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**OXiGENE Reports Positive Preclinical Ocular Penetration Data with
Topical Formulation of ZYBRESTAT™ for Ophthalmology
*Key Feasibility Hurdle Overcome in Topical Ophthalmology Program***

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, today reported positive results from preclinical studies with topical formulations of ZYBRESTAT for ophthalmological indications. The studies, performed in industry-standard rabbit models, indicate that two formulations of ZYBRESTAT, when applied topically to the surface of the eye, are absorbed and result in concentrations of drug in target tissues in the back of the eye (i.e., the retina and choroids) that the Company believes will be sufficient for therapeutic activity in age-related macular degeneration (ARMD) and potentially other eye diseases in which abnormal neovascularization plays a role. These results confirm preliminary results seen in earlier preclinical studies.

“Achieving therapeutic concentrations of ZYBRESTAT with topical delivery in relevant ocular tissues, such as the retina, in preclinical models represents a key milestone in OXiGENE’s ophthalmology program,” commented OXiGENE’s President and Chief Executive Officer, Richard Chin, M.D. “Having previously observed in clinical trials that intravenously-administered ZYBRESTAT has clinical activity in patients suffering from a form of macular degeneration, we believe a topical formulation of ZYBRESTAT that delivers sufficient quantities of drug to target tissues in the eye has a high likelihood of demonstrating activity in the clinic. We now have results from multiple preclinical studies suggesting that development of such a formulation is feasible, and we believe that a topical formulation of ZYBRESTAT could potentially be a major advance for patients with a variety of ophthalmic diseases and conditions.”

Tolerability of the formulations was favorable in the rabbit studies, confirming data from earlier rodent studies. Based on these results, OXiGENE is proceeding with further preclinical studies in non-rodent models, which, if consistent with results from rabbit and rodent studies, are expected to provide support for an IND submission, currently planned for the first half of 2008.

In February 2007, OXiGENE announced positive results from a Phase II clinical trial of intravenous ZYBRESTAT in 23 patients with myopic macular degeneration. All patients achieved the primary endpoint of the trial, stabilization of vision. Results from the trial were reported in poster form in May 2007 at the 47th Annual Meeting of the Association of Research in Vision and Ophthalmology, and a copy of the poster is available on OXiGENE’s website at <http://www.oxigene.com/press/publications.asp> - Posters.

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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 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 success of further preclinical studies of topical formulations of ZYBRESTAT for ophthalmological indications and the timing and ability to submit an IND for a topical formulation of ZYBRESTAT for ophthalmological indications. 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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