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**GENSPERA RECEIVES APPROVAL TO COMMENCE G-202 PHASE I TRIAL
AT THE UNIVERSITY OF WISCONSIN CARBONE CANCER CENTER**

SAN ANTONIO, Texas, December 15, 2009 – GenSpera, Inc. (OTCBB: GNSZ) announced today that the Institutional Review Board (IRB) at the University of Wisconsin, in Madison, WI, has approved a Phase I study of its target activated pro-drug, G-202, for the treatment of cancer. The FDA (US Food and Drug Administration) approved the study in September. GenSpera expects to enroll the first study patient early in the first quarter of 2010.

The G-202 Phase I study is designed to enroll up to thirty patients with cancers that have progressed after treatment with other anti-cancer agents. The primary endpoints of the open-label, dose-escalation study are to determine the safety, tolerability and pharmacokinetics of the drug, although the design allows the collection of efficacy data as well. Patients will also accrue at a second major cancer center, subject to its IRB approving the study.

“This IRB approval is another important milestone for GenSpera as we now move into full-fledged clinical stage operations with our lead drug, G-202,” said Dr. Craig Dionne, CEO, GenSpera, Inc. “We look forward to working closely with our Phase I sites, which are internationally recognized leaders in clinical cancer research.”

“We are excited that this clinical trial has been activated at the University of Wisconsin Carbone Cancer Center,” said Dr. George Wilding, Director of the Carbone Cancer Center and the Principal Investigator (PI) for the study. “G-202 is a novel approach to the treatment of cancer and we hope that it has a significant effect for those patients whose lives are affected by this disease.”

Patients interested in enrolling in the G-202 trial may contact the University of Wisconsin Carbone Cancer Center Connect line at (800) 622-8922.

About G-202

G-202 is a pro-drug that is selectively activated within solid tumors by an enzyme present on the tumor blood vessels, thus destroying the tumor's blood supply. This is a dramatic improvement upon anti-angiogenic drugs that primarily only stop the growth of new blood vessels. In preclinical testing, G-202 was shown to ablate tumors in animal models of breast cancer, prostate cancer and kidney cancer.

About GenSpera

GenSpera, Inc. is a development stage oncology company focused on therapeutics which deliver a potent, unique and patented drug directly to tumors. GenSpera's technology platform combines a potent cytotoxin (12ADT) with a pro-drug delivery system that activates the drug only within the tumor. Unlike standard cancer drugs, plant-derived 12ADT kills cells independent of their division rate, thus making it effective at killing all fast- and slow- growing cancers and cancer stem cells. GenSpera's pro-drug platform is the subject of six issued patents with three additional patents pending.

Upon completion of its Phase I trial, GenSpera expects to initiate multiple Phase II trials for G-202 in several different cancer types. GenSpera, Inc. owns and controls all rights to G-202 and anticipates a strategic partnership to maximize the value of the drug as it progresses through future clinical trials. The company's second drug, G-115, will directly target prostate cancer.

For more information, please visit the Company's website: www.genspera.com.

Statements about GenSpera's future expectations, including statements about the potential use and scientific results for GenSpera's drug candidates, science and technology, and all other statements in this press release other than historical facts, are "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934, and as that term is defined in the Private Securities Litigation Reform Act of 1995. GenSpera intends that such forward-looking statements be subject to the safe harbors created thereby. These future events may not occur as and when expected, if at all, and, together with GenSpera's business, are subject to various risks and uncertainties. GenSpera's actual results could differ materially from expected results as a result of a number of factors, including the uncertainties inherent in research and development, pre-clinical and clinical trials and product development programs (including, but not limited to the fact that future results or research and development efforts may prove less encouraging than current results or

cause side effects not observed in pre-clinical trials), the evaluation of potential opportunities, the level of corporate expenditures and monies available for further studies, capital market conditions, and others set forth GenSpera's annual report on Form 10-K for the year ended December 31, 2008 as filed with the Securities and Exchange Commission and as may be amended. There are no guarantees that any of GenSpera's proposed products will prove to be commercially successful. GenSpera undertakes no duty to update forward-looking statements.

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