# Spero Reports Preliminary Findings from Phase 1 Clinical Trial of SPR720 and Announces Plans to Advance Program into Proof-of-Concept Clinical Trial in Patients with NTM Pulmonary Disease

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**First indication of human safety and PK profiles for SPR720 supports advancement of program to a Phase 2a proof-of-concept clinical trial in patients planned to initiate in the second half of 2020**

CAMBRIDGE, Mass., Dec. 04, 2019 (GLOBE NEWSWIRE) -- Spero Therapeutics, Inc. (Nasdaq: SPRO), a multi-asset clinical-stage biopharmaceutical company focused on identifying, developing and commercializing treatments in high unmet need areas involving multi-drug resistant (MDR) bacterial infections and rare diseases, today announced preliminary findings from a Phase 1 first-in-human clinical trial of SPR720, its oral antimicrobial agent in development for the treatment of nontuberculous mycobacterial (NTM) pulmonary disease. Analysis of blinded data from the Phase 1 double-blind, placebo-controlled single ascending dose (SAD) and multiple ascending dose (MAD) clinical trial in healthy volunteers suggests that SPR720 is generally well-tolerated, with a pharmacokinetic (PK) profile that Spero believes supports the further development of SPR720 as an oral agent for the treatment of NTM pulmonary disease. Spero plans to submit an investigational new drug application (IND) to the U.S. Food and Drug Administration (FDA) and initiate a Phase 2a clinical trial of SPR720 in patients with NTM pulmonary disease during the second half of 2020.

"We are encouraged by the preliminary safety, tolerability and PK data collected for SPR720 in healthy volunteers," said Ankit Mahadevia, M.D., CEO of Spero Therapeutics. "In the absence of any oral antibiotic approved by the FDA for the treatment of NTM pulmonary disease, SPR720 has the potential to significantly change the treatment paradigm for this chronic, debilitating disease for which there are currently limited treatment options. The nature of these data gives us confidence in selecting doses for our planned Phase 2a dose-ranging clinical trial, which we plan to initiate in the second half of 2020."

The Phase 1 clinical trial of SPR720 (SPR720-101) evaluated the safety, tolerability and PK of orally administered SPR720 at single doses ranging from 100 mg to 2000 mg and repeat total daily doses ranging from 500 mg to 1500 mg for up to 7 to 14 days. Across seven SAD and five MAD cohorts, a total of 96 healthy volunteers (including a cohort of healthy elderly (age ≥ 65 years) volunteers) were randomized to receive SPR720 or placebo. There were no serious adverse events reported and all participants completed the trial. Although the data remain blinded, an analysis of preliminary data indicates that SPR720 was generally well-tolerated at doses up to 1000 mg over the maximum studied duration of 14 days. Preliminary analyses of PK data across the cohorts show no significant impact of either advanced age or administration with food on PK variables. At doses of 500 mg or higher, the mean plasma drug exposures of SPR719, the active metabolite of SPR720, are consistent with those suggested by *in vitro* and *in vivo* models of SPR720 to be necessary for clinical efficacy against target NTM pathogens.

Spero expects to present final data from the SPR720 Phase 1 SAD/MAD clinical trial in 2020. Spero plans to request a meeting with the FDA in the first half of 2020, submit an IND to the FDA in the second half of 2020 and, following IND acceptance, initiate a dose-ranging Phase 2a clinical trial evaluating SPR720 in patients with NTM pulmonary disease due to *Mycobacterium avium* complex (MAC) in the second half of 2020.

**About SPR720**

SPR720 represents a novel class of antibacterial agents that target enzymes essential for bacterial DNA replication. SPR720 was acquired from Vertex and is currently under development by Spero as an oral therapy for the treatment of non-tuberculous mycobacterial (NTM) disease, a rare orphan disease. NTM are ubiquitous environmental pathogens that can cause progressive lung damage and respiratory failure, particularly in patients with compromised immune systems or underlying pulmonary disorders. Although rare, the incidence of pulmonary NTM disease is increasing worldwide. Treatment of pulmonary NTM disease requires prolonged therapy (continuing for approximately 12 to 24 months) with a combination of mostly unapproved drugs and is frequently complicated by tolerability and/or toxicity issues. Additionally, there are currently no oral antibiotics specifically approved for use to treat pulmonary NTM disease. Thus, if successfully developed, SPR720 has the potential to address an important unmet need as the first oral antibiotic approved for the treatment of this debilitating disease. Under Spero's collaboration with Gates MRI, SPR720 will also be developed for the treatment of *Mycobacterium tuberculosis* (Mtb) infections in select countries. Tuberculosis is a priority pathogen as defined by the World Health Organization with it being one of the top ten causes of death worldwide, and a situation where resistance is increasing and current treatment approaches are not optimal. Spero believes that its intellectual property portfolio for SPR720 will provide protection globally, including in the United States and Europe, through 2033. SPR720 has been granted Qualified Infectious Disease Product (QIDP) designation by the U.S. Food and Drug Administration for the treatment of lung infections caused by non-tuberculous mycobacteria and lung infections caused by *Mycobacterium tuberculosis* (Mtb).

**SPR720 Research Support**

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**About Spero**

Spero Therapeutics, Inc. is a multi-asset, clinical-stage biopharmaceutical company focused on identifying, developing and commercializing novel treatments for multidrug-resistant (MDR) bacterial infections and rare diseases.

Spero's lead product candidate, SPR994, is designed to be the first oral carbapenem-class antibiotic for use in adults to treat MDR Gram-negative infections.

Spero is also advancing SPR720, its novel oral therapy product candidate designed for the treatment of rare, orphan disease caused by pulmonary non-tuberculous mycobacterial (NTM) infections.

Spero also has a platform technology known as its Potentiator Platform that it believes will enable it to develop drugs that will expand the spectrum and potency of existing antibiotics, including formerly inactive antibiotics, against Gram-negative bacteria. Spero's lead product candidates generated from its Potentiator Platform are two IV-administered agents, SPR206 and SPR741, designed to treat MDR Gram-negative infections in the hospital setting.

For more information, visit ***https://sperotherapeutics.com***.

**Forward Looking Statements**

This press release may contain forward-looking statements. These statements include, but are not limited to, statements about Spero's expectation that positive results from a single pivotal Phase 3 clinical trial of SPR994 and ancillary supportive studies to be conducted in parallel with the Phase 3 trial will support the approval of SPR994; the design, initiation, timing, progress and results of Spero's preclinical studies and clinical trials and its research and development programs, including the timing of Spero's regulatory meeting with the FDA regarding SPR720, the timing of Spero's IND filing with the FDA regarding SPR720 and the commencement of Spero's planned Phase 2a clinical trial of SPR720; statements regarding management's assessment of the results of such preclinical studies and clinical trials; the timing of clinical data, including the availability of pharmacokinetic data from the lead-in cohort in the Phase 3 clinical trial of SPR994, final data from the Phase 1 clinical trial of SPR720 and top-line data from the Phase 1 clinical trial of SPR206; and Spero's cash forecast and anticipated expenses, the sufficiency of its cash resources and the availability of additional non-dilutive funding from governmental agencies beyond any initially funded awards. In some cases, forward-looking statements can be identified by terms such as "may," "will," "should," "expect," "plan," "aim," "anticipate," "could," "intent," "target," "project," "contemplate," "believe," "estimate," "predict," "potential" or "continue" or the negative of these terms or other similar expressions. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including whether the FDA will accept a single pivotal study for approval of SPR994; whether results obtained in preclinical studies and clinical trials will be indicative of results obtained in future clinical trials; whether Spero's product candidates will advance through the preclinical development and clinical trial process on a timely basis, or at all, taking into account the effects of possible regulatory delays, slower than anticipated patient enrollment, manufacturing challenges, clinical trial design and clinical outcomes; whether the results of such trials will warrant submission for approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies; whether Spero's cash resources will be sufficient to fund its continuing operations for the periods and/or trials anticipated; and other factors discussed in the "Risk Factors" set forth in filings that Spero periodically makes with the U.S. Securities and Exchange Commission. The forward-looking statements included in this press release represent Spero's views as of the date of this press release. Spero anticipates that subsequent events and developments will cause its views to change. However, while Spero may elect to update these forward-looking statements at some point in the future, it specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Spero's views as of any date subsequent to the date of this press release.

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