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OXiGENE Presents Encouraging Preclinical Data on ZYBRESTAT Ophthalmology Program

SOUTH SAN FRANCISCO, Calif., Jun 22, 2010 -- OXiGENE, Inc. (Nasdaq:OXGN), a clinical-stage, biopharmaceutical company developing novel therapeutics to treat cancer and eye diseases, announced today that the company presented an update on its ZYBRESTAT ophthalmology program, including encouraging preclinical data showing that the company's topical formulation achieved target retina/choroid concentrations with minimal systemic exposure. OXiGENE has two topical formulations of ZYBRESTAT in development – an eye drop and a minitab – both of which have demonstrated attractive pharmacokinetic and safety properties and efficacy in destroying abnormal vasculature in a rat choroidal melanoma model. The company believes that a topical formulation could be ready for clinical development in early 2011.

The data were presented at Glaucoma and Retinopathies 2010 conference by Dai Chaplin, Ph.D., head of research and development and chief scientific officer at OXiGENE.

"We are pleased with the outcome of preclinical studies with our topical formulations and believe that ZYBRESTAT has significant potential as a safe, effective, potent topical product that can improve upon injectable anti-angiogenic agents which are the mainstay of treatment for conditions such as age-related macular degeneration, but which may have limited efficacy and inconvenient means of delivery," said Dr. Chaplin. "We believe that our ZYBRESTAT ophthalmology program is achieving critical mass in demonstrating significant therapeutic and commercial potential. We look forward to presenting our data package to companies with strong ophthalmology franchises with the goal of partnering this promising program."

OXiGENE has previously reported positive results from proof-of-concept Phase 2 studies using an intravenous formulation showing that ZYBRESTAT achieved the primary endpoint of stable disease in patients with myopic macular degeneration (MMD). The ongoing FAVOR (fosbretabulin against vasculopathy of the retina/choroid) is a 20-patient, randomized, controlled, double-masked single-dose study of intravenous-route ZYBRESTAT in patients with polypoidal choroidal vasculopathy or PCV, a form of choroidal neovascularization that can serve as a model disease for macular degeneration. Data from the FAVOR study is intended to facilitate dose selection decisions in subsequent studies with topical-route ZYBRESTAT.

Dr. Chaplin added: "We believe PCV represents an attractive development pathway, as anti-angiogenic drugs are not approved for this indication and have not been reported to have strong activity. Because the phenotype of pathological vasculature in patients with

PCV is similar to that of tumor vasculature, PCV is likely to be particularly susceptible to treatment with a vascular disrupting agent, such as ZYBRESTAT. We expect to report data from the FAVOR study later in 2010."

About ZYBRESTAT (fosbretabulin)

ZYBRESTAT is being evaluated in a Phase 2 study of patients with non-small cell lung cancer and other clinical trials, including the FAVOR study in patients with PCV. OXiGENE believes that ZYBRESTAT is poised to become an important 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 trials 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.

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 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 life-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, which include projected study and topical formulation timelines and outcomes, therapeutic and commercial potential and the potential of partnering ZYBRESTAT ophthalmology programs 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 continued financing for the continuation of development efforts, the potential for negative clinical study or formulation development outcomes, a lack of superior competitive results and the absence of third party interest in jointly developing ZYBRESTAT. 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, 2009.

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