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Sunesis Secures \$25 Million Tranched Loan Facility

First Tranche of \$10 Million Funded at Close

SOUTH SAN FRANCISCO, Calif., October 19, 2011 – Sunesis Pharmaceuticals, Inc. (Nasdaq: SNSS) today announced that it has entered into a \$25 million tranched loan facility. Under the terms of the loan agreement, Sunesis received \$10 million upon closing, with the remaining \$15 million available for draw at its discretion following the planned interim analysis of the VALOR trial by an independent Data and Safety Monitoring Board (DSMB), which is expected in mid-2012. Sunesis anticipates using the funds to support the clinical development activities related to VALOR, a Phase 3, multinational, randomized, double-blind, placebo-controlled, pivotal clinical trial of vosaroxin in combination with cytarabine in first relapsed or refractory acute myeloid leukemia (AML), as well as other working capital and general corporate purposes.

“This facility provides additional financial strength and flexibility with the initial \$10 million tranche increasing our current cash reserves,” said Eric Bjerkholt, Senior Vice President of Corporate Development and Finance and Chief Financial Officer of Sunesis. “We anticipate that this facility, if fully drawn, together with our existing cash and investments, will substantially fund Sunesis’ execution of the VALOR trial through data unblinding regardless of the outcome at the interim analysis. We appreciate the support of our lender group, their flexibility in structuring a two-tranched, four-year loan, and their confidence in vosaroxin, VALOR and Sunesis.”

As previously announced, the DSMB will meet to examine pre-specified efficacy and safety data sets and decide whether to 1) stop the trial early for efficacy or for futility; 2) continue the study to its planned unblinding, expected in mid-2013; or 3) recommend a one-time “adaptive” sample size adjustment to a planned unblinding, expected in early 2014. The \$15 million tranche will be available to Sunesis, at its option, following the interim analysis, if the DSMB recommends ending the trial early for efficacy or continuing the study with or without a sample size adjustment.

The loan facility was led by Oxford Finance and partnered with Silicon Valley Bank and Horizon Technology Finance Corporation. Christopher A. Herr, Managing Director at Oxford Finance, said: “We are pleased to have led this \$25 million loan agreement to support the execution of Sunesis’ VALOR trial. Through our diligence process, we have gained great confidence in the trial’s rigorous design and execution.”

The four-year loan facility is structured to have an interest-only period until February 2013, followed by a 32-months amortization period. In conjunction with the loan, Sunesis granted the

lenders warrants to purchase an aggregate of 386,100 shares at an exercise price of \$1.30. Additional warrants will be due if the second tranche is drawn.

About VALOR

VALOR is a Phase 3, multinational, 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 estimates there will be 12,950 new cases of AML and approximately 9,050 deaths from AML in the U.S. in 2011. 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.

About Oxford Finance LLC

Oxford Finance is a specialty finance firm providing senior secured loans to public and private life sciences and healthcare services companies worldwide. For over 20 years, Oxford has delivered flexible financing solutions to its clients, enabling these companies to maximize their equity by leveraging their assets. In recent years, Oxford has originated over \$1.5 billion in loans, with lines of credit ranging from \$500 thousand to \$50 million. Oxford is headquartered in Alexandria, Virginia, with additional offices in California, Illinois, Massachusetts and North Carolina. For more information visit www.oxfordfinance.com.

About Horizon Technology Finance

Horizon Technology Finance Corporation (NASDAQ: HRZN) is a leading specialty finance company that provides secured loans to venture capital and private equity backed development-stage companies in the technology, life science, healthcare information and services, and clean-tech industries. With more than 20 years in venture lending, the Horizon team has provided over \$2 billion in financing to more than 750 companies. Horizon is headquartered in Farmington, CT with its regional office in Walnut Creek, CA. To learn more, call 860-676-8659 or visit www.horizontechnologyfinancecorp.com.

About Silicon Valley Bank

Silicon Valley Bank is the premier commercial bank for companies in the technology, life science, venture capital, private equity and premium wine industries. SVB provides a comprehensive suite of financing solutions, treasury management, corporate investment and international banking services to its clients worldwide. Through its focus on specialized markets and extensive knowledge of the people and business issues driving them, Silicon Valley Bank provides a level of service and partnership that measurably impacts its clients success. Founded in 1983 and headquartered in Santa Clara, Calif., the company serves clients around the world through 26 U.S. offices and seven international operations. Silicon Valley Bank is a member of global financial services firm SVB Financial Group. www.svb.com

This press release contains forward-looking statements, including statements related to the occurrence and timing of the DSMB interim analysis and unblinding of the VALOR trial, the design, conduct and results of the VALOR trial, the sufficiency of Sunesis' cash resources, and the use of proceeds from the first tranche and the availability of the second tranche under the loan facility with Oxford Finance LLC, Horizon Technology Finance Corporation and Silicon Valley Bank. Words such as "anticipates," "may," "provides," "will," "planned," "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 result 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, 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 June 30, 2011, Sunesis' Annual Report on Form 10-K for the year ended December 31, 2010 and Sunesis' other filings with the Securities and Exchange Commission. 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.

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