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Sunesis to Host Conference Call on June 6th to Discuss Corporate Updates and VALOR Poster Presented at ASCO 2011

SOUTH SAN FRANCISCO, Calif., May 26, 2011 – Sunesis Pharmaceuticals, Inc. (NASDAQ: SNSS) today announced that it will host a conference call on Monday June 6, 2011 at 9:00 a.m. Eastern Time to discuss the progress of the VALOR trial, provide a general corporate update, and review the VALOR adaptive design poster scheduled to be presented at the 2011 American Society of Clinical Oncology (ASCO) Annual Meeting in Chicago, IL.

The company will present the poster titled "Adaptive design of VALOR, a phase III trial of vosaroxin or placebo in combination with cytarabine for patients with first relapsed or refractory acute myeloid leukemia" at McCormick Place, Hall A, during the Trials in Progress Poster Session on Monday, June 6, 2011 from 8:00 a.m. to 12:00 p.m. Central Time. (Poster #48G).

The abstract (#TPS201) can be found at http://abstract.asco.org/AbstView_102_82107.html.

Conference Call Information

The company will host a conference call on Monday June 6th at 9:00 a.m. Eastern time. Harry Erba, M.D., Ph.D, Associate Professor, Department of Internal Medicine at the University of Michigan and Executive Officer of the Southwest Oncology Group will join the Sunesis senior management team in a discussion of the VALOR adaptive design poster presented at ASCO that same day. Sunesis' senior management team will also provide a general corporate update. The call can be accessed by dialing (866) 700-6293 (U.S. and Canada) or (617) 213-8835 (international), and entering passcode 37887935. To access the live audio webcast, or the subsequent archived recording, visit the "Investors and Media - Calendar of Events" section of the Sunesis website at www.sunesis.com. The webcast will be recorded and available for replay on the company's website for two weeks.

About VALOR

VALOR is a Phase 3, randomized, double-blind, placebo-controlled, pivotal trial in patients with first relapsed or refractory AML. The trial is expected to enroll 450 evaluable patients at approximately 100 leading sites in the U.S., Canada, Europe, Australia and New Zealand. The VALOR trial is currently open for enrollment and patients will be randomized one to one to receive either vosaroxin on days one and four in combination with cytarabine daily for five days, or placebo in combination with cytarabine. Additionally, the VALOR trial employs an innovative, adaptive trial design that allows for a one-time

sample size adjustment by the DSMB at the interim analysis to maintain adequate power across a broad range of clinically meaningful and statistically significant survival outcomes. The trial's primary endpoint is overall survival. For more information on the VALOR trial, please visit www.valortrial.com.

About Vosaroxin

Vosaroxin is a first-in-class anticancer quinolone derivative, or AQD, a class of compounds that has not been used previously for the treatment of cancer. Vosaroxin both intercalates DNA and inhibits topoisomerase II, resulting in replication-dependent, site-selective DNA damage, G2 arrest and apoptosis.

About Acute Myeloid Leukemia

AML is a rapidly progressing cancer of the blood characterized by the uncontrolled proliferation of immature blast cells in the bone marrow. The American Cancer Society estimated that 12,330 cases of AML were diagnosed and approximately 9,000 deaths from AML occurred in the U.S. in 2010. Additionally, it is estimated that prevalence of AML is approximately 25,000 in the U.S. AML is generally a disease of older adults, and the median age of a patient diagnosed with AML is about 67 years. AML patients with relapsed or refractory disease and newly diagnosed AML patients over 60 years of age with poor prognostic risk factors typically die within one year, resulting in an acute need for new treatment options for these patients.

About Sunesis Pharmaceuticals

Sunesis is a biopharmaceutical company focused on the development and commercialization of new oncology therapeutics for the treatment of solid and hematologic cancers. Sunesis has built a highly experienced cancer drug development organization committed to advancing its lead product candidate, vosaroxin, in multiple indications to improve the lives of people with cancer. For additional information on Sunesis, please visit www.sunesis.com.

This press release contains forward-looking statements, including statements related to the design, conduct and results of the VALOR trial. Words such as “will,” “expected” and similar expressions are intended to identify forward-looking statements. These forward-looking statements are based upon Sunesis' current expectations. Forward-looking statements involve risks and uncertainties. Sunesis’ actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a results of these risks and uncertainties, which include, without limitation, risks related to Sunesis’ need for substantial additional funding to complete the development and commercialization of vosaroxin, risks related to Sunesis’ ability to raise the capital that it believes to be accessible and is required to fully finance the VALOR trial until its planned unblinding in 2013, the risk that Sunesis’ development activities for vosaroxin could be otherwise halted or significantly delayed for various reasons, the risk that Sunesis’ clinical studies for vosaroxin may not demonstrate safety or efficacy or lead to regulatory approval, the risk that data to date and trends may not be predictive of future data or results, the risk that Sunesis’ nonclinical studies and clinical studies may not satisfy the requirements of the FDA or other regulatory agencies, risks related to the conduct of Sunesis’ clinical trials, risks related to the manufacturing of vosaroxin and supply of the active pharmaceutical ingredients required for the conduct of the VALOR trial, the risk of third party opposition to granted patents related to vosaroxin, and the risk that Sunesis’ proprietary rights may not adequately protect vosaroxin. These and other risk factors are discussed under “Risk Factors” and elsewhere in Sunesis’ Quarterly Report on Form 10-Q for the quarter ended March 31, 2011 and Sunesis’ other filings with the Securities and Exchange Commission, including Sunesis’ Annual Report on Form 10-K for the year ended December 31, 2010. Sunesis expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in the company’s expectations with

regard thereto or any change in events, conditions or circumstances on which any such statements are based.