against Enterobacteriaceae, *A. baumannii, S. maltophilia* and clinically important Gram-positive organisms. In fact, the MIC_{90} of eravacycline against Enterobacteriaceae was up to four-fold lower than tigecycline, including against MDR isolates. These data lend additional support to our conviction that eravacycline has the potential to be an important new treatment option for patients with these serious and often life-threating infections."

Mr. Macdonald added, "We are also encouraged by the significant *in vitro* potency observed in the data presented on TP-6076 at ASM Microbe. The TP-6076 $MIC_{50/90}$ values for Enterobacteriaceae and *A. baumannii* were 0.063/0.5 µg/mL and 0.016/0.063 µg/mL, respectively. These data demonstrate that TP-6076 retained potency against several emergent resistance types and support our belief that it is a promising candidate for the treatment of MDR Gram-negative pathogens."

Microbiological Efficacy of Eravacycline Against Enterobacteriaceae and *Acinetobacter baumannii*, Including MDR Isolates: A Pooled Analysis From IGNITE1 and IGNITE4, Two Phase 3 Trials of Complicated Intra-Abdominal Infection

This poster presentation is the first post-hoc analysis of IGNITE1 and IGNITE4 – two of the **I**nvestigating **G**ram-**N**egative **I**nfections **T**reated with **E**ravacycline (IGNITE) phase 3 trials for eravacycline. IGNITE1 and IGNITE4 were randomized, double-blind, double-dummy, multi-center studies assessing the efficacy and safety of intravenous (IV) eravacycline compared to ertapenem and meropenem, respectively, in patients with cIAI. IGNITE1 included 541 patients and used a 10% non-inferiority margin, while IGNITE4 included 500 patients and used a 12.5% non-inferiority margin. Both IGNITE1 and IGNITE4 met the primary endpoints of clinical cure with eravacycline achieving high cure rates in patients with Gram-negative and Gram-positive pathogens, including resistant isolates.

The primary objective of the pooled analysis was to compare the clinical and microbiological responses at the test-of-cure (TOC) visit for subjects in the two treatment groups, with an emphasis on the response of MDR pathogens to eravacycline.

For patients with cIAI caused by Enterobacteriaceae, the overall favorable clinical and microbiological response rates among pooled eravacycline-treated subjects were 88.2% and 86.3%, respectively. Notably, in patients with infections due to ESBL-producing Enterobacteriaceae, eravacycline demonstrated a favorable microbiologic response rate of 88.9%. For patients with cIAI caused by *A. baumannii*, of which most strains were MDR, the overall favorable clinical and microbiological response rate among pooled eravacycline-treated subjects was 100%.

***In vitro* Activity of Eravacycline and Comparators Against Enterobacteriaceae, *Acinetobacter baumannii*, *Stenotrophomonas maltophilia*, Including MDR Isolates, Collected Globally in 2016**

Global clinical isolates were collected during a 2016 surveillance study with the purpose of evaluating the activity of eravacycline against isolates of Enterobacteriaceae, *A. baumannii* (including carbapenem-resistant *A. baumannii* [CRAB]*), Stenotrophomonas maltophilia*, *Staphylococcus aureus* (including methicillin-resistant *S. aureus* [MRSA]), and *Enterococcusspp.*, including those that are MDR. Results found the eravacycline $MIC_{50/90}$ for all Enterobacteriaceae (n=3,157) was 0.25/1 µg/ml, and for MDR-Enterobacteriaceae (n=666) was 0.5/2 µg/ml, respectively. Notably, the MIC_{90} of eravacycline against Enterobacteriaceae was up to four-fold lower than that of tigecycline, including against MDR isolates. Eravacycline also demonstrated potent *in vitro* activity with MIC_{90} values more than eight-fold lower than tigecycline against *A. baumannii*. Eravacycline also showed potent *in vitro* activity against clinically important Gram-positive organisms including MRSA and *Enterococcus spp*.

Eravacycline *In Vitro* Activity Against Clinical Isolates Obtained in the United States in 2016 From Urinary and Gastrointestinal Sources, Including Drug Resistant Pathogens

In a subset of data from the 2016 global surveillance study, 482 gastrointestinal and 715 genitourinary isolates from sites in the U.S. were analyzed to determine the MIC_{50} and MIC_{90} values for eravacycline and comparators. Results indicated potent *in vitro* activity against Enterobacteriaceae, in gastrointestinal and genitourinary isolates, with MIC_{90} values of ≤ 1mg/L. Eravacycline demonstrated four- to eight-fold greater potency than tigecycline against *Escherichia coli* and *Klebsiella pneumoniae*, two of the most common isolates in cIAI infections. In addition, eravacycline also had greater potency than tigecycline versus clinically important Gram-positive pathogens such as MRSA and *Enterococcus spp.*

TP-6076 is Active Against Bacterial Isolates Carrying Emergent Resistance Types

This poster presentation described data from a study in which TP-6076 was screened against Enterobacteriaceae and *A. baumannii* isolates from the U.S. Centers for Disease Control and Prevention (CDC) Antimicrobial Resistance Bank and other clinical sources and analyzed for activity against various resistance types. TP-6076 was assayed for activity against isolates carrying various RNA methylase genes, genes conferring fosfomycin resistance, tetracycline efflux pump genes, porin mutations and isolates resistant to ceftazidime-avibactam. Results found TP-6076 $MIC_{50/90}$ values

for resistant pathogens were 0.063/0.5 µg/ml for Enterobacteriaceae and 0.016/0.063 µg/ml for *A. baumannii*. These data highlight the consistency of TP-6076's potency in the presence of resistance mechanisms.

TP-6076 is a novel, synthetic, fluorocycline antibiotic candidate being developed for the treatment of serious and life-threatening bacterial infections, including those caused by pathogens otherwise resistant to current treatment options. It has demonstrated potent *in vitro* activity against MDR bacteria including carbapenem-resistant Enterobacteriaceae and carbapenem-resistant *A. baumannii*. In a single-ascending dose study, TP-6076 was found to have positive safety and pharmacokinetic data. It is currently in a phase 1 multiple-ascending dose study.

About Eravacycline
Eravacycline is a novel, fully-synthetic fluorocycline antibiotic being developed for the treatment of cIAI and other serious infections, including those caused by MDR pathogens that have been highlighted as urgent public health threats by both the World Health Organization and the CDC. Eravacycline has demonstrated potent activity against MDR pathogens, including carbapenem-resistant Enterobacteriaceae, *Acinetobacter baumannii*, and colistin-resistant bacteria carrying the *mcr-1* gene.

Eravacycline was investigated for the treatment of cIAI as part of the Company's IGNITE phase 3 program. In IGNITE1, a pivotal phase 3 trial in patients with cIAI, twice-daily IV eravacycline 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. The IGNITE1 data is serving as the basis of the MAA for IV eravacycline for the treatment of patients with cIAI now under review by the EMA. In IGNITE4, a second phase 3 clinical trial in patients with cIAI, twice-daily IV eravacycline met the primary endpoint by demonstrating statistical non-inferiority of clinical response compared to meropenem, was well-tolerated and achieved high cure rates. The Company has used the results from IGNITE1 and IGNITE4 to support a New Drug Application (NDA) with the FDA for IV eravacycline in cIAI. The NDA is currently under review with the FDA with a Prescription Drug User Fee Act (PDUFA) goal date of August 28, 2018. In clinical trials to date, eravacycline has been administered to more than 2,700 patients. Eravacycline has not been approved for commercial use.

About Tetraphase Pharmaceuticals, Inc.
Tetraphase is a biopharmaceutical company using its proprietary chemistry technology to create novel antibiotics for serious and life-threatening bacterial infections, including those caused by many of the MDR bacteria highlighted as urgent public health threats by the CDC. The Company has created more than 3,000 novel tetracycline compounds using its proprietary technology platform. Tetraphase's pipeline includes three antibiotic clinical candidates: eravacycline, which has completed phase 3 clinical trials and is under review for potential approval in complicated intra-abdominal infections by the FDA and the EMA, and TP-271 and TP-6076, which are in phase 1 clinical trials. 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, 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 the Company's regulatory submission will receive approval from the United States Food and Drug Administration or equivalent foreign regulatory agencies; whether, if any clinical candidate, including eravacycline obtains approval, it will be successfully distributed and marketed; and other factors discussed in the "Risk Factors" section of our quarterly report on Form 10-Q for the period ended March 31, 2018, filed with the Securities and Exchange Commission on May 3, 2018. In addition, the forward-looking statements included in this press release represent our views as of June 11, 2018. 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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