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Peregrine's Vascular Targeting Agent Platform Selectively Destroys Blood Supply to Cancer Tumors in an Animal Model

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TUSTIN, Calif.--(BW HealthWire)--June 11, 2002-- Preclinical Study was Conducted At M.D. Anderson and the University of

Texas Southwestern Medical Center At Dallas; Results to be Published

in Today's Proceedings of the National Academy of Sciences

Human Clinical Studies are Expected to Begin by Year-End

Peregrine Pharmaceuticals, Inc. (Nasdaq:PPHM) today announced that researchers at M.D. Anderson Cancer Center in Houston and the University of Texas Southwestern Medical Center at Dallas have demonstrated in an animal model that a new fusion protein that links vascular endothelial growth factor (VEGF) with a toxin (gelonin) targeted and destroyed the blood vessels supplying a tumor. This VEGF construct is a Vascular Targeting Agent (VTA) compound, which Peregrine licensed to SuperGen, Inc. (Nasdaq:SUPG) in February 2001.

The study, which appears in today's issue of the Proceedings of the National Academy of Sciences, involved administering VEGF121/rGelonin (VEGF/rGel) in mice injected with human melanoma and human prostate cancer cells. Researchers found that tumors in mice treated with VEGF/rGel had been reduced by up to 84 percent compared to tumors in untreated mice. Furthermore, VEGF/rGel selectively destroyed blood vessels supplying human solid tumors without harming the vasculature of normal tissue.

VEGF is one of the predominant factors responsible for angiogenesis -- the ability of a tumor to create new blood vessels to maintain growth and metastasize. Anti-angiogenic therapy has recently been a hot area in cancer research because it appears to bypass the major problem with chemotherapy -- the tumor cells' ability to mutate and develop resistance to the drugs.

"This is like a `Trojan horse' approach to kill the blood vessels that supply solid tumors," said Dr. Michael Rosenblum, professor of medicine at M.D. Anderson and principal investigator of the study. "We're using the vascular endothelial growth factor (VEGF) as a carrier to deliver a toxic agent selectively to the tumor's blood supply -- in effect, starving the tumor.

"Treatment with the VEGF/rGel significantly suppressed the tumor growth," added Dr. Rosenblum. "Destruction of the tumor blood vessels was observed as early as 48 hours after administration of the VEGF/rGel. There was no visible damage in any normal organs, including the kidneys, of the treated mice.

"The significance of this fusion toxin is that it's not specific to one kind of tumor. It has impressive anti-tumor effects in various kinds of tumors including melanoma and prostate cancers," said Dr. Rosenblum. "We need additional research to determine if it is equally effective in other cancers. Also, we expect human clinical studies to begin by year-end."

"The anti-tumor effects of the VEGF/rGel fusion construct against both melanoma and human prostate cancer in animal models were impressive in magnitude, and prolonged," said Dr. Philip Thorpe, professor of pharmacology at the University of Texas Southwestern Medical Center, and the inventor of the VTA technology. "These studies suggest that VEGF/rGel has potential as an anti-tumor agent for treating cancer patients."

"The receptors for VEGF are over expressed on the endothelium of tumor vasculature but are almost undetectable in the adjacent normal tissue, so they make excellent targets for the development of therapeutic agents that inhibit tumor growth and metastatic spread by inhibiting the new blood vessel formation," Dr. Rosenblum added. "The researchers chose the genetically engineered toxin gelonin to link to the VEGF carrier because it does not appear to be antigenic in human clinical trials conducted thus far at M.D. Anderson, and it does not cause damage to normal blood vessels as do other toxins which have been explored for use in anti-tumor therapies."

About Peregrine Pharmaceuticals, Inc.

Peregrine Pharmaceuticals is a biopharmaceutical company focused on the development, commercialization, and licensing of unique technologies for the treatment of cancer, primarily based on its three "collateral targeting technologies." Peregrine's Tumor Necrosis Therapy (TNT), Vasopermeation Enhancement Agents (VEA), and Vascular Targeting Agents (VTA) target cell structures and cell types that are common among solid tumor cancers, giving them broad applicability across various tumor types. The company's lead TNT anti-cancer drug, Cotara™, is currently in a multi-center Phase II clinical trial for brain cancer and Phase I trials for colorectal, pancreas, liver, soft tissue sarcoma and biliary cancers. Final preparations are being made to start a multi-center, multi-national Phase III trial for brain cancer. Peregrine's Oncolym®, for the treatment of non-Hodgkin's B-cell lymphoma, is currently in a multi-center Phase I/II study. Copies of Peregrine press releases, SEC filings, current price quotes and other valuable information for investors may be found on the Web site http://www.peregrineinc.com.

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