

Acceleron Initiates Phase 1 Clinical Trial for ACE-031 to Treat Diseases Involving Muscle Loss

CAMBRIDGE, Mass. – October 20, 2008 - Acceleron Pharma, Inc., a biopharmaceutical company developing novel therapeutics that modulate the growth of tissues including bone and muscle, today announced the initiation of a Phase 1 clinical study of ACE-031, its lead compound for treating diseases involving the loss of muscle mass and function. The Phase 1 trial is a randomized, placebo-controlled single-dose, dose-escalating study to evaluate the safety and pharmacokinetics of ACE-031. This clinical trial is the first-in-human study in the global development of ACE-031 and will be conducted in Canada.

“There is a tremendous unmet medical need to treat patients suffering from a wide array of diseases involving the loss of muscle strength and function. ACE-031 has the potential to be a very important new approach to treat these serious and life-threatening conditions,” said Matthew Sherman, M.D., Chief Medical Officer of Acceleron.

“The start of this ACE-031 Phase 1 trial is another important clinical milestone for Acceleron,” said John Knopf, Ph.D., Chief Executive Officer of Acceleron. “Last week we announced the start of a Phase 2 clinical trial in patients with multiple myeloma bone disease with ACE-011, the lead compound in our bone program, and today we are proud to announce the start of the first clinical trial for ACE-031, the lead compound in our muscle program. The Acceleron pipeline continues to mature and expand, and most notably, the company remains in a strong financial position to deliver on our clinical goals. We look forward to several data presentations at major medical meetings before the end of the year that will demonstrate the progress of our pipeline.”

Muscle is increasingly recognized as central to many biological processes and plays a major role in human health. The loss of muscle mass and strength is ultimately directly related to the cause of death in neuromuscular diseases such as muscular dystrophy and amyotrophic lateral sclerosis (ALS). Severe muscle loss in cancer leads to serious complications and a poor prognosis. Muscle loss is a natural consequence of aging, similar to bone loss, resulting in decreased muscle strength (frailty), reduced mobility and an increased risk of a fall and broken bones. In metabolic diseases, an imbalance of diet, energy utilization and skeletal muscle leads to poor metabolic function. By increasing muscle mass there is a corresponding decrease in fat mass and improvements in metabolic function.

About ACE-031

ACE-031, a soluble molecule based on the activin receptor type IIB (ActRIIB), is a biologic therapeutic that inhibits signaling through the ActRIIB receptor. By blocking signaling through ActRIIB, ACE-031 increases muscle mass and strength. In numerous and varied animal models of disease, ACE-031 significantly increased muscle mass and muscle strength. ACE-031 has shown encouraging preclinical results in animal models of age-related muscle loss, neuromuscular disease, cancer treatment-related muscle loss and metabolic diseases.

About Acceleron

Acceleron is a privately held biopharmaceutical company committed to discover, develop, manufacture and commercialize novel biotherapeutics that modulate the growth of bone, muscle, fat and the vasculature to treat musculoskeletal, metabolic and cancer-related diseases. Acceleron's scientific approach takes advantage of its unique insight into the regenerative powers of the Growth and Differentiation Factor (GDF) family of proteins. ACE-011, a novel bone forming compound, is the Company's lead compound and is being developed to reverse bone loss in diseases such as cancer-related bone loss in a strategic alliance with the multinational biopharmaceutical company Celgene Corporation. ACE-031, a novel muscle building compound, is being developed to increase muscle mass and strength. In addition, the company is advancing through preclinical development product candidates that control angiogenesis and inhibit fat accumulation. Acceleron utilizes proven biotherapeutic technologies and capitalizes on the company's internal Good Manufacturing Practice (GMP) manufacturing capability to rapidly and efficiently advance its therapeutic programs. The investors in Acceleron are Advanced Technology Ventures, Bessemer Ventures, Flagship Ventures, MPM BioEquities, OrbiMed Advisors, Polaris Ventures, QVT Financial, Sutter Hill Ventures and Venrock. For more information, visit www.acceleronpharma.com.

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