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ZIOPHARM Announces Expansion of Ground-Breaking Synthetic Immuno-Oncology Programs With Intrexon and Clinical Program Update

- *Expansion of synthetic immuno-oncology programs to include chimeric antigen receptor T-cell (CAR-T) therapy*
- *Increased applications of RheoSwitch® platform and its unique capabilities into targeted cellular oncology products*
- *Phase I trial utilizing Ad-RTS-IL-12 in Glioblastoma Multiforme expected to launch in 2H2014*

BOSTON and GERMANTOWN, Md., July 22, 2014 (GLOBE NEWSWIRE) -- ZIOPHARM Oncology, Inc. ("ZIOPHARM") (Nasdaq: ZIOP), a biopharmaceutical company focused on the development and commercialization of new cancer therapies, today announced the expansion of synthetic immuno-oncology programs in conjunction with Intrexon Corporation (NYSE:XON) to include chimeric antigen receptor T-cell (CAR-T) therapy. Additionally the Company has provided an update on its development efforts with the proprietary RheoSwitch Therapeutic System® (RTS®) platform, an inducible regulator for expression of therapeutic molecules through administration of an oral activator ligand, as well as its clinical program with Ad-RTS-IL-12, a novel DNA-based therapeutic candidate for the controlled expression of IL-12.

CAR-T cells represent an emerging, high value immunological therapy that can target and destroy cancer cells displaying "personalized" fingerprints, yet current approaches feature challenges associated with toxicity, off-target effects, and uneconomical manufacturing. Intrexon possesses the integrated technology platforms, molecular engineering, systems biology, and cell engineering capabilities required to overcome these challenges and fully realize the potential of CAR-T cell therapies. Most significantly, utilization of the RTS® platform will facilitate exquisite regulation of one or more bioeffectors in CAR-T cells enabling physicians to control systemic effects of cell therapies with an appropriate dosing regimen of the oral activator ligand (veledimex), and eventually bring about improved safety and efficacy of these and related therapeutic strategies. Further preclinical work is underway in this promising area of study, and ZIOPHARM and Intrexon expect to provide a progress update in the second half of 2014.

Samuel Broder, M.D., EVP of Scientific and Public Affairs at Intrexon, said, "As a leader in the second generation of biotechnology, Intrexon is applying industrial engineering principles to synthetic immunology to potentiate important biotechnology platforms enabling end-to-end solutions for complex biologic challenges. In particular, the utilization of our proprietary RheoSwitch® platform may be especially advantageous in CAR-T treatments."

To date, the RheoSwitch® platform has been shown to function as a regulatable switch in an array of cell types for multiple proteins, and RTS® expansion into CAR-T therapy is further demonstration of the breadth of Intrexon's single and multi-genic expression and control technologies. According to data from ClinicalTrials.gov, more than 1,000 clinical trials utilizing gene therapy are currently underway, with the majority in either Phase I or Phase II. Intrexon's proprietary switch system is uniquely positioned as the first clinically-evaluated gene switch with *in vivo* data showing the ability to control gene expression with a broad dynamic range. The RTS® platform provides a mechanism for titrating therapeutic effects on a patient-specific and predictable basis, as well as a safety switch to rapidly turn off gene-expression. The ability to administer or withdraw the veledimex pill to sustain continued treatment cycles is a key benefit exclusive to RTS® technology.

"We are excited by the prospects of applying our advanced synthetic immuno-oncology toolkit towards targeted immunotherapies like CAR-T," said Jonathan Lewis, M.D., Ph.D., CEO of ZIOPHARM. "We also look forward to expanding RTS® applications in novel therapeutic strategies for cancer where the ability to control gene expression is essential."

With respect to the Ad-RTS-IL-12 clinical programs, ZIOPHARM continues to conduct Phase II studies in melanoma and breast cancer using Ad-RTS-IL-12 as a monotherapy. Additionally, the Company is evaluating future trials with IL-12 in potential combination therapies with other immune-targeting agents in various cancers including melanoma and breast. ZIOPHARM also plans to initiate a Phase I trial to evaluate Ad-RTS-IL-12 as a single agent in the treatment of patients with Glioblastoma Multiforme in the second half of 2014.

"The development of potent yet tightly controlled cancer depleting therapies such as CAR-T and other targeted cellular products through the molecular rewiring of immunologic gene programs adds to the foundation of our multifaceted strategy in

synthetic immuno-oncology," remarked Gregory Frost, Ph.D., SVP of Intrexon's Health Sector.

About ZIOPHARM Oncology, Inc.

ZIOPHARM Oncology is a Boston, Massachusetts-based biotechnology company employing novel gene expression and control technology to deliver DNA for the treatment of cancer. ZIOPHARM's technology platform employs Intrexon Corporation's RheoSwitch Therapeutic System® technology to turn on and off, and precisely modulate, gene expression at the cancer site in order to improve the therapeutic index. Ad-RTS-IL-12 is a novel DNA-based therapeutic for the controlled expression of interleukin 12 (IL-12), an important protein for stimulating an anti-cancer T cell immune response. This technology is currently being evaluated in Phase II clinical studies of the immune system cytokine interleukin-12 for the treatment of breast cancer and advanced melanoma.

About Intrexon Corporation

Intrexon Corporation (NYSE:XON) is a leader in synthetic biology focused on collaborating with companies in Health, Food, Energy, Environment, and Consumer Sectors to create biologically-based products that improve the quality of life and the health of the planet. Through the company's proprietary UltraVector® platform and suite of technologies, Intrexon provides its partners with industrial-scale design and development of complex biological systems. The UltraVector® platform delivers unprecedented control over the quality, function, and performance of living cells. We call our synthetic biology approach and integrated technologies **Better DNA®**, and we invite you to discover more at www.dna.com.

Trademarks

Intrexon, UltraVector, RheoSwitch Therapeutic System, RTS, RheoSwitch, and Better DNA are trademarks of Intrexon and/or its affiliates. Other names may be trademarks of their respective owners.

Forward-Looking Safe Harbor Statement

This press release contains certain forward-looking information about ZIOPHARM Oncology, Inc. 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 Ad-RTS-IL-12, 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 Ad-RTS-IL-12, and our other therapeutic products will be successfully marketed if approved; whether any of our other therapeutic product 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 other pharmaceutical and biotechnology companies; the development of, and our ability to take advantage of, the market for our therapeutic products; 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, 2013 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014. 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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