OXiGENE's Vascular Disrupting Agents Paired with Anti-Angiogenic Compound, Avastin, Yield Significant Increases in Anti-Tumor Activity

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Preclinical Research Shows Definitive Biological Activity when CA4P or OXi4503 are Combined with Avastin

Principal Investigator Indicates that the Drug Combination Warrants Further Investigation as a Relevant Cancer Treatment

At the AACR/NCI/EORTC International Conference on Molecular Targets and Cancer Therapeutics--OXiGENE, Inc. (NASDAQ: OXGN) (XSSE: OXGN), a leading developer of biopharmaceutical compounds to treat cancer and certain ophthalmologic diseases, today announced that new preclinical data for its vascular disrupting agents, Combretastatin A4P (CA4P) and OXi4503, were presented at the AACR/NCI/EORTC international cancer meeting in Philadelphia, PA. The research entitled, Dual Targeting of the Tumor Vasculature: Combining Avastin with CA4P or OXi4503, were presented by Dietmar Siemann, Ph.D., from the Department of Radiation Oncology, Shands Cancer Center, University of Florida, provided further validation of the therapeutic benefit in cancer of combining vascular disrupting agents and anti-angiogenic drugs. The data show that the combination of CA4P or OXi4503 with the anti-angiogenic drug, Avastin® (Bevacizumab), could offer a powerful and highly targeted treatment strategy for fighting solid tumors.

Professor Siemann, commenting on the presentation of his data stated, "The delay of tumor growth observed in this preclinical model support the rationale of combining vascular disrupting agents (VDAs) with anti-angiogenic compounds as a clinical treatment pathway in solid tumors. VDAs are highly successful in targeting and destroying the vasculature associated with the most difficult to reach, central regions of a tumor, while anti-angiogenics successfully prevent the growth of tumor neovasculature. We believe that the data indicate that this is a potent and viable treatment combination."

Professor Siemann’s research examined the efficacy of combining the anti-angiogenic agent Avastin, with either CA4P or OXi4503 in the treatment of a human renal cell carcinoma model (Caki-1). In the experimental model, tumors were allowed to reach the size of approximately 200 mm3. Tumor response was measured by the length of time for treated tumors grow to five times greater than the starting size. The animals were randomly assigned to control or treated groups, where the treated groups received single agent therapy consisting of one of the three compounds, or CA4P plus Avastin or OXi4503 plus Avastin.

The results showed that treatment with Avastin, CA4P or OXi4503 resulted in significant tumor growth delays of 8 days, 6 days and 18 days, respectively. The results showed that both CA4P and OXi4503 were effective at causing extensive vasculature damage and tumor cell death in the central regions of solid tumors. OXi4503 was also effective at reducing the peripheral rim of tumor cells, which can lead to tumor regrowth. However, when CA4P or OXi4503 were administered in combination with Avastin, statistically significant, enhanced anti-tumor effects were observed. The combination of CA4P plus Avastin led to a growth delay of 13 days, while Avastin plus OXi4503 resulted in a growth delay of 27 days.

“There is an ever-expanding abundance of preclinical evidence that supports the enhanced anti-tumor effects observed when vascular disrupting agents are combined with other therapies including chemotherapy, radiotherapy and now anti-angiogenic therapy,” commented David Chaplin, Ph.D., Chief Scientific Officer and Head of Research for OXiGENE. “We are encouraged by the effects observed by this combination therapy targeted not only at new vessel growth, but also in the already established vessel network. We believe that this is a treatment regimen that could have clinical potential.”

Dietmar W. Siemann, Ph.D., is a leading researcher in the areas of radiotherapy, anti-angiogenesis and vascular disrupting therapies. He is the John P. Cofrin Professor for Research in Radiation Oncology at the University of Florida College of Medicine in Gainesville. Dr. Siemann is a professor in the school's Department of Pharmacology and Therapeutics. He has authored more than 150 scientific papers and is the recipient of numerous scientific awards, including the Research Award of the Radiation Research Society in Oak Brook, Illinois (1990). Dr. Siemann currently serves as the Chairman of OXiGENE's Scientific Advisory Board and is the former Chairman of the National Cancer Institute's Radiation Study Section (1996-1998). At the University of Florida College of Medicine, Dr. Siemann’s research focuses on the effects of the tumor microenvironment on the response to anticancer therapies. Dr. Siemann received his BS in Physics from the University of Manitoba and his Ph.D. in Medical Biophysics from the University of Toronto. He completed post-doctoral work in radiobiology at the University of Rochester (NY).

About Combretastatin A4P (CA4P)

CA4P leads a novel class of small molecule drug candidates called vascular disrupting agents (VDAs). CA4P works via two potentially
synergistic processes that selectively target pericyte-depleted neovessels, which lack ensheathment from smooth muscle support cells. CA4P is a potent and reversible tubulin depolymerizing agent that causes newly formed endothelial cells that line blood vessels to change shape, round up and detach from the vessel wall. Recent preclinical research has also shown that CA4P disrupts the molecular engagement of VE-cadherin, a junction protein important for endothelial cell survival and function, and inhibits the associated (beta)-catenin/AKT signaling pathway, leading to rapid vascular collapse and necrosis. These complementary mechanisms block the flow of blood to a tumor and deprive it of oxygen and nutrients essential to its survival. Similarly, in eye diseases that are characterized by abnormal blood vessel growth, CA4P has been shown in preclinical studies to suppress development and induce regression of these unnecessary blood vessels.

CA4P is currently being studied in eight clinical trials in oncology, including anaplastic thyroid, lung, head and neck, prostate, colorectal, ovarian, cervical cancers and other imageable tumor types. These clinical trials involve the use of CA4P in both single-agent and combination therapies. It is also currently being studied in a Phase II clinical trial in myopic macular degeneration.

About OXi4503

OXiGENE believes that OXi4503 is the first in a new class of compounds known as ortho-quinone prodrugs (OQPs), which display a novel cytotoxic effect in addition to their proven vascular targeting capabilities mediated by their action on the tubulin cytoskeleton. Unlike anti-angiogenesis agents that focus on preventing new tumor blood vessels from forming, OQPs appear to attack existing blood vessel structures in the central regions of solid tumors and also appear to have a cytotoxic effect that could enable destruction of the outside rim of cells residing next to, and dependent on, normal tissue blood vessels. OXi4503 is currently in Phase I clinical trials for the treatment of advanced cancers.

About OXiGENE, Inc.

OXiGENE is an emerging pharmaceutical company developing novel small-molecule therapeutics to treat cancer and eye diseases. The Company's major focus is the clinical advancement of drug candidates that selectively disrupt abnormal blood vessels associated with solid tumor progression and visual impairment. OXiGENE is dedicated to leveraging its intellectual property position and therapeutic development expertise to bring life saving 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, including statements regarding the therapeutic efficacy and future success of CA4P and OXi4503 either in single agent therapy or in combined therapy with Avastin or other compounds or therapies in treating cancer; the potential of CA4P and/or OXi4503 to inhibit tumor growth either as a single agent or in combination therapy; and, the capabilities of CA4P and/or OXi4503 to cause significant anti-tumor effects as a single-agent and in combination with other therapies. Forward-looking statements can be affected by inaccurate assumptions OXiGENE might make or by known or unknown risks and uncertainties. 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 Form 10-Q, 8-K and 10-K reports. 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, 2004 for a description of these risks.

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