Enzon Presents New Data on Its LNA Programs

Platform shows promise

BRIDGEWATER, N.J., Oct 20, 2008 (BUSINESS WIRE) -- Enzon Pharmaceuticals, Inc. (Nasdaq: ENZN) presented data from its LNA technology platform at the 4th Annual Meeting of Oligonucleotide Therapeutics Society (OTS) in Boston, Massachusetts.

"Our preclinical data reveals that our LNA-based Survivin antagonist safely down regulates the cancer target," said Jeffrey H. Buchalter, chairman and chief executive officer of Enzon. "We are also encouraged by the data demonstrating enhanced delivery through the attachment of our customized PEGylation to LNA-based oligonucleotides."

Enzon has selected two additional cancer targets, ErbB3 (HER3) and beta-catenin, for development of LNA-based antagonists. As part of a drug discovery program between Enzon Pharmaceuticals and Santaris Pharma, LNA oligonucleotides targeting human ErbB3 (HER3) and human beta-catenin were designed, synthesized and screened in order to identify potent RNA inhibitors as drug candidates for subsequent in vivo studies.

The Posters that were presented by Enzon Pharmaceuticals included:

A novel Locked Nucleic Acid (LNA) Oligonucleotide against Survivin, EZN-3042, inhibits Survivin expression and causes antitumor effects

The Company has identified an RNA antagonist that specifically inhibits Survivin expression. The antagonist is an oligonucleotide that uses Locked Nucleic Acid technology. The molecule, (EZN-3042), has shown, in vitro and in animal models, potency as well as plasma and tissue stability suitable for drug development. Survivin is a key protein that controls cancer growth by playing a significant role in cell division, as well as, inhibiting programming that controls cell death. In preclinical studies done in animals, the molecule (EZN-3042) inhibits Survivin expression, tumor growth and potentiates the antitumor activity of taxol, an approved cancer therapeutic. This was the first presentation in which Enzon presented Survivin. The initial preclinical data is further described by Enzon's partner Santaris Pharma in an article in Molecular Cancer Therapeutics, SPC3042: a proapoptotic survivin inhibitor.

Novel PEG-nanoparticles enhances delivery of RNA antagonist Oligonucleotides in tumor cells and in mice

The Company has identified a novel lipid formulation with polyethylene glycol (PEG) that enhanced cellular penetration of oligonuleotides in vitro and in vivo in animal models. Customized lipid-based PEG nanoparticles provide a promising approach for more efficient in vivo delivery of oligonucleotides including two types of RNA antagonists: Locked Nucleic Acid-based antisense molecules and siRNAs. Enhanced targeting and penetration of oligonucleotides into tumor cells could potentially improve the utility of oligonucleotide based therapy.

The Poster that was presented by Santaris Pharma included:

Identification of novel and potent RNA inhibitors against different cancer targets, based on Locked Nucleic Acid (LNA) technology

Based on the results from the in vitro screening using libraries of ErbB3 (HER3) and beta-catenin oligos, several new mRNA inhibitors with anti-cancer activities were identified. The ErbB3 (HER3) and beta-catenin inhibitors down regulate their respective targets at low nanomolar concentrations, inhibit proliferation and induce apoptosis. In addition, they show potent target down regulation in vivo in animal models.

About ErbB3 (HER3)

ErbB3, a member of the HER family is known to be over-expressed in breast, ovarian, and lung cancer, and ErbB3 (HER3) over-expression is correlated with a poor prognosis. The development of drugs that antagonize the function of ErbB3 (HER3) has been challenging due to the absence ofthekinase activity which is unlike other HER members. Therefore, specific targeting of ErbB3 (HER3) may require novel strategies such as antisense that down-modulates ErbB3 (HER3) receptor expression and disrupts this critical prosurvival pathway.

About beta-catenin

Beta-catenin is a transcription factor controlling multiple genes and isa key player incellular proliferation. However, these transcription factors are often difficult to target. The application of antisense compounds using the high-affinity high-stability Locked Nucleic Acid (LNA) format may provide highly potent and specific antagonists that inhibit the synthesis of beta-catenin.

About LNA(R) Technology

LNA Technology, is based on Locked Nucleic Acid, a proprietary synthetic analog of ribonucleic acid (RNA) which is fixed in the shape adopted by RNA in helical conformation. When incorporated into a short nucleic acid chain (both DNA and RNA are made up of longer chains of natural nucleic acids), the presence of LNA results in several therapeutic advantages. Because LNA resembles RNA but is more stable, LNA-containing drugs have both very high binding affinity for RNA and stability in plasma and tissue. Using the "antisense" principle to block the function of specific mRNAs within cells and tissues, such drugs have enhanced potency and specificity and may provide improved efficacy at lower doses than comparable drugs based on alternative chemistry. As a result, RNA antagonists comprised of LNA have been demonstrated to be 100 to 1,000 times more potent in vitro than conventional antisense compounds. In particular, LNA can be used to switch off the synthesis of harmful proteins, thereby potentially altering disease outcomes in cancer or other serious disorders.

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 annual report on Form 10-K for the period ended December 31, 2007. 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.

Enzon Pharmaceuticals, Inc.
Craig Tooman, 908-541-8777
EVP, Finance and
Chief Financial Officer