CoNCERT Pharmaceuticals Inc.™

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Concert Pharmaceuticals Initiates Phase 1b Clinical Trial of CTP-518, Protease Inhibitor for Treatment of HIV

Concert Earns $12 Million Milestone from GlaxoSmithKline CTP-518 has Potential as Unboosted HIV Protease Inhibitor

Lexington, MA -- Concert Pharmaceuticals, Inc. announced today that it has initiated a Phase 1b clinical study with CTP-518, its investigational oral HIV protease inhibitor for the treatment of HIV infection. In connection with the start of this multiple ascending dose arm of the Phase 1 study, Concert will receive a $12 million milestone payment under the company's strategic alliance with GlaxoSmithKline. The Phase 1b study will be used to assess the ability of CTP-518 to maintain acceptable therapeutic blood concentrations without a boosting agent such as ritonavir. It will also be used to determine doses for subsequent studies in HIV-infected patients.

"Preclinical data suggest that CTP-518 has the potential to be administered without pharmacokinetic boosting," said Roger Tung, Ph.D., President and CEO of Concert Pharmaceuticals. "Ritonavir co-administration is currently recommended for all marketed HIV protease inhibitors. Our goal is to provide patients with a potent and well-tolerated once-daily therapy without the side effects, inconvenience and expense of an additional drug."

The initial Phase 1 clinical trial is designed to evaluate the safety, tolerability and pharmacokinetics of CTP-518 in healthy volunteers after single and multiple doses. In addition, the Phase 1 study is intended to establish the pharmacokinetic enhancing effect of deuterium incorporation in CTP-518, and to determine whether CTP-518 dosed once-daily can maintain blood levels expected to be sufficient to suppress HIV replication when used as part of a standard three drug combination regimen. The current standard of care is to co-administer all HIV protease inhibitors with ritonavir, except in patients who cannot tolerate ritonavir. The multiple ascending dose phase is a randomized, double-blind, placebo-controlled study in which study participants will receive CTP-518 or placebo for 14 days.

In June 2009, Concert and GlaxoSmithKline announced a potential $1 billion strategic alliance to develop three deuterium-containing medicines, including CTP-518. Concert has responsibility for research and development activities of CTP-518 through completion of Phase I studies. After the completion of the Phase I program, GSK may elect to obtain an exclusive, worldwide license to CTP-518. At such time, GSK would assume responsibility for development and commercialization.

About CTP-518

CTP-518 is a novel HIV protease inhibitor developed from Concert's deuterium chemistry platform by replacing certain key hydrogen atoms of atazanavir with deuterium. In preclinical studies, the antiviral potency of atazanavir was fully retained but with markedly slower hepatic metabolism, providing an increase in half life and plasma trough levels. The preclinical studies indicated that CTP-518 could potentially avoid the need for a protease inhibitor boosting agent such as ritonavir. Current standard of care is to co-administer HIV protease inhibitors with ritonavir to increase the blood levels of these antiretroviral drugs prescribed to treat HIV infection. However, significant complications are associated with ritonavir. Importantly, because the relationship between atazanavir trough plasma levels and clinical virological response is well-established, Phase 1 testing is expected to provide clinical proof-of-concept for CTP-518. CTP-518 has the potential to be the first HIV protease inhibitor to eliminate the need to co-dose with a boosting agent.

About Deuterium

Deuterium is a safe, non-radioactive relative of hydrogen that can be isolated from sea water and has been used extensively in human metabolic and clinical studies. Because deuterium and hydrogen are nearly identical in structure, deuterium-containing compounds are expected to have similar pharmacological activity as their hydrogen analogs. However, as deuterium is heavier than hydrogen, it therefore forms a stronger chemical bond to a carbon atom of a molecule. The stronger chemical bond obtained by selective deuterium modification may substantially improve the drug's metabolic properties, potentially resulting in better safety, tolerability and/or efficacy.

About Concert

Concert Pharmaceuticals is a clinical stage biotechnology company focused on the application of deuterium chemistry to create novel and differentiated small molecule drugs. Concert's approach leverages known activity and safety of existing drugs to

reduce time, risk and expense of drug research and development. The Company has a broad research pipeline encompassing many therapeutic areas including infectious disease and renal disease, among others. Its lead development candidate is the HIV protease inhibitor CTP-518. In 2009, Concert entered into a potential $1 billion collaboration with GlaxoSmithKline to develop and commercialize certain deuterium-containing medicines. Founded in 2006, Concert has raised more than $110 million of venture and institutional capital. For more information on Concert Pharmaceuticals, please visit www.concertpharma.com.