ZIOPHARM Oncology, Inc.

November 7, 2012

ZIOPHARM Oncology Presents Systemic, DNA/Cell Plasmid Therapy Showing Long-Term Persistence and Anti-Tumor Effects at EORTC-NCI-AACR Meeting

NEW YORK, Nov. 7, 2012 (GLOBE NEWSWIRE) -- ZIOPHARM Oncology, Inc. (Nasdaq:ZIOP), a drug development company employing small molecule and synthetic biology approaches to cancer therapy, announced today results from a preclinical study demonstrating the long-term persistence and anti-tumor effects of a new synthetic biology approach (DNA/cell plasmid) to controlled protein production *in vivo*. This embedded controlled bioreactor study was presented at the EORTC-NCI-AACR International Conference on Molecular Targets and Cancer Therapeutics, taking place November 6-9 in Dublin, Ireland, and was conducted jointly by ZIOPHARM and Intrexon Corporation, a synthetic biology company that utilizes its proprietary technologies to provide control over cellular function, ZIOPHARM's exclusive channel partner for the development of DNA therapeutics.

"These data demonstrate the potential of our disruptive technologies, including UltraVector®, RTS®, and our cell engineering capabilities," said Samuel Broder, M.D., Chairman of Intrexon's Therapeutic Opportunities Committee and former Director of the NCI (National Cancer Institute). "By using tightly controlled, purpose-built, cellular protein factories, we open up therapeutic windows for a broad array of proteins. This study demonstrates the long-term persistence of this approach, with sustained protein production and therapeutic anti-tumor efficacy drawing from only a single intramuscular administration of plasmid DNA."

Hagop Youssoufian, M.D., President of Research and Development and Chief Medical Officer of ZIOPHARM, said, "These data are very exciting, as they provide us with another systemic approach for the delivery of therapeutic proteins to a target cancer using engineered DNA transgenes. We have already seen the potential in the clinic of delivering these transgenes using dendritic cells and viral vectors. Each approach gives us a means of optimizing the timing, concentration and location of therapeutic proteins; ultimately allowing us to dislocate cancer's signaling networks with minimal interference to our natural systems. We look forward to further our study of therapeutic anti-cancer proteins delivered via this revolutionary technology."

For this study, a RheoSwitch®-regulated (RTS®) interferon alpha (IFNα) plasmid transgene was evaluated as a means of widening the therapeutic window of IFNα in a melanoma mouse model. DNA vectors for the controlled expression of murine or human IFNα were optimized using Intrexon's UltraVector® platform, then transfected into human fibrosarcoma cells or myoblasts, forming RTS-IFNα plasmids. These plasmids were subsequently electroporated into the skeletal muscle of normal or melanoma tumor-bearing mice, and then activated using an oral activator ligand (AL).

A single intramuscular electroporation of RTS-IFNα combined with daily oral activator ligand treatment led to significant tumor growth inhibition, comparable to chemotherapy or repeated bolus injection with recombinant mIFNα protein, but without overt toxicity, as assessed by body weight change and survival. Treatment with pRTS-IFNα resulted in sustained serum and tumor expression of mouse IFNα for approximately 4 months (study termination), as well as expression of the angiogenic biomarker IP-10, and activation of T cells (CD4 and CD8), NK cells, and dendritic cells.

About ZIOPHARM Oncology, Inc.:

ZIOPHARM Oncology is a biopharmaceutical company focused on the development and commercialization of new cancer therapies. The Company's clinical programs include:

Palifosfamide (ZIO-201) is a potent bi-functional DNA alkylating agent that has activity in multiple tumors by evading typical resistance pathways. Palifosfamide is in the same class as bendamustine, cyclophosphamide, and ifosfamide. Intravenous palifosfamide is currently being studied in a randomized, double-blinded, placebo-controlled Phase 3 trial (PICASSO 3) for the treatment of first-line metastatic soft tissue sarcoma and is also in a pivotal Phase 3 trial (MATISSE) for first-line metastatic small cell lung cancer. Additionally, the Company is developing an oral capsule form of palifosfamide.

Ad-RTS IL-12 is currently being tested in a Phase 2 study. Ad-RTS IL-12 uses synthetic biology to enable controlled, local delivery of therapeutic interleukin-12 (IL-12), a protein important for an immune response to cancer. ZIOPHARM's DNA synthetic biology platform is being developed in partnership with Intrexon Corporation and employs an inducible gene-delivery system that enables controlled, local delivery of genes that produce therapeutic proteins to treat cancer. This is achieved by placing IL-12 under the control of Intrexon's proprietary biological "switch" (the RheoSwitch Therapeutic System®, RTS®) to turn on/off the therapeutic protein expression at the tumor site.

Indibulin (ZIO-301) is a novel, tubulin binding agent that is expected to have several potential benefits, including oral dosing, application in multi-drug resistant tumors, no neuropathy and a tolerable toxicity profile. It is currently being studied in a Phase 1/2 trial in metastatic breast cancer.

Darinaparsin (ZIO-101) is a novel mitochondrial- and hedgehog-targeted agent (organic arsenic) currently in ongoing studies with Solasia Pharma K.K.

ZIOPHARM's operations are located in Boston, MA, and New York City. Further information about ZIOPHARM may be found at www.ziopharm.com.

Forward-Looking Safe Harbor Statement:

This press release contains certain forward-looking information about ZIOPHARM Oncology that is intended to be covered by the safe harbor for "forward-looking statements" provided by the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts. Words such as "expect(s)," "feel(s)," "believe(s)," "will," "may," "anticipate(s)" and similar expressions are intended to identify forward-looking statements. These statements include, but are not limited to, statements regarding our ability to successfully develop and commercialize our therapeutic products; our ability to expand our long-term business opportunities; financial projections and estimates and their underlying assumptions; and future performance. All of such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond the control of the Company, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, but are not limited to: whether Palifosfamide, Ad-RTS IL-12, Darinaparsin, Indibulin, or any of our other therapeutic products will advance further in the clinical trials process and whether and when, if at all, they will receive final approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies and for which indications; whether Palifosfamide, Ad-RTS IL-12, Darinaparsin, Indibulin, and our other therapeutic products will be successfully marketed if approved; whether any of our other DNA-based biotherapeutics discovery and development efforts will be successful; our ability to achieve the results contemplated by our collaboration agreements; the strength and enforceability of our intellectual property rights; competition from pharmaceutical and biotechnology companies; the development of and our ability to take advantage of the market for DNA-based biotherapeutics; our ability to raise additional capital to fund our operations on terms acceptable to us; general economic conditions; and the other risk factors contained in our periodic and interim SEC reports filed from time to time with the Securities and Exchange Commission, including but not limited to our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, and our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2012. Readers are cautioned not to place undue reliance on these forward-looking statements that speak only as of the date hereof, and we do not undertake any obligation to revise and disseminate forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of or non-occurrence of any events.

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