



Sangamo BioSciences Initiates Phase 2 Clinical Trial of ZFP Therapeutic in Stem Cell Mobilization

Study to Evaluate Effect of SB-509 Treatment on Stem Cell Mobilization in Subjects with Diabetic Neuropathy

RICHMOND, Calif., Jan 07, 2008 /PRNewswire-FirstCall via COMTEX News Network/ -- Sangamo BioSciences, Inc. (Nasdaq: SGMO) today announced the initiation of a randomized, single-blind, placebo-controlled, multi-center Phase 2 clinical trial in subjects with mild to moderate diabetic neuropathy (DN). The study is designed to evaluate the pharmacokinetics of stem cell mobilization into the bloodstream after treatment with varying doses of SB-509 as well as the clinical safety and clinical effects of SB-509 administration.

"In addition to Phase 1 clinical data that suggest neuroprotective, neuroregenerative and angiogenic effects of SB-509, we have preclinical and preliminary clinical data that suggest that treatment with SB-509 can mobilize stem cells into the circulation," stated Dale Ando, Sangamo's vice president of therapeutics and chief medical officer. "Stem cells are of interest as potential therapeutic agents as they can be induced to become cells with a special function in the body such as nerves and blood vessels and can potentially migrate from the blood circulation into areas of injury or degeneration to participate in the body's repair response. The stem cells that have been observed post treatment with SB-509 are highly enriched in cell types that mediate tissue repair. In addition, early data suggests that SB-509 treatment may mobilize between 100 to 1000-fold more cells than are typically being introduced into subjects in many of the ex vivo stem cell therapeutic approaches that are currently being tested. Ultimately, this phenomenon may also serve as a pharmacodynamic surrogate biomarker enabling a physician to easily monitor progress of this therapy for DN after SB-509 administration."

SB-509 is an injectable formulation of plasmid DNA that encodes a zinc finger DNA-binding protein transcription factor (ZFP TF (TM)), designed to upregulate the vascular endothelial growth factor A (VEGF-A) gene. Sangamo has already completed enrollment of subjects in a Phase 2 randomized double blind, placebo-controlled, repeat-dosing clinical trial of SB-509 in subjects with mild to moderate DN and has an ongoing Phase 2 clinical trial of SB-509 in diabetic subjects with moderate to severe DN.

"We are very encouraged by the early observations of this novel activity of SB-509 in stem cell mobilization," said Edward Lanphier, President and CEO of Sangamo BioSciences. "We look forward to confirming and expanding these data in this new Phase 2 study. In addition to our Phase 2 program in DN, we are also evaluating our VEGF activating ZFP TF in models of spinal cord injury, traumatic brain injury, and in a major new initiative, a Phase 2 clinical trial in Amyotrophic Lateral Sclerosis (ALS) which we expect to initiate later this year."

Supporting Pre-Clinical and Clinical Observations

Pre-clinical studies of a VEGF-activating ZFP TF demonstrated statistically significant ($p < 0.05$) increases in stem cells in the bone marrow and bloodstream of animals compared to a placebo. These preclinical findings led to a small-scale clinical study into the effect of SB-509 administration on stem cell mobilization in human subjects with DN. Peripheral blood samples were evaluated from 6 subjects enrolled in the Phase 1b DN study and treated with SB-509. Blood samples were obtained before SB-509 dosing and at various time-points. All samples were analyzed in a blinded fashion for aldehyde dehydrogenase staining activity (ALDH-bright cells). Although inter-patient variability limits the conclusions to be drawn from such a small sample size, a significant difference in the extent of stem cell mobilization was observed in subjects treated with 60 mg of SB-509 and subjects treated with placebo at 30 days after dosing.

ALDH-bright cells can be identified in the subject's blood by their ability to be stained with a substrate of aldehyde dehydrogenase, an enzyme that is highly expressed in stem cells. ALDH-bright cell populations of human bone marrow have been shown to be highly enriched in cell types thought to mediate tissue repair, including endothelial, mesenchymal, neural and hematopoietic progenitor cells.

About the Phase 2 Study of SB-509 to Evaluate Stem Cell Mobilization

Twenty subjects will be enrolled in the stem cell mobilization Phase 2 trial. Subjects will be randomized to one of four cohorts with 5 subjects in each cohort. Cohorts 1 and 2 will receive a single treatment of 30 mg into one leg or 60 mg (30 mg in each leg) of SB-509, respectively, by intramuscular (IM) injection on Day 0. Cohort 3 will receive a single treatment of an equal

volume of placebo by IM injection into a lower limb on Day 0. Cohort 4 will receive two treatments of 60 mg of SB-509 (30 mg in each leg) by IM injection (Day 0 and 90). Subjects will receive injections in a distribution pattern that targets the major peripheral nerves in the legs and feet.

Peripheral blood samples taken before and at various times post-treatment with SB-509 will be assayed and the numbers of circulating stem cells will be assessed using stem cell-specific enzymatic activity (aldehyde dehydrogenase staining), culture-based assays, as well as assays of cell surface expression of stem cell-specific antigens.

The signs and symptoms of diabetic peripheral neuropathy and any changes that occur during the trial will also be evaluated based on neurological examination data, electrophysiological testing data, subject neurological questionnaire, and subject pain assessment. Specifically, investigators will use the following tests: quantitative sensory testing (QST) with the Vibratron II instrument, to assess the threshold of detection of vibration, electrophysiological testing and the visual analog scale for pain intensity (VASPI). A total neuropathy composite score (TNS) will be computed to evaluate changes in nerve health.

For each subject, the trial is expected to take 14.5 months: 2.5 months for screening and subject treatment and a further 12 months for subject follow-up. Individuals interested in participating in this trial should visit <http://www.clinicaltrials.gov/>.

About Diabetic Neuropathy

Diabetic peripheral neuropathy is one of the most frequent complications of diabetes. Symptoms include numbness, tingling sensations and pain particularly in the toes or feet. This gradually evolves to loss of sensation and motor function as nerve damage progresses. Ulcers and sores may appear on numb areas of the foot because pressure or injury goes unnoticed. Despite adequate treatment, these areas of trauma frequently become infected and this infection may spread to the bone, necessitating amputation of the leg or foot. More than 60 percent of non-traumatic lower-limb amputations in the United States occur among people with diabetes. In the period from 2000 to 2001, this translated to approximately 82,000 amputations. The American Diabetes Association estimates that there are approximately 20.8 million people with diabetes in the United States and that of those about 60 percent to 70 percent have mild to severe forms of neuropathy. According to the Centers for Disease Control, diabetes is becoming more common in the United States. From 1980 through 2002, the number of Americans with diabetes more than doubled.

About Sangamo

Sangamo BioSciences, Inc. is focused on the research and development of novel DNA-binding proteins for therapeutic gene regulation and modification. The most advanced ZFP Therapeutic(TM) development program is currently in Phase 2 clinical trials for evaluation of safety and clinical effect in patients with diabetic neuropathy. Phase 1 clinical trials are ongoing to evaluate a ZFP Therapeutic for peripheral artery disease. Other therapeutic development programs are focused on ALS, cancer, HIV/AIDS, neuropathic pain, nerve regeneration, Parkinson's disease and monogenic diseases. Sangamo's core competencies enable the engineering of a class of DNA-binding proteins known as zinc finger DNA-binding proteins (ZFPs). By engineering ZFPs that recognize a specific DNA sequence Sangamo has created ZFP transcription factors (ZFP TF(TM)) that can control gene expression and, consequently, cell function. Sangamo is also developing sequence-specific ZFP Nucleases (ZFN(TM)) for gene modification. Sangamo has established strategic partnerships with companies outside of the human therapeutic space including Dow AgroSciences, Sigma-Aldrich Corporation and several companies applying its ZFP Technology to enhance the production of protein pharmaceuticals. For more information about Sangamo, visit the company's web site at <http://www.sangamo.com>.

This press release may contain forward-looking statements based on Sangamo's current expectations. These forward-looking statements include, without limitation, references to the clinical trials of SB-509, research and development of novel ZFP TFs and ZFNs and therapeutic applications of Sangamo's ZFP technology platform. Actual results may differ materially from these forward-looking statements due to a number of factors, including uncertainties relating to the initiation and completion of stages of the SB-509 clinical trials, whether the SB-509 clinical trials will validate and support tolerability and efficacy of SB-509, effects of SB-509 administration on stem cell mobilization, technological challenges, Sangamo's ability to develop commercially viable products and technological developments by our competitors. See the company's SEC filings, and in particular, the risk factors described in the company's Annual Report on Form 10-K and its most recent Quarterly Reports on Form 10-Q. Sangamo BioSciences, Inc. assumes no obligation to update the forward-looking information contained in this press release.

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