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Peregrine's PS-Targeting Antibody Significantly Improves Anti-Tumor Effect of Sorafenib in Models of Advanced Liver Cancer

AACR Data Presentation Supports Phase I/II Investigator-Sponsored Clinical Trial in Advanced Liver Cancer

TUSTIN, CA and ORLANDO, FL -- (MARKET WIRE) -- 04/05/11 -- Peregrine Pharmaceuticals, Inc. (NASDAQ: PPHM), a clinical-stage biopharmaceutical company developing first-in-class monoclonal antibodies for the treatment of cancer and viral infections, today announced that its phosphatidylserine (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. This study, one of four poster presentations on Peregrine's PS-targeting antibodies at the Annual Meeting of the American Association of Cancer Research (AACR), was the basis for initiating a Phase I/II investigator-sponsored trial (IST) evaluating the company's lead antibody bavituximab with sorafenib in patients with advanced HCC. Bavituximab is currently in three randomized Phase II clinical trials in lung cancer and pancreatic cancer and several ISTs for additional oncology indications.

"Our studies show that sorafenib more than doubles the amount of the immunosuppressive molecule PS exposed on the blood vessels of HCC tumors," 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. "These data suggest that the growth-blocking mechanisms of sorafenib combined with the vascular-targeting and immune-reactivation mechanisms of bavituximab may offer additive anti-tumor effects for patients with HCC."

As presented today at AACR, tumor growth was 69% less for the group receiving Peregrine's antibody in combination with sorafenib than for the group receiving sorafenib alone (mean tumor weight of 127 mg versus 409 mg, n=10, $p < 0.01$) after 59 days of treatment in an animal model study. 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.

A copy of the AACR poster is available at Peregrine's website at http://www.peregrineinc.com/technology/bavituximab-oncology/recent-data.html.

About the Phase I/II HCC Investigator-Sponsored Trial
In an ongoing open-label Phase I/II trial, patients with advanced HCC are receiving bavituximab weekly and sorafenib (400 mg) twice daily, until disease progression or toxicity. Phase I of the trial is dose escalation (0.3, 1 or 3 mg/kg) to determine the maximum tolerated dose (MTD) and Phase II is expansion of the study at the MTD. Approximately 50 patients are being enrolled in this trial, which is being conducted at UT Southwestern Medical Center.

Primary objectives are to determine the MTD of bavituximab in patients with advanced HCC treated with sorafenib and the radiographic median time to progression. Secondary objectives include response rate, progression free-survival, overall survival, safety and tolerability. Further information about this trial is available at PeregrineTrials.com, UT Southwestern Medical Center Clinical Trials, and ClinicalTrials.gov.

About Peregrine's Investigator-Sponsored Trials (IST) Program
Peregrine's IST program offers oncologists the opportunity to conduct clinical trials using bavituximab in solid tumor indications.

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 Hepatocellular Carcinoma (HCC)
According to the National Cancer Institute, primary liver and bile duct cancers are the sixth most common cause of cancer death in men, and ninth most common in women. Approximately 24,000 new cases of these two cancers are expected to be diagnosed this year in the United States, with approximately 19,000 deaths attributable to these forms of cancer. The most

common risk factor for liver cancer is chronic hepatitis C virus (HCV) or hepatitis B virus (HBV) infection. Currently approved treatment options for HCC are surgery, radiation, chemotherapy, targeted therapeutics, tumor ablation, and tumor embolization.

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.

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.

Nexavar® (sorafenib) is a registered trademark of Onyx Pharmaceuticals/Bayer Healthcare.

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 investigator-sponsored trials will not be consistent with results experienced in earlier clinical trials and preclinical studies, the risk that investigators may experience delays in patient enrollment, 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.

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