



November 9, 2016

## **ZiOPHARM Reports Third Quarter 2016 Financial Results and Provides Update on Recent Activities**

### **Company to Host Conference Call on Thursday, November 17, 2016 at 8:00 am ET to Discuss Updated Data from Phase 1 Study of Ad-RTS-hIL-12 + Veledimex in Brain Cancer Presented at SNO 2016 Annual Meeting**

BOSTON, Nov. 09, 2016 (GLOBE NEWSWIRE) -- ZiOPHARM Oncology, Inc. (Nasdaq:ZiOP), a biopharmaceutical company focused on new immunotherapies, today announced financial results for the third quarter ended September 30, 2016, and provided an update on the Company's recent activities.

"ZiOPHARM continues to advance a broad portfolio of immuno-oncology programs, including our gene therapy platform, and our chimeric antigen receptor, T-cell receptor, and natural killer adoptive cell-based therapies," said Laurence Cooper, M.D., Ph.D., Chief Executive Officer of ZiOPHARM Oncology. "These programs ensure that ZiOPHARM participates across the spectrum of cell-based therapies, with technologies spanning non-viral and viral T-cell gene transfer, cytokines, and controlled expression of biologics after infusion. What is particularly exciting about our progress is that most of these technologies will be in clinical testing in 2017, moving us toward realization of these transformative ideas including individualized therapies targeting neoantigens and continued shortening of cell manufacturing to infuse T cells after gene transfer. These ideas will allow us to leapfrog current technologies and address some of the most important challenges in cancer treatment today."

Francois Lebel, M.D., Chief Medical Officer of ZiOPHARM Oncology added: "In the near-term, we look forward to presenting updated results at the Society for Neuro-Oncology Annual Meeting next week from our Phase 1, multi-center study of Ad-RTS-hIL-12 + veledimex in patients with brain cancer. To date, intracranial administration of Ad-RTS-hIL-12 + veledimex has demonstrated a favorable safety profile, with a survival benefit compared to historical control that provides a strong rationale for moving to a phase 2/3 trial."

### **Corporate and Program Updates**

#### Gene Therapies

Ad-RTS-hIL-12 + veledimex is a gene therapy candidate for the controlled expression of interleukin 12 (IL-12), a critical protein for stimulating an anti-cancer immune response, using the RheoSwitch Therapeutic System<sup>®</sup> (RTS<sup>®</sup>) gene switch. ZiOPHARM is currently enrolling patients in two studies of Ad-RTS-hIL-12 + veledimex: a multi-center Phase 1 study in patients with recurrent or progressive glioblastoma multiforme (GBM), an aggressive form of brain cancer, and a Phase 1b/2 study for the treatment of patients with locally advanced or metastatic breast cancer following standard chemotherapy.

- 1 **Updated Clinical Data from Phase 1 Study of Ad-RTS-hIL-12 + Veledimex in High-Grade Gliomas to be presented at Society of Neuro-Oncology (SNO) Annual Meeting.** ZiOPHARM will present updated data from its Phase 1, multi-center study of Ad-RTS-hIL-12 + veledimex in patients with recurrent high-grade gliomas at the upcoming 21<sup>st</sup> Annual SNO Scientific Meeting being held November 17-20, 2016 in Scottsdale, Arizona. Subjects with relapsed high-grade gliomas undergoing re-resection were intra-tumorally injected once with Ad-RTS-hIL-12 followed by oral doses of veledimex to activate production (transcription) of IL-12. The Company previously showed that the measurement of veledimex in serum and in the brain tumor correlates with production of IL-12 and activation of IFN-gamma, demonstrating not only that this oral drug can be used to start and stop cytokine production, but the generation of IL-12 is proportional to the dosing of veledimex. These data will be updated for recipients taking veledimex at 20 mg/day, 30 mg/day and 40 mg/day. The Company previously reported 6-month overall survival in the study at 100%. Twelve month survival data will be reported at SNO.

The presentation, entitled "Phase 1 study of intra-tumoral viral delivery of Ad-RTS-hIL-12 + oral veledimex is well tolerated and suggests survival benefit in recurrent high grade glioma" will be presented on Friday, November 18, 2016. The Company will host a conference call to discuss these data on Thursday, November 17, 2016 at 8:00 am ET.

- | **Upcoming Pre-Clinical Data of Ad-RTS-mIL-12 + Veledimex as Therapy for Pediatric Glioma to be presented at Society of Neuro-Oncology Annual Meeting.** ZIOPHARM will present data on the ability of the RTS<sup>®</sup> gene switch to control mouse IL-12 production to treat glioma in the pontine region. These data are based on a single injection of Ad-RTS-mIL-12 and oral administration of veledimex and serve as a basis to advance our viral therapy in 2017 for the investigational treatment of pediatric brain tumors, including diffuse intrinsic pontine glioma.
- | **Presented Data Demonstrating Activation of Anti-Tumor Immune Response Using Ad-RTS-hIL-12 in Patients with Advanced Breast Cancer.** In October, ZIOPHARM announced the presentation of preliminary data from the Company's Phase 1b/2 study of Ad-RTS-hIL-12 + veledimex following standard chemotherapy for the treatment of patients with locally advanced or metastatic breast cancer at the European Society for Medical Oncology (ESMO) 2016 Congress in Copenhagen, Denmark. Results show that Ad-RTS-hIL-12 + seven days of veledimex consistently elicited production of IL-12 which in turn produced IFN-gamma. It was notable that the intra-tumoral influx of CD8<sup>+</sup> T cells and IFN-gamma were present six weeks after completion of veledimex consistent with the ability of Ad-RTS-hIL-12 to favorably impact the tumor environment over the long term. In two patients, Ad-RTS-hIL-12 + veledimex provided a meaningful chemotherapy holiday, with durable responses for 18 and 35 weeks.

### Adoptive Cell Therapies

ZIOPHARM is developing various immuno-oncology programs, including chimeric antigen receptor T cell (CAR-T), T-cell receptor (TCR), T cell (TCR-T), and natural killer (NK) adoptive cell-based therapies. These programs are being advanced in collaboration with Intrexon Corporation (NYSE: XON), MD Anderson Cancer Center, and Merck Serono (CAR-T only).

- | **Results from Four Studies of Adoptive Cell-based Therapeutic Programs to be Presented at the 2016 American Society of Hematology (ASH) Annual Meeting.** In November, ZIOPHARM [announced](#) that four abstracts highlighting data from the Company's adoptive cell-based therapeutic programs have been accepted for presentation at the 58<sup>th</sup> American Society of Hematology (ASH) Annual Meeting and Exposition. The meeting will be held December 3-6, 2016 in San Diego. The research, conducted at the MD Anderson Cancer Center and Intrexon, demonstrates, among other results, that T cells can be quickly produced with the *Sleeping Beauty* system and that this non-viral approach to gene therapy can be harnessed to generate CAR and TCR expressing effector cells.
- | **Announced Plans for Phase I Clinical Trial with CD33 CAR-T Cell Therapy; Supporting Preclinical Results to be Presented at ASH 58<sup>th</sup> Annual Meeting & Exposition.** In July, following a review by the Recombinant DNA Advisory Committee, ZIOPHARM announced plans for a Phase I adoptive cellular therapy clinical trial utilizing autologous T cells transduced with lentivirus to express a CD33-specific CAR in patients with relapsed or refractory acute myeloid leukemia (AML). Preclinical studies, including *in vitro* data, demonstrated that lentiviral-transduced CAR-T cells targeting CD33 exhibited specific killing activity for CD33<sup>+</sup> AML cells and a proof-of-concept study utilizing an *in vivo* mouse model for AML, showed that these CAR-T cells were able to eliminate disease and significantly enhance survival as compared to control groups. These positive preclinical results indicate biological activity and are suggestive of potential therapeutic effect for the treatment of AML. The Company recently announced that associated data will be presented at the 58<sup>th</sup> ASH Annual Meeting.
- | **Announced Publication of Data from First-In-Human Trials using Non-Viral *Sleeping Beauty* System to Express CD19-Specific CAR in T cells in Journal of Clinical Investigation.** In August, ZIOPHARM announced the publication of data highlighting the benefits of using the non-viral *Sleeping Beauty* (SB) system to genetically modify T cells to express a CAR for use against CD19-expressing leukemias and lymphomas. The article, titled "Phase I trials using *Sleeping Beauty* to generate CD19-specific CAR T cells," was published in the *Journal of Clinical Investigation* (doi:10.1172/JCI86721), and is available online [here](#).

The paper describes results for 26 patients with multiply relapsed B-lineage acute lymphoblastic leukemia (ALL, n=17) or B-cell non-Hodgkin lymphoma, (NHL, n=9) who were enrolled in two investigator-initiated clinical trials at the University of Texas MD Anderson Cancer Center infused with *Sleeping Beauty*-modified T cells after autologous (n=7) or allogeneic (n=19) hematopoietic stem-cell transplantation (HSCT). Although the primary objective of these trials was not to establish efficacy, the recipients' outcomes are encouraging, with apparent doubling of survivals compared to historical controls which is attributed to the persistence of the infused T cells. Additionally, by infusing a CD19-specific CAR-T to target minimal residual disease after autologous and allogeneic HSCT, the approach may improve tolerability by avoiding cytokine release syndrome.

### Milestones

- | Intra-tumoral IL-12 RheoSwitch<sup>®</sup> programs:
  - | Clinical data from Phase 1 of Ad-RTS-hIL-12 + veledimex for GBM to be presented at SNO 2016
  - | Initiate Phase 2/3 clinical trial for GBM in 2017



(NYSE:XON) and the MD Anderson Cancer Center, include chimeric antigen receptor T cell (CAR-T) and other adoptive cell-based approaches that use non-viral gene transfer methods for broad scalability. The Company is advancing programs in multiple stages of development together with Intrexon Corporation's RheoSwitch Therapeutic System® technology, a switch to turn on and off, and precisely modulate, gene expression in order to improve therapeutic index. The Company's pipeline includes a number of cell-based therapeutics in both clinical and preclinical testing which are focused on hematologic and solid tumor malignancies.

#### 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, and in some cases can be identified by terms such as "may," "will," "could," "expects," "plans," "anticipates," and "believes." These statements include, but are not limited to, statements regarding the Company's plans and expectations regarding its securities offerings, fundraising activities and financial strategy, the progress, timing and results of preclinical and clinical trials involving the Company's drug candidates, and the progress of the Company's research and development programs. 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 by, the forward-looking statements. These risks and uncertainties include, but are not limited to: our ability to finance our operations and business initiatives and obtain funding for such activities, whether chimeric antigen receptor T cell (CAR T) approaches, Ad-RTS-hIL-12, TCR and NK cell-based therapies, or any of our other therapeutic candidates will advance further in the pre-clinical or 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 chimeric antigen receptor T cell (CAR T) approaches, Ad-RTS-hIL-12, TCR and NK cell-based therapies, and our other therapeutic products will be successfully marketed if approved; the strength and enforceability of our intellectual property rights; competition from other pharmaceutical and biotechnology companies; 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, 2015, and our Quarterly Report for the quarter ended September 30, 2016. 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.

#### Trademarks

RheoSwitch Therapeutic System® and RTS® are registered trademarks of Intrexon Corporation.

**ZIOPHARM Oncology, Inc.**  
**Statements of Operations**  
(in thousands except share and per share data)  
**(unaudited)**

	<b>Three Months Ended</b>	
	<b>September 30,</b>	
	<b>2016</b>	<b>2015</b>
Collaboration revenue	\$ 1,598	\$ 1,869
Operating expenses:		
Research and development, including cost of contracts	8,975	16,970
General and administrative	3,537	3,065
Total operating expenses	<u>12,512</u>	<u>20,035</u>
Loss from operations	(10,914)	(18,166)
Other income (expense), net	39	(4)
Change in derivative liabilities	21	-
Net loss	<u>(10,854)</u>	<u>(18,170)</u>
Preferred stock dividends	(3,591)	-
Net loss applicable to common stockholders	<u>\$ (14,445)</u>	<u>\$ (18,170)</u>

Basic and diluted net loss per share	<u>\$ (0.11)</u>	<u>\$ (0.14)</u>
Weighted average common shares outstanding used to compute basic and diluted net loss per share	<u>130,496,035</u>	<u>129,732,356</u>

**ZIOPHARM Oncology, Inc.**  
**Balance Sheet Data**  
**(in thousands)**  
**(unaudited)**

	<u>September 30,</u> <u>2016</u>	<u>December 31,</u> <u>2015</u>
Cash and cash equivalents	94,683	140,717
Working capital	99,933	134,398
Total assets	117,122	153,724
Total stockholders' equity (deficit)	(64,416)	87,371

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