

For Immediate Release



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### **Cytokine Announces Oral Efficacy of Anti-Cytokine Semapimod**

**KING OF PRUSSIA, PA. October 29, 2007** - Cytokine PharmaSciences, Inc. (CPSI) today announced development of an orally active form of semapimod, its synthetic anti-cytokine compound. Semapimod is a potential treatment for inflammatory and autoimmune diseases including rheumatoid arthritis, Crohn's and psoriasis. The compound has previously been tested in clinical trials only as an intravenous infusion and the newly developed oral form should significantly enhance its acceptability to patients and physicians.

Semapimod is a synthetic guanylhydrazone that inhibits the activity of various kinases, including Raf kinase, a key enzyme in the MAPK/ERK signal transduction pathway. Semapimod's inhibition of Raf-kinase decreases phosphorylation of MEK, thereby also inhibiting phosphorylation of p38 MAP kinase. This halts production of several important inflammatory cytokines, including TNF-alpha, IL-1, and IL-6. Preclinical studies have repeatedly demonstrated semapimod's efficacy in animal models of inflammatory and proliferative diseases, including endotoxic shock and toxicity, pancreatitis, ischemia and stroke, necrotizing enterocolitis, and neointimal formation. Despite early signals of efficacy, the Phase II studies CPSI conducted in Crohn's disease were dose-limited by local reactions (i.e., phlebitis) to the semapimod-HCl formulation. These reactions led to the need to develop a less irritating intravenous (IV) form. In response, CPSI has developed a new salt form of semapimod with a dramatically improved solubility and tolerability profile, which ultimately resulted in the new orally available formulation.

Dr. Daan W. Hommes, (University of Leiden; formerly with the Academic Medical Center, Amsterdam, The Netherlands) tested an IV formulation of semapimod in an early Crohn's disease study. He commented: "The early work with semapimod showed the promise of this drug. Continued development would benefit from improved dosing regimens."

Dr. Marco Bruno (AMC, Amsterdam, The Netherlands) tested semapimod IV for prevention of ERCP-induced pancreatitis. He stated: "The trial showed a clear trend toward efficacy when semapimod was used prophylactically. The reductions in the pancreatitis rate and amylase levels were impressive when one considers that this was a single dose treatment where we did not know the optimal dose. Larger scale studies are clearly warranted."

The ability to dose orally is viewed as a considerable advance in the development of semapimod. Dr. Thais Sielecki, Director of Research at CPSI, commented: "As a synthetic small-molecule, semapimod holds the promise of a more cost-effective alternative to expensive and difficult-to-manufacture biologics. Oral dosing would also make treatment much easier than the IV and subcutaneous routes, which are currently the only options for many patients."

The new salts have demonstrated their ability to reduce cytokine levels when given orally in a preclinical sepsis model. CPSI has recently obtained a patent on these new salts (US 7,244,765), giving considerable patent life for the reformulated product.

The company is ready to move these new salts into clinical trials and is seeking a partner to assist with their development plan.

**About Cytokine PharmaSciences, Inc.**

Cytokine PharmaSciences is a biopharmaceutical company located in King of Prussia (near Philadelphia), Pennsylvania. The company licenses technologies from academia and other sources, develops products from those technologies and outlicenses the products to third parties for marketing. For more information, visit to [www.cytokinepharmasciences.com](http://www.cytokinepharmasciences.com).