



FOR IMMEDIATE RELEASE

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CPEX PHARMACEUTICALS ANNOUNCES INITIATION OF PHASE II TRIAL FOR UROLOGY INDICATION BY SERENITY PHARMACEUTICALS

Exeter, NH, November 17, 2008 – CPEX Pharmaceuticals, Inc. (NASDAQ: CPEX) today announced that its development and commercialization partner, Serenity Pharmaceuticals, has reported initiation of a Phase II clinical study of an intranasal drug candidate delivered using CPEX’s patented drug delivery platform technology for an undisclosed urology indication. The study is a multi-center study expected to be completed by the end of 2008.

“In August of this year, CPEX announced that our partner Serenity had filed an Investigational New Drug application for their urology drug candidate” commented John Sedor, president and chief executive officer of CPEX Pharmaceuticals. “Now just a few months later we are pleased they are reporting the initiation of a Phase II trial for this potential product. The start of this clinical trial illustrates the ongoing progress being made by Serenity and its commitment to execute aggressively on its clinical development plan.”

About Serenity Pharmaceuticals

Serenity Pharmaceuticals is a privately held, Pennsylvania-based pharmaceutical development company.

About CPEX Pharmaceuticals

CPEX Pharmaceuticals, Inc. (NASDAQ: CPEX) is an emerging specialty pharmaceutical company focused on the development, licensing and commercialization of pharmaceutical products utilizing CPEX’s validated drug delivery platform technology. CPEX has U.S. and international patents and other proprietary rights to technologies that facilitate the absorption of drugs. CPEX has licensed applications of its proprietary CPE-215[®] drug delivery technology to Auxilium Pharmaceuticals, Inc., which launched Testim[®], a topical testosterone gel, in 2003. CPEX also is developing a proprietary intranasal insulin product candidate, Nasulin[™], which is

in Phase II clinical trials. CPEX maintains its headquarters in Exeter, NH. For more information about CPEX, please visit www.cpexpharm.com.

Safe Harbor Statement under the U.S. Private Securities Litigation Reform Act of 1995:

This press release contains forward-looking statements, including, without limitation, statements regarding the prospects for development of a urology product with Serenity Pharmaceuticals. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from future results expressed or implied by such statements. Factors that may cause such differences include, but are not limited to, risks associated with the following: clinical trials may not demonstrate the efficacy and safety of product candidates using CPEX's drug delivery technology, regulatory approvals may be delayed or not obtained, CPEX is dependent on other parties to conduct clinical trials and commercialize product candidates that use its drug delivery technology and such product candidates may not gain market acceptance and may not be able to compete with products of other manufacturers of proprietary pharmaceuticals, as well as risks associated with the unpredictability of patent protection, intellectual property litigation, and other uncertainties detailed under "Risk Factors" in CPEX's Registration Statement on Form 10 dated June 17, 2008 in connection with the distribution of CPEX's common stock to stockholders of Bentley Pharmaceuticals, Inc. CPEX cautions investors not to place undue reliance on the forward-looking statements contained in this release. These statements speak only as of the date of this document, and CPEX undertakes no obligation to update or revise the statements, except as may be required by law.