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Three Presentations at AACR Annual Meeting Show Breadth of Applications for Peregrine's Innovative Phospholipid-Targeting Technologies

Phase I Bavituximab Trial Results Provide Key Support for New Randomized Phase II Trials to Begin Mid-Year 2010

WASHINGTON, DC and TUSTIN, CA, Apr 21, 2010 (MARKETWIRE via COMTEX News Network) -- Peregrine Pharmaceuticals, Inc. (NASDAQ: PPHM), a clinical-stage biopharmaceutical company developing innovative monoclonal antibodies for the treatment of cancer and viral infections, today announced three data presentations at the AACR 101st Annual Meeting 2010 demonstrating the breadth of potential applications for the company's phospholipid-targeting technologies. Peregrine's lead phosphatidylserine (PS)-targeting antibody bavituximab is currently in Phase II clinical trials in non-small cell lung cancer (NSCLC) and advanced breast cancer, with additional results expected by mid-year 2010.

"These presentations highlight the broad-spectrum potential of our innovative technologies, including positive final results from our Phase I bavituximab cancer trial, encouraging preclinical prostate cancer data from our fully human PS-targeting antibody, and new data showing that a related phospholipid-targeting agent has exciting potential for tumor imaging," commented Steven W. King, president and chief executive officer at Peregrine Pharmaceuticals. "We are eager to begin two new randomized bavituximab Phase II NSCLC trials by mid-year, as well as begin to initiate clinical studies under our new investigator-sponsored trials program for research professionals who share our enthusiasm for the clinical potential of our novel therapies bavituximab and Cotara(R)."

Phase I Bavituximab Data(1) Final results from a Phase I study confirmed earlier data demonstrating that bavituximab as a monotherapy is safe and well tolerated in patients with advanced solid tumor malignancies. The majority of adverse events reported were mild or moderate in nature.

"Bavituximab was generally safe and well-tolerated, with a predictable pharmacokinetic profile," said Nuhad K. Ibrahim, M.D., principal investigator of this study and professor, department of breast medical oncology, division of cancer medicine, at The University of Texas M.D. Anderson Cancer Center. "This study provided valuable pharmacokinetic data needed to establish the 3 mg/kg weekly intravenous dose for use in Peregrine's upcoming randomized Phase II cancer trials."

The objectives of this multi-center, open-label dose escalation study were to determine the safety and tolerability of bavituximab in patients with advanced cancer, to characterize the pharmacokinetic profile of bavituximab and to identify dose-limiting toxicities and the maximum tolerated and/or effective dose.

Prostate Cancer Preclinical Study(2) In a preclinical study in a mouse model of human prostate cancer, a fully human PS-targeting antibody (1N11) developed by Peregrine and Affitech Research enhanced the anti-tumor activity of androgen deprivation therapy (ADT), the cornerstone of current prostate cancer treatment. The combination of Peregrine's PS-targeting antibody and ADT resulted in a significant increase in survival time of 15 days, compared to just five days with ADT alone and three days with the PS-targeting antibody alone. Researchers also showed that ADT increased the number of tumor blood vessels with exposed PS from 60% to 93%, which likely contributed to the synergistic effects seen with the combination regimen. Toxicity was not observed.

"The combination of a PS-targeting antibody and ADT significantly improved the anti-tumor response and prolonged survival without contributing to toxicity in this prostate cancer model, making ADT yet another anti-tumor therapy that may have synergistic anti-cancer effects when combined with PS-targeting antibodies," commented Dr. Philip Thorpe, professor of pharmacology at the University of Texas Southwestern Medical Center, a scientific advisor to Peregrine and co-investigator of this study. "ADT causes prostate tumors to express more PS, enhancing the immunostimulatory and anti-vascular effects of PS-targeting antibodies. These encouraging results confirm earlier studies in preclinical models of prostate cancer and support the further development of Peregrine's PS-targeting antibodies as potential new therapies for prostate cancer patients."

PE Cancer Imaging Agent Study(3) A new cancer imaging study from researchers at UT Southwestern Medical Center showed that a phosphatidylethanolamine (PE)-targeting peptide has potential as a new and effective tumor imaging agent. PE is a second major phospholipid in addition to PS that is present inside the membranes of healthy cells and becomes exposed on the outside of cells that line tumor blood vessels and on virus-infected cells. Previously, Peregrine researchers have shown that PE-targeting agents have anti-cancer and anti-viral properties.

In this preclinical study, the PE-targeting peptide duramycin was injected into animals with different types of tumors, where it rapidly localized to the tumor vasculature without binding to the blood vessels of normal tissues. Duramycin conjugated to a probe efficiently labeled tumors for detection and did not accumulate in non-target tissues, demonstrating broad potential application in cancer imaging.

"There is a significant unmet medical need for new diagnostic agents that can rapidly home and bind to tumors so that they can be clearly detected in cancer imaging," commented Dr. Thorpe, co-investigator of this study. "These promising preclinical data suggest that PE-targeting agents may have potential as cancer imaging agents."

About Peregrine's Technology and Products Peregrine has a portfolio of phosphatidylserine (PS) and phosphatidylethanolamine (PE)-targeting candidates that have shown broad-spectrum potential for the treatment of cancer and virus diseases. Peregrine's lead PS-targeting antibody is bavituximab, a first-in-class monoclonal antibody that targets the cellular membrane phospholipid PS. Usually located inside cells, PS becomes exposed on the outside of cells that line tumor blood vessels and on certain viruses and the cells they infect, creating a specific target for treatments while sparing healthy cells that do not express PS. Bavituximab induces immune cell-mediated destruction of cells with exposed PS and is also believed to restore the immune system's ability to recognize and respond by blocking PS-mediated immunosuppression. Initial results from Phase II cancer trials of bavituximab in combination with chemotherapy have been encouraging, with objective tumor response rates that compare favorably to historical results with chemotherapy alone.

1. Nuhad Ibrahim(1), Lucas Wong(2), Alison Stopeck(3), Lee S. Rosen(4), David E. Gerber(5), Joseph S. Shan(6). (1)MD Anderson Cancer Center, Houston, TX; (2)Scott & White Memorial, Temple, TX; (3)Arizona Cancer Center, Scottsdale, AZ; (4)Premiere Oncology, Santa Monica, CA; (5)UT Southwestern, Dallas, TX; (6)Peregrine Pharmaceuticals, Tustin, CA. Phase 1 study of bavituximab in advanced solid tumor malignancies: Final results. In: Proceedings of the 101st Annual Meeting of the American Association for Cancer Research (AACR); 2010 Apr 17-21; Washington, D.C. Abstract 5337.
2. Yi Yin(1), Anita Kavlie(2), Philip E. Thorpe(1). (1)UT Southwestern Medical Center, Dallas, TX; (2)Affitech Research AS, Oslo, Norway. Phosphatidylserine-targeting antibody enhances survival benefit of androgen deprivation therapy in mice bearing syngeneic prostate cancer. In: Proceedings of the 101st Annual Meeting of the American Association for Cancer Research (AACR); 2010 Apr 17-21; Washington, D.C. Abstract 5330.
3. Jason H. Stafford, Shuzhen Li, Philip E. Thorpe, UT Southwestern Medical Ctr., Dallas, TX. Phosphatidylethanolamine is a marker of tumor vasculature and can be used as a target for optical imaging. In: Proceedings of the 101st Annual Meeting of the American Association for Cancer Research (AACR); 2010 Apr 17-21; Washington, D.C. Abstract 5232.

The AACR conference is being held April 17-21, 2010 in Washington, D.C. For more information, visit www.aacr.org.

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 three separate clinical programs in cancer and hepatitis C virus infection with its lead product candidates bavituximab and Cotara(R). 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 larger trials will not be consistent with results experienced in earlier trials. 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, 2009 and the quarterly report on Form 10-Q for the quarter ended January 31, 2010. 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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