

Xanthus Initiates Pivotal Phase 3 Trial of Xanafide
in Secondary Acute Myeloid Leukemia

-Trial being conducted under Special Protocol Assessment from FDA-

CAMBRIDGE, Mass.--Oct. 8, 2007--Xanthus Pharmaceuticals, Inc., today announced that it has initiated patient dosing in a pivotal Phase 3 trial with Xanafide(R) (amonafide malate) for the treatment of patients with secondary acute myeloid leukemia (sAML). On June 12, 2007, the Company announced the completion of a Special Protocol Assessment (SPA) with the U.S. Food and Drug Administration (FDA) for the design of the Phase 3 trial. Under the SPA agreement, a statistically significant, positive result for this pivotal trial would support an efficacy claim for Xanafide in secondary AML in a New Drug Application (NDA).

"Xanafide's advancement into Phase 3 is an important development milestone for Xanthus, as this trial will be our Company's first registration trial," said Richard T. Dean, Ph.D., Chief Executive Officer of Xanthus. "Based on the results of our recent Phase 2 study, we believe that Xanafide has the potential to improve the lives of patients with secondary AML. Furthermore, we have seen data potentially differentiating Xanafide in the leukemia market as it may be one of few, if not the only, cytotoxics intended for induction therapy that does not lose potency due to multi-drug resistance."

The Phase 3 trial is designed as an open-label, randomized, active control, multi-center study of Xanafide in combination with cytarabine compared to daunorubicin in combination with cytarabine as initial remission induction therapy for patients with sAML. Xanthus plans to enroll approximately 350 patients in the trial. The primary endpoint of the study is the rate of complete remission. The study is intended to show superiority of the confirmed rate of complete remissions for Xanafide in combination with cytarabine as compared to daunorubicin in combination with cytarabine. Secondary endpoints of the study include duration of remission and safety.

About Xanafide(R) and Secondary AML

Xanafide (amonafide malate) is an ATP-independent topoisomerase II inhibitor that the Company is developing for the treatment of secondary acute myeloid leukemia (sAML) 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, amonafide exhibited particularly promising clinical activity in patients with secondary AML and the candidate does not appear to be susceptible to multi-drug resistance. Xanafide has been granted Orphan Drug designation by the U.S. Food and Drug Administration 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 such as the studies referred to above will be indicative of results obtained in future clinical trials or warrant further clinical 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; and whether the company will have the cash resources to develop and commercialize its products. Xanthus disclaims any intention or obligation to update any forward-looking statements.

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