

Xanthus' Xanafide is Unaffected by Multi-Drug Resistance in In Vitro
Preclinical Studies in Leukemia Cells

-Results Reported in Paper Published in Leukemia Research-

CAMBRIDGE, Mass.--Sept. 13, 2007--Xanthus Pharmaceuticals, Inc., today announced that a paper published in the journal *Leukemia Research* reported on the results of an in vitro study conducted by Xanthus in multi-drug resistant (MDR) leukemia cell lines. In the study the cytotoxic effect of Xanafide(R) (amonafile malate), was found to be unaffected by the over-expression of P-glycoprotein (Pgp+) in acute myeloid leukemia (AML) cell lines and that Xanafide was neither a substrate nor an inhibitor of Pgp. Increased levels of Pgp+ expression are a common cause of multi-drug resistance (MDR) for all of the currently used topoisomerase II inhibitors used for the treatment of AML. The company believes that this finding supports the positive levels of complete remissions observed with Xanafide in Phase 1 and Phase 2 trials in AML.

In the study, Xanthus researchers compared the cytotoxic activity of Xanafide to that of classical topoisomerase II inhibitors - daunorubicin, doxorubicin, idarubicin, etoposide, and mitoxantrone - in MDR leukemia cell lines. Xanthus researchers observed that Pgp+ caused the rapid efflux of classical topoisomerase drugs from the leukemia cells, resulting in decreased therapeutic drug concentrations. In contrast, Xanafide ability to reach therapeutic concentrations was not affected by the presence of Pgp+, and its potency was maintained. Independently conducted studies have shown that the proportion of AML patients with Pgp+ overexpression is increased with age and those with secondary AML.

"The current standard of care for remission induction therapy results in poor treatment response rates in many AML patients, especially the elderly and those with secondary AML. Virtually all drugs approved for AML treatment, with the exception of cytarabine, are affected by resistance mediated by Pgp over-expression, a common finding in AML patients," said Robert L. Capizzi, M.D., Xanthus' Chief Medical Officer. "We believe identifying that Xanafide is unaffected by this mechanism in vitro will be clinically meaningful and are hopeful that with further study, Xanafide may potentially provide patients and physicians with a much needed new treatment for AML."

"The ability of Xanafide to bypass Pgp clearly differentiates it from other drugs in its class and establishes it as a promising therapeutic candidate for secondary AML as well as other hematological cancers," said Richard T. Dean, Ph.D., Chief Executive Officer of Xanthus. "These results combined with the positive complete remission data from both our Phase 1 and 2 trials of Xanafide support our development plans for Xanafide which is currently under an SPA with the FDA for a Phase 3 trial."

The study was published in the early online version (<http://dx.doi.org/10.1016/j.leukres.2007.07.017>) and will appear in the printed version of *Leukemia Research*. It was authored by MyDoanh Chau, Jennifer Christensen, Alfred Ajami and Robert L. Capizzi, all of Xanthus, and is titled, "Amonafide, a topoisomerase II inhibitor, is unaffected by P-glycoprotein-mediated efflux."

About Xanafide(R) and Secondary AML

Xanafide (amonafile malate) is an ATP-independent topoisomerase II inhibitor that the Company is developing for the treatment of secondary acute myeloid leukemia (AML) and related disorders. Secondary AML patients have had either antecedent myelodysplastic syndrome or prior exposure to leukemogenic therapy and represent a poor prognosis population. While AML has approved treatments, no therapies are approved by FDA specifically for patients with secondary AML. In both Phase 1 and Phase 2 studies conducted in patients with poor-risk AML, amonafile exhibited particularly promising clinical activity in patients with secondary AML and the candidate does not appear to be susceptible to multi-drug resistance. Xanafide is currently under a special protocol assessment (SPA) agreement with the U.S. Food and Drug Administration (FDA) for a Phase 3 clinical trial. Xanafide has also been granted Orphan Drug designation by the FDA for use in the treatment of AML.

About Xanthus Pharmaceuticals, Inc.

Xanthus Pharmaceuticals, Inc. is developing a portfolio of novel, clinical-stage, small-molecule therapeutic candidates through a management team whose accomplished track record encompasses all aspects of drug development, from discovery through regulatory approval and commercialization. Xanthus is applying its expertise to advance its current pipeline to address significant unmet medical needs in oncology and autoimmune diseases.

Xanthus is headquartered in Cambridge, Massachusetts with an additional facility in Montreal, Quebec. More information is available at www.xanthus.com.

This press release contains forward-looking statements concerning Xanthus that involve a number of risks and uncertainties. For this purpose, any statements contained herein that are not statements of historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, the words, "believes," "anticipates," "plans," "expects," "estimates," "intends," "should," "could," "will," "may," and similar expressions are intended to identify forward-looking statements. There are a number of important factors that could cause Xanthus' actual results to differ materially from those indicated by such forward-looking statements, including risks as to whether results obtained in early clinical studies or in preclinical studies such as the studies referred to above will be indicative of results obtained in future clinical trials or warrant additional trials; whether products based on Xanthus' technology will advance through the clinical trial process and receive approval from the United States Food and Drug Administration or equivalent foreign regulatory agencies; whether the company will have the cash resources to develop and commercialize its products; and whether the patent and patent applications owned or licensed by Xanthus will protect the Company's technology and prevent others from infringing it. Xanthus disclaims any intention or obligation to update any forward-looking statements.

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