March 13, 2003

Overview of First International Conference on Vascular Targeting Published in Cancer Research

TUSTIN, Calif., Mar 13, 2003 /PRNewswire-FirstCall via COMTEX/ -- An overview of the First International Conference on Vascular Targeting has been published in the March issue of Cancer Research. The conference, which was held June 12-14, 2002, focused on vascular targeting agents (VTAs) that occlude or destroy pre- existing blood vessels of solid cancer tumors.

The overview was co-authored by Dr. Philip Thorpe, Ph.D., a professor at the University of Texas Southwestern Medical Center at Dallas who is the inventor of Peregrine Pharmaceuticals' (Nasdaq: PPHM) Vascular Targeting Agent platform technology. The overview provides an extensive update of the current research in the promising field of vascular targeting. Peregrine has exclusively licensed key VTA technology patents and currently sponsors Dr. Thorpe's research in this area.

VTAs are a potentially significant new weapon in the war against cancer because they cause a rapid shutdown in the blood supply to a tumor that kills tumor cells by depriving them of oxygen and nutrients. This is distinct from anti-angiogenic agents, which prevent new blood vessel formation.

Edward Legere, president and CEO of Peregrine Pharmaceuticals, said, "We believe that VTAs are an exciting technology that may prove to be important in the war against cancer. Peregrine is in a good position to work in the VTA area due to its extensive patent coverage in the field of vascular targeting. Peregrine is currently actively seeking to enter into licensing arrangements in the VTA area."

VTAs developed by Dr. Thorpe and his team represent the next generation of cancer therapy that works by a novel mechanism of action. Essentially, all detectable tumors rely on blood vessels to obtain oxygen and nutrients. In pre-clinical animal studies using VTAs, we have seen that VTAs can specifically block the blood flow into tumors, effectively cutting off the supply of oxygen and nutrients to the tumor cells. This has a devastating effect on the tumor resulting in complete remissions in many cases.

Two types of VTAs are currently being developed for cancer treatment: ligand-directed and small molecule VTAs. Ligand-directed VTAs use antibodies and peptides to target toxins, pro-coagulants, and pro-apoptotic effectors specifically to tumor endothelium. Most small molecule VTAs do not specifically localize to tumor endothelium, but exploit pathophysiological differences between tumor and normal tissue endothelia to induce selective occlusion of tumor vessels.

Both types of VTAs have produced a characteristic pattern of necrosis after administration to mice and rats with solid tumors. They cause a widespread central necrosis that can extend to as much as 95% of the tumor. A thin rim of viable tumor cells usually survives at the periphery of the tumor at which point the tumor cells obtain nutrients from unaffected blood vessels in the surrounding normal tissues. There are thought to be a number of advantages of VTAs over other cancer therapies.

VTAs localize within the tumor vasculature by selectively binding to the flat endothelial cells that line tumor blood vessels. Once the VTA binds to its target, it initiates thrombosis (blood clotting) through a coagulation cascade, which leads to complete clotting of the tumor blood vessels within a matter of minutes. Because blockage of a single capillary results in the destruction of thousands of tumor cells, only a small quantity of VTAs localized in the tumor's vascular system may cause an avalanche of tumor cell death.

Vascular targeting agents offer several advantages as potentially powerful anti-cancer treatments. By targeting receptors unique to tumor cell vasculature, VTAs can kill tumors by cutting off oxygen and nutrients without causing damage to surrounding healthy tissue. Additionally, VTAs reduce the risk of potential side effects by operating at lower dosages than traditional cancer therapies because they do not need to penetrate the innermost layer of a tumor to take effect. Lastly, while drug resistance caused by the instability and mutability of cancer cells is a significant problem with conventional therapies that target tumor cells, cells targeted by VTAs do not mutate to become drug resistant.

About Peregrine Pharmaceuticals

Peregrine Pharmaceuticals is a biopharmaceutical company focused on the development, commercialization and licensing of unique technologies for the treatment of cancer, primarily based on three collateral targeting technologies. Peregrine's Tumor Necrosis Therapy (TNT), Vasopermeation Enhancement Agents (VEA) and Vascular Targeting Agents (VTA) technologies

target cell structures and cell types that are common among solid tumor cancers, giving them broad applicability across various tumor types. The company has received approval from the FDA to start a Cotara™ Phase III clinical trial for brain cancer. Cotara is also being studied in a Phase I trial for colorectal, pancreas, soft tissue sarcoma and biliary cancers at Stanford University. The company is focused on licensing collaborations for all of its technologies under development. The company also operates a cGMP contract manufacturing facility for monoclonal antibodies and recombinant proteins through its wholly-owned subsidiary Avid Bioservices, Inc. (www.avidbio.com). Copies of Peregrine press releases, SEC filings, current price quotes and other valuable information for investors may be found on the website www.peregrineinc.com.

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