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OXiGENE Reports Positive Results in Phase 2 Study of ZYBRESTAT™ in Platinum-Resistant Ovarian Cancer

Meets Pre-specified Primary Efficacy Endpoint in Stage 1 of Simon Two-Stage Study

WALTHAM, MA-- December 31, 2007 -- OXiGENE, Inc. (NASDAQ: OXGN, XSSE: OXGN), a clinical-stage, biopharmaceutical company developing novel therapeutics to treat cancer and eye diseases, announced today that its lead product candidate, ZYBRESTAT™ (combretastatin-A4 phosphate / CA4P), has achieved the pre-specified primary efficacy endpoint for Stage 1 of an ongoing Phase 2 ovarian cancer clinical trial. The clinical trial utilizes an open-label, Simon two-stage design to evaluate the combination of ZYBRESTAT, carboplatin and paclitaxel in patients with advanced, platinum-resistant ovarian cancer, a refractory form of ovarian cancer for which therapeutic options are limited. Having met the Stage 1 primary efficacy endpoint, the clinical trial will proceed to its second stage, in which an additional 25 patients will be enrolled.

"These results add to the growing body of data indicating that ZYBRESTAT has clinical activity against a wide variety of solid tumors, particularly when administered in combination with conventional chemotherapeutic agents," commented Patricia Walicke, M.D., Ph.D., Chief Medical Officer of OXiGENE. "They also corroborate previously-reported Phase 1b data in ovarian cancer and provide strong evidence of an efficacy signal in ovarian cancer."

"The encouraging initial results with the ZYBRESTAT-chemotherapy combination in this refractory patient population support further testing and development of the drug for ovarian carcinoma and other solid tumors," commented Dr. Gordon Rustin, of Cancer Research UK, the principal investigator on the study and an internationally recognized expert in the management of gynecological malignancies.

In the ongoing study, in order to advance to the second stage of the trial, a minimum of three out of the first 18 patients treated with the ZYBRESTAT-chemotherapy combination needed to achieve a partial response (PR) or better. Response was determined by the investigators based upon tumor imaging (RECIST) and/or ovarian cancer response biomarker (CA-125) criteria. In addition to the three patients with confirmed partial responses, preliminary results communicated to OXiGENE by Dr. Rustin indicated that stable disease was observed in seven of the first 11 evaluable subjects in the clinical trial. The combination regimen of ZYBRESTAT, carboplatin and paclitaxel appeared to be well-tolerated, with no observations of colon perforations that had been reported previously with anti-VEGF therapy in this patient population. OXiGENE anticipates that updated results from Stage 1 of the Phase 2 trial will be reported at an upcoming scientific forum.

(more)

In November 2005, OXiGENE announced results from the Phase 1b portion of the clinical trial presented by Dr. Rustin at the AACR/NCI/EORTC International Conference on Molecular Targets and Cancer Therapeutics. Of 15 ovarian cancer patients treated with combinations of ZYBRESTAT and chemotherapy (carboplatin and/or paclitaxel), 10 patients achieved partial responses (per RECIST or CA-125 criteria). Only three of these patients, however, had platinum-resistant disease, which is generally more refractory to all treatments.

About ZYBRESTAT (combretastatin A4 phosphate / CA4P)

ZYBRESTAT™ is currently being evaluated in a pivotal registration study in anaplastic thyroid cancer (ATC) under a Special Protocol Assessment agreement with the U.S. Food and Drug Administration (FDA). OXiGENE believes that ZYBRESTAT is poised to become the first therapeutic product in a novel class of small-molecule drug candidates called vascular disrupting agents (VDAs). Through interaction with vascular endothelial cell cytoskeletal proteins, ZYBRESTAT selectively targets and collapses tumor vasculature, thereby depriving the tumor of oxygen and causing death of tumor cells. In clinical studies in solid tumors, ZYBRESTAT has demonstrated potent and selective activity against tumor vasculature, as well as clinical activity against ATC, ovarian cancer, and various other solid tumors. In clinical studies in patients with forms of macular degeneration, intravenously-administered ZYBRESTAT has demonstrated clinical activity, and the Company is working to develop a convenient and patient-friendly topical formulation of ZYBRESTAT for ophthalmological indications.

About OXiGENE

OXiGENE is a clinical-stage biopharmaceutical company developing novel therapeutics to treat cancer and eye diseases. The company's major focus is developing vascular disrupting agents (VDAs) that selectively disrupt abnormal blood vessels associated with solid tumor progression and visual impairment. OXiGENE is dedicated to leveraging its intellectual property and therapeutic development expertise to bring life-extending and -enhancing medicines to patients.

Safe Harbor Statement

This news release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Any or all of the forward-looking statements in this press release may turn out to be wrong. Forward-looking statements can be affected by inaccurate assumptions OXiGENE might make or by known or unknown risks and uncertainties, including, but not limited to, the timing and results of Stage 2 of the Phase 2 clinical trial of ZYBRESTAT in ovarian cancer. Additional information concerning factors that could cause actual results to materially differ from those in the forward-looking statements is contained in OXiGENE's reports to the Securities and Exchange Commission, including OXiGENE's reports on Form 10-K, 10-Q and 8-K. However, OXiGENE undertakes no obligation to publicly update forward-looking statements, whether because of new information, future events or otherwise. Please refer to our Annual Report on Form 10-K for the fiscal year ended December 31, 2006.

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