



Investor and Media Inquiries:

David Pitts
Argot Partners
212-600-1902

Eric Bjerkholt
Sunesis Pharmaceuticals Inc.
650-266-3717

Sunesis Announces Initiation of Phase 1 Study of MLN2480 in Advanced Solid Tumors

SOUTH SAN FRANCISCO, Calif., September 26, 2011 – Sunesis Pharmaceuticals, Inc. (Nasdaq: SNSS) today announced the initiation of a Phase 1 clinical study of MLN2480, an oral, investigative drug selective for pan-Raf kinase inhibition, that is being studied in patients with relapsed or refractory solid tumors. The study is sponsored by Millennium Pharmaceuticals, Inc., which is developing MLN2480 in oncology in collaboration with Sunesis. Under their agreement, Sunesis is eligible to receive milestone payments and royalties on sales of future collaboration products and retains future co-development and co-promotion rights.

The Phase 1, multicenter, open-label, dose escalation study will evaluate the safety, tolerability and maximum tolerated dose (MTD) of single agent MLN2480, and will be conducted in two stages: dose escalation and dose expansion. The dose escalation phase will include patients with advanced solid tumors who have failed or are not candidates for standard therapies or for whom no approved therapy is available. Secondary endpoints will assess preliminary antitumor activity, as well as pharmacokinetic and pharmacodynamic properties of MLN2480.

“The significant progress made with MLN2480 in just a few short months attests to its priority under Millennium’s direction,” said Daniel Swisher, Chief Executive Officer of Sunesis. “MLN2480 is a pan-Raf kinase inhibitor with a distinct molecular signature which has exhibited a promising preclinical profile. We are pleased to see that Millennium’s project team has rapidly moved this program into Phase 1, and look forward to evaluating the program as it reaches the next phase of development.”

About Raf Kinases

The Raf kinases (A-Raf, B-Raf and C-Raf) are key regulators of cell proliferation and survival within the mitogen-activated protein kinase (MAPK) pathway. The MAPK pathway is frequently dysregulated in human cancers, often via activating mutations of Ras or Raf.

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 collaboration between Millennium Pharmaceuticals, Inc. and Sunesis. Words such as "retains," "will," "promise," "promising," "look forward" and similar expressions are intended to identify forward-looking statements. These forward-looking statements are based upon Sunesis' current expectations and actual results and the timing of events could differ materially from those discussed in such forward-looking statements as a result of risks and uncertainties, which include, without limitation, risks related to the timing of the development of products under the collaboration, including MLN2480, the achievement of milestones, the ability and willingness of Millennium to progress collaboration compounds and for Sunesis to receive milestone payments, royalties and co-promotion and co-development rights. 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 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.

SUNESIS and the logo are trademarks of Sunesis Pharmaceuticals, Inc.
Millennium is a trademark of Millennium Pharmaceuticals, Inc.