



**Acceleron Pharma's ACE-031 Increases Lean Body Mass
in Phase 1 Single Dose Clinical Trial
Data to be Presented at the 14th International Congress of the World Muscle Society**

- Company Initiates ACE-031 Phase 1 Multiple Dose Clinical Trial -

CAMBRIDGE, Mass. – September 2, 2009 - Acceleron Pharma, Inc., a biopharmaceutical company developing novel therapeutics that modulate the growth of cells and tissues including red blood cells, bone, and muscle, today announced preliminary results from the ACE-031 Phase 1 single dose clinical trial indicating that ACE-031 was safe and well-tolerated at all dose levels and increased lean body mass. The results from this randomized, placebo-controlled study will be presented at the 14th International Congress of the World Muscle Society taking place in Geneva, Switzerland, September 9-12, 2009. In addition, Acceleron announced that it has initiated a multiple dose Phase 1 clinical trial for ACE-031.

"We are excited to share these encouraging results from our ACE-031 Phase 1 single dose clinical trial at the World Muscle Society meeting next week. Preliminary results show increases in lean body mass and muscle volume as well as positive effects on bone and fat," said Matthew Sherman, M.D., Chief Medical Officer at Acceleron. "Based on the promising results of this Phase 1 single dose clinical trial, we have initiated a multiple dose study of ACE-031 in healthy volunteers."

"ACE-031 continues to demonstrate enormous clinical potential as a treatment for patients suffering from neuromuscular diseases such as muscular dystrophy and amyotrophic lateral sclerosis (ALS)," said John Knopf, Ph.D., Chief Executive Officer of Acceleron. "In addition, targeting muscle and adipose tissue with our related ACE-435 compound holds great promise to treat a wide range of diseases including cancer cachexia, metabolic diseases and age-related muscle loss. I'm proud of Acceleron's leadership in the field of targeting muscle to treat disease, which is an area that we believe holds great promise."

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. 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 fusion protein based on the activin receptor type IIB (ActRIIB), is a biologic therapeutic that inhibits signaling through the ActRIIB receptor. By preventing 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, and a related molecule ACE-435, have shown encouraging preclinical results in animal models of age-related muscle loss, neuromuscular disease, cancer treatment-related muscle loss and metabolic diseases. ACE-031 is currently being studied in a Phase 1 multiple dose clinical trial in healthy volunteers. ACE-435 is expected to enter clinical trials in 2010.

About Acceleron

Acceleron is a privately held biopharmaceutical company committed to discover, develop, manufacture and commercialize novel biotherapeutics that modulate the growth of red blood cells, 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 TGF-beta superfamily of proteins. ACE-011 is currently being studied in two Phase 2 clinical trials in cancer patients. ACE-031 is currently being studied in a Phase 1 clinical trial in healthy volunteers. In addition, the company is advancing new product candidates that increase muscle mass, control angiogenesis, inhibit fat accumulation and increase hemoglobin. Acceleron utilizes proven biotherapeutic technologies and capitalizes on the company's internal GMP manufacturing capability to rapidly and efficiently advance its therapeutic programs. The investors in Acceleron include Advanced Technology Ventures, Bessemer Ventures, Celgene, 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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