April 17, 2007

Enzon's PEG-SN38 Shows Anti-Tumor Activity in Resistant Preclinical Tumor Models

-- PEG-SN38 and Customized Linker Technology(TM) data presented at AACR annual meeting --

BRIDGEWATER, N.J., Apr 17, 2007 (BUSINESS WIRE) -- Enzon Pharmaceuticals, Inc. (Nasdaq: ENZN) today announced new preclinical data showing that treatment with PEG-SN38, Enzon's PEGylated SN38 compound, resulted in significant tumor growth inhibition in mice resistant to Camptosar(R) (irinotecan HCl injection) and outperformed Camptosar in mice when given as a second round therapy. Additionally, PEG-SN38 demonstrated long-lasting antitumor activity in mouse models of human breast and pancreatic cancers. The data were presented at the American Association for Cancer Research (AACR) annual meeting in Los Angeles, April 14-18, 2007.

"This exciting new data showing PEG-SN38's activity in resistant tumors combined with the continuing anti-tumor activity demonstrated at EORTC-NCI-AACR last fall, adds further merit to our planned clinical program set to begin later this year," said Jeffrey H. Buchalter, Enzon's chairman and chief executive officer. "In addition, I'm pleased to see the continued validation of our Customized Linker Technology platform which may provide a unique approach for more efficient delivery of antisense technologies, including Locked Nucleic Acid (LNA)."

Study Details

EZN-2208, a novel polyethyleneglycol-SN38 conjugate, has potent antitumor activity in a panel of human tumor xenografts (Abstract #1494)

Data from this study showed that PEG-SN38 administered to Camptosar-resistant mice (those that did not respond to Camptosar treatment) resulted in a 25 percent decrease in tumor volume. Additionally in Camptosar-sensitive mice (those that initially responded to Camptosar treatment), tumor growth resumed after a second dose of Camptosar, while mice switched to PEG-SN38 therapy experienced tumor regression followed by slow tumor growth.

Additional data showed that PEG-SN38 caused continued anti-tumor activity for over 90 and 120 days respectively in breast and pancreatic cancer models.

Customized positive PEG linkers for the delivery of antisense molecules (Abstract #4731)

This study demonstrated the utility of Enzon's Customized PEG Linkers to effectively deliver antisense molecules systemically. Effective systemic delivery of second- and third-generation antisense technology approaches, such as LNA and short interfering RNA (siRNA), is the biggest hurdle to fully realize their therapeutic potential in people. In this study, Enzon demonstrated that customized PEG linkers improved the stability of these molecules and efficiently released the native antisense. Safety and efficacy will be determined in future preclinical studies.

In vitro and in vivo evaluation of PEGylated anti-Bcl2 siRNA conjugates in a Bcl-2 over-expressing lung cancer model (Abstract #4726)

This study describes the in vitro and in vivo efficacy of a PEGylated siRNA compound in a lung cancer model. The development of siRNA as therapeutics has been limited due to their inefficient delivery, poor stability and suboptimal pharmaceutical profile. Results showed that the PEGylated siRNA created using Enzon's proprietary Customized Releasable PEG Linker Technology had an improved pharmaceutical profile compared to the native siRNA, and also resulted in down-regulation of its targeted gene, Bcl-2, a gene often over-expressed in people with lung cancer.

About PEG-SN38

SN38 is the active metabolite of the widely used cancer drug irinotecan, marketed as Camptosar(R) in the U.S. Although unmodified SN38 is 1,000 times more potent than Camptosar, it has not been converted into a viable drug candidate because it is insoluble. Using Enzon's new PEGylation technology, the Company developed PEG-SN38 (EZN-2208), which results in a compound with excellent pharmaceutical properties as shown in animal models: increased solubility, higher exposure, and longer half-life than unmodified SN38. Preclinical data presented at the 18th annual EORTC-NCI-AACR (European Organization for Research and Treatment of Cancer-National Cancer Institute-American Association for Cancer Research) meeting showed that these features led to greater efficacy over Camptosar in breast, colorectal and pancreatic cancer models.

About PEGylation and Customized Linker Technology(TM)

One of Enzon's core capabilities has been in engineering improved versions of injectable therapeutics through the chemical attachment of polyethylene glycol or PEG. In some cases, PEGylation can render a compound therapeutically effective, where the unmodified form had only limited clinical utility. Currently, there are five marketed biologic products that utilize our proprietary PEG platform, two of which Enzon markets, Adagen(R) and Oncaspar(R), and three for which Enzon receives royalties, PEG-INTRON(R), Pegasys(R), and Macugen(R). Specific advantages of PEG may include: increased efficacy; reduced dosing frequency; reduced toxicity and immunogenicity; increased drug stability; and enhanced drug solubility.

Enzon's Customized Linker Technology utilizes linkers designed to release the native molecule at a controlled rate. The customized linkers expand the utility of the Company's existing PEGylation technology, and offer a choice of releasable or permanent linkages to match each drug's requirements. It improves the pharmacokinetic and pharmacodynamic profile of a drug. Through the customized attachment of PEG, that covers the spectrum of stable and customized releasable linkers, we can potentially overcome the pharmacologic limitations for a broad universe of molecules and generate compounds with substantially enhanced therapeutic value over their unmodified forms.

About Enzon

Enzon Pharmaceuticals, Inc. is a biopharmaceutical company dedicated to the development, manufacturing, commercialization of important medicines for patients with cancer and other life-threatening conditions. Enzon has a portfolio of four marketed products, Oncaspar(R), DepoCyt(R), Abelcet(R) and Adagen(R). The Company's drug development programs utilize several cutting-edge approaches, including its industry-leading PEGylation technology platform used to create product candidates with benefits such as reduced dosing frequency and less toxicity. Enzon's PEGylation technology was used to develop two of its products, Oncaspar and Adagen, and has created a royalty revenue stream from licensing partnerships for other products developed using the technology. Enzon also engages in contract manufacturing for several pharmaceutical companies to broaden the Company's revenue base. Further information about Enzon and this press release can be found on the Company's web site at www.enzon.com.

Forward Looking Statements

There are forward-looking statements contained herein, which can be identified by the use of forward-looking terminology such as the words "believes," "expects," "may," "will," "should", "potential," "anticipates," "plans" or "intends" and similar expressions. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results, events or developments to be materially different from the future results, events or developments indicated in such forward-looking statements. Such factors include, but are not limited to the timing, success and cost of clinical studies; the ability to obtain regulatory approval of products, market acceptance of, and continuing demand for, Enzon's products and the impact of competitive products and pricing. A more detailed discussion of these and other factors that could affect results is contained in our filings with the U.S. Securities and Exchange Commission, including our transition report on Form 10-K for the year ended December 31, 2006 and our quarterly reports on Form 10-Q. These factors should be considered carefully and readers are cautioned not to place undue reliance on such forward-looking statements. No assurance can be given that the future results covered by the forward-looking statements will be achieved. All information in this press release is as of the date of this press release and Enzon does not intend to update this information.

SOURCE: Enzon Pharmaceuticals, Inc.

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