Enobia Pharma Inc. Raises US$50M from Current Investors in Series C Financing

Montreal, QC, August 10, 2009 – Enobia Pharma, an emerging biotech company focused on developing novel therapeutics for serious bone disorders, today announced that it raised US$50 million from its current investors in a Series C financing. The proceeds will be used primarily to fund the ongoing development program for ENB-0040, Enobia's enzyme replacement therapy (ERT) for hypophosphatasia (HPP), a rare and potentially deadly genetic bone disorder for which there is no currently approved therapy. In addition, a portion of the proceeds will be used to fund an unspecified development program.

Participants in the financing include OrbiMed Advisors LLC ("OrbiMed") of New York, CTI Life Sciences Fund of Montreal ("CTI"), the Fonds de Solidarite FTQ, Desjardins Venture Capital and Lothian Partners. All previously participated in the CDN$40.1M Series B financing in August 2007. "Enobia and our collaborators have been enormously pleased by the early clinical results in infants with severe hypophosphatasia. We are fortunate to have the ongoing support of knowledgeable investors helping the Company to advance the ENB-0040 development program," said Robert Heft, PhD, President and CEO of Enobia. "This new round of financing will provide the Company with sufficient capital to fund our activities through the first half of 2011 and to reach important clinical and manufacturing milestones."

"This financing underscores our enthusiasm for the potential of ENB-0040 in patients with HPP," said Jonathan Silverstein, Enobia Chairman and General Partner of OrbiMed. "We're pleased to build on our existing relationship with this team of scientists and management who are dedicated to finding treatments for this and other devastating rare bone disorders." Six month safety and efficacy results of Enobia's Phase I/II study of ENB-0040 in infants with the severe form of HPP will be presented at the 31st Annual Meeting of the American Society for Bone and Mineral Research (www.asbmr.org/meeting) in September by Michael P. Whyte, M.D., Medical/Scientific Director of the Center for Metabolic Bone Disease and Molecular Research at Shriners Hospitals for Children in St. Louis.

About ENB-0040

ENB-0040, a subcutaneous enzyme replacement therapy of tissue non-specific alkaline phosphatase (TNSALP) fused to a patented bone targeting peptide ENB-0040, is currently in Phase II clinical trials for the treatment of severe hypophosphatasia in infants. Studies in children with hypophosphatasia are anticipated to begin later this year. Preclinical studies in the "knockout" mouse model of severe hypophosphatasia showed that subcutaneous administration of ENB-0040 significantly improved survival, prevented the skeletal and dental manifestations of the disease and corrected skeletal defects in mice with established disease. ENB-0040 was awarded orphan designation in the US and EU in 2008 and Fast Track status in 2009.

About Hypophosphatasia

Hypophosphatasia is a rare, inherited, and sometimes fatal metabolic bone disease. Affected individuals have low levels of the tissue non-specific form of alkaline phosphatase, an essential regulator of bone mineralization, leading to rickets in infants and children and osteomalacia ("soft bones" resulting from poor mineralization) in adults. Disease severity is inversely proportional to the

age at symptom onset, but morbidity is cumulative and can worsen with age. Clinical severity ranges from the severe perinatal or infantile forms, with profound skeletal hypomineralization and respiratory compromise often causing death, to debilitating osteomalacia in adults. In the infantile form, infants may appear normal at birth but develop serious symptoms in the first six months of life. These can include failure to thrive, respiratory failure, fractures, and seizures. Radiographic findings include generalized hypomineralization and rickets. Mortality in these patients may be as high as 50%. In the childhood form, patients have varying degrees of hypomineralization, frank rickets, short stature, bone pain, muscle weakness, delayed motor milestones, early loss of deciduous teeth, and may experience frequent, poorly-healing fractures. In the adult form, the underlying osteomalacia causes pathological fractures that in some cases stops ambulation.

About Enobia Pharma Inc.

Enobia is a private, Montreal based company focused on the development of therapeutics to treat serious bone disorders for which there is no currently approved drug therapy. ENB-0040 for the treatment of hypophosphatasia is the Company's lead program.