April 6, 2011

Four AACR Presentations Highlight Broad Therapeutic and Diagnostic Potential of Peregrine's First-in-Class PS-Targeting Platform

Peregrine's Antibodies Show Utility as Tumor Imaging Agents; Anti-Tumor Effects in Liver and Prostate Cancer Models; and New Immune Reactivation Mechanisms

TUSTIN, CA and ORLANDO, FL -- (MARKET WIRE) -- 04/06/11 -- Peregrine Pharmaceuticals, Inc. (NASDAQ: PPHM), a clinical-stage biopharmaceutical company developing first-in-class monoclonal antibodies for the treatment of cancer and viral infections, highlighted data presented at the Annual Meeting of the American Association of Cancer Research (AACR) demonstrating the broad therapeutic and diagnostic potential of its phosphatidylserine (PS)-targeting platform. Peregrine's lead PS-targeting antibody bavituximab is currently in three randomized Phase II clinical trials in lung cancer and pancreatic cancer and several investigator-sponsored trials (ISTs) in additional oncology indications.

Presented Today at AACR:
Tumor Imaging Applications of PS-Targeting Antibodies (1)
Studies demonstrated that a fragment of Peregrine's PS-targeting antibody attached to an imaging agent effectively localizes to tumors and allows real-time assessment of response to chemotherapy in preclinical models of cancer.

"Molecular imaging is a growing field and represents an entirely new development opportunity for our first-in-class PS-targeting antibody platform," said Steven W. King, president and chief executive officer of Peregrine. "PS is an immunosuppressive molecule expressed on the vasculature of every solid tumor studied by our researchers, and the effects of chemotherapy and radiation therapy increase the exposure of PS on tumor blood vessels, thereby creating a more abundant target for imaging. As such, our antibodies labeled with imaging tracers hold potential for illustrating exposed PS in a clinical oncology setting, imaging PS as a companion diagnostic with bavituximab therapy, as well as ultimately assessing patient response to a range of cancer therapies."

Presented Previously at AACR Annual Meeting 2011:
Hepatocellular Carcinoma (HCC) Studies Show Enhanced Anti-Tumor Effects (2)
Studies showed Peregrine's PS-targeting antibody significantly enhanced the anti-tumor effects of sorafenib (Nexavar®) in models of hepatocellular carcinoma (HCC), with 69% less tumor growth compared to sorafenib alone. These studies were the basis for initiating a Phase I/II IST evaluating bavituximab with sorafenib in patients with advanced HCC. Studies showed that sorafenib more than doubles the amount of PS exposed on the blood vessels of HCC tumors. Tumor growth was 69% less for the group receiving Peregrine's antibody in combination with sorafenib than for the group receiving sorafenib alone (tumor weight of 127 mg versus 409 mg, n=10, $p < 0.01$) after 59 days of treatment. Immunofluorescence analysis showed that treatment with Peregrine's antibody in combination with sorafenib decreased tumor blood vessel density from 14.2% to 4.5% ($p < 0.01$), versus 10.3% ($p < 0.05$) for Peregrine's antibody or 8.4% ($p < 0.01$) for sorafenib alone. These data were previously reported in a press release from Peregrine on April 5, 2011.

Prostate Cancer Studies Show Long-Term Regressions (3)
Data showed the combination of androgen deprivation therapy (ADT) with Peregrine's PS-targeting antibody is more effective than ADT alone in models of prostate cancer. Although castration delayed tumor growth in a human model of prostate cancer in mice, all animals relapsed. By comparison, all animals treated with castration in combination with Peregrine's antibody did not relapse. In a transgenic (TRAMP) model, only 54% (7/13) of mice treated with castration alone survived beyond 40-weeks of age, compared to 92% (12/13) of mice treated with castration and Peregrine's antibody. Castration induced the exposure of PS on tumor blood vessels and tumor cells, providing a more abundant target for Peregrine's antibody. No toxicity was caused by the antibody treatment.

Novel Immune Reactivation Mechanisms (4)
Data from several studies suggest PS-targeting antibodies prompt a reactivation of innate immune functions inside tumors. New studies demonstrated that an animal equivalent of bavituximab alters immune cells' production of signaling chemicals from an immunosuppressive (IL-10-dominated) response generally associated with fostering growth, to a pro-inflammatory (IL-12 and TNFα -dominated) response associated with tumor destruction. This immune shift was demonstrated by a doubling of the ratio of tumor-fighting (M1) to tumor-tolerating (M2) macrophages inside tumors as compared to animals treated with a control antibody.

"We have now measured several important immune response changes induced by the PS-targeting action of bavituximab," said Philip E. Thorpe, Ph.D., professor of pharmacology at UT Southwestern Medical Center, scientific adviser to Peregrine and inventor of the company's PS-targeting antibody technology. "When taken together, the data support bavituximab initiating a fundamental shift inside tumors, overcoming what is now increasingly understood to be PS-mediated immune tolerance of tumors. Based on the consistent anti-tumor data we have observed in our prior studies, we had suspected that PS-targeting antibodies were facilitating immune reactivation in tumors. These new data strengthen our hypothesis and potentially have broad implications for the future of cancer immunotherapy."

(1) Jian Gong(1), Linda Him(2), Christopher Hughes(2), Bruce Freimark(1). (1)Peregrine Pharmaceuticals, Inc., Tustin, CA; (2) University of California, Irvine, CA. Monitoring tumor response to chemotherapy by in vivo real-time imaging of phosphatidylserine targeting antibodies. In Proceedings of the 102nd Annual Meeting of the American Association for Cancer Research (AACR); 2011 Apr 2-6; Orlando, FL. Abstract 4880.

(2) Xiaoyun Cheng and Philip E. Thorpe, UT Southwestern Medical Center, Dallas, TX. Phosphatidylserine-targeting antibody combined with sorafenib has strong anti-tumor activity against human hepatocellular carcinomas in mice. In Proceedings of the 102nd Annual Meeting of the American Association for Cancer Research (AACR); 2011 Apr 2-6; Orlando, FL. Abstract 2643.

(3) Yi Yin and Philip E. Thorpe, UT Southwestern Medical Center, Dallas, TX. Targeting phosphatidylserine to improve androgen deprivation therapy of prostate cancer. In Proceedings of the 102nd Annual Meeting of the American Association for Cancer Research (AACR); 2011 Apr 2-6; Orlando, FL. Abstract 621.

(4) Xianming Huang, Dan Ye, Philip E. Thorpe, UT Southwestern Medical Center, Dallas, TX. Phosphatidylserine-targeting antibody induces differentiation of myeloid-derived suppressor cells into M1-like macrophages. In Proceedings of the 102nd Annual Meeting of the American Association for Cancer Research (AACR); 2011 Apr 2-6; Orlando, FL. Abstract 3651.

Copies of the AACR posters are available at Peregrine's website at http://www.peregrineinc.com/technology/bavituximab-oncology/recent-data.html.

About Bavituximab
Bavituximab is a first-in-class phosphatidylserine (PS)-targeting monoclonal antibody that represents a new approach to treating cancer. PS is a highly immunosuppressive molecule usually located inside the membrane of healthy cells, but "flips" and becomes exposed on the outside of cells that line tumor blood vessels, creating a specific target for anti-cancer treatments. PS-targeting antibodies target and bind to PS and block this immunosuppressive signal, thereby enabling the immune system to recognize and fight the tumor.

About Peregrine Pharmaceuticals
Peregrine Pharmaceuticals, Inc. is a biopharmaceutical company with a portfolio of innovative monoclonal antibodies in clinical trials for the treatment of cancer and serious viral infections. The company is pursuing multiple clinical programs in cancer and hepatitis C virus infection with its lead product candidate bavituximab and novel brain cancer agent Cotara®. Peregrine also has in-house cGMP manufacturing capabilities through its wholly-owned subsidiary Avid Bioservices, Inc. (www.avidbio.com), which provides development and biomanufacturing services for both Peregrine and outside customers. Additional information about Peregrine can be found at www.peregrineinc.com.

Safe Harbor Statement: Statements in this press release which are not purely historical, including statements regarding Peregrine Pharmaceuticals' intentions, hopes, beliefs, expectations, representations, projections, plans or predictions of the future are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. The forward-looking statements involve risks and uncertainties including, but not limited to, the risk that results from future studies will not be consistent with results experienced in earlier clinical trials and preclinical studies, the risk that investigators may experience delays in or fail to initiate planned trials, risk that results may not support registration filings with the U.S. Food and Drug Administration, and the risk that Peregrine may not have or raise adequate financial resources to complete the planned clinical programs. Factors that could cause actual results to differ materially or otherwise adversely impact the company's ability to obtain regulatory approval for its product candidates include, but are not limited to, uncertainties associated with completing preclinical and clinical trials for our technologies; the early stage of product development; the significant costs to develop our products as all of our products are currently in development, preclinical studies or clinical trials; obtaining additional financing to support our operations and the development of our products; obtaining regulatory approval for our technologies; anticipated timing of regulatory filings and the potential success in gaining regulatory approval and complying with governmental regulations applicable to our business. Our business could be affected by a number of other factors, including the risk factors listed from time to time in the company's SEC reports including, but not limited to, the annual report on Form 10-K for the year ended April 30, 2010 and the quarterly report on Form 10-Q for the quarter ended January 31, 2011. The company cautions investors not to place undue reliance on the forward-looking statements contained in this press release. Peregrine Pharmaceuticals, Inc. disclaims any obligation, and does not undertake to update or revise any forward-looking statements in this press release.

Peregrine Contact:

Amy Figueroa

Peregrine Pharmaceuticals

(800) 987-8256

info@peregrineinc.com

Source: Peregrine Pharmaceuticals, Inc.

News Provided by Acquire Media