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Data to Be Presented at CRI Immunotherapy Conference Show PS-Targeting Antibodies Enhance the Anti-Tumor Activity of Immune Checkpoint Inhibitors by Decreasing Levels of Myeloid Derived Suppressor Cells (MDSC) in the Tumor Microenvironment

UTSW Collaborators Found Phosphatidylserine (PS)-Targeting Antibody in Combination With an Anti-PD-1 or an Anti-CTLA-4 Immune Checkpoint Inhibitor Promotes a Robust, and Localized Anti-Tumor Response in Models of Melanoma and Breast Cancer; Statistically Significant Tumor Growth Suppression With Combination of PS-Targeting Antibody and Anti-PD-1 Versus Antibody Alone in Breast and Melanoma Models; Lead PS-Targeting Antibody Bavituximab in a Phase III Trial in Second-Line Non-Small Cell Lung Cancer and a First Immunotherapy Combination Trial With Ipilimumab (Yervoy®) in Advanced Melanoma

TUSTIN, CA -- (Marketwired) -- 10/06/14 -- Peregrine Pharmaceuticals, Inc. (NASDAQ: PPHM) (NASDAQ: PPHMP), today announced the presentation of preclinical data related to the company's immuno-oncology development program and its lead drug candidate bavituximab, a phosphatidylserine (PS)-targeting antibody. Data show that PS-targeting agents in combination with immune checkpoint inhibitors, such as anti-PD-1 or anti-CTLA-4, promote a robust and localized anti-tumor response in models of melanoma and breast cancer and decrease levels of myeloid derived suppressor cells (MDSC) in the tumor microenvironment. Newly generated data show that the combination of a PS-targeting antibody equivalent to bavituximab administered with an anti-PD-1 antibody displayed statistically significant tumor growth suppression compared to anti-PD-1 antibody treatment alone in an animal model of melanoma. These data will be presented this morning at the Cancer Research Institutes' "Cancer Immunotherapy: Out of the Gate" conference being held at the Grand Hyatt Hotel in New York, New York.

"We are pleased to be presenting this exciting data to this immuno-oncology focused audience," said Jeff T. Hutchins, Ph.D. vice president, preclinical research at Peregrine Pharmaceuticals "These data are impressive and consistent in their findings across several tumor types and further build on the rationale for additional collaborative studies such as the ongoing investigator-sponsored Phase Ib trial of bavituximab in combination with ipilimumab (Yervoy®) in advanced melanoma."

The poster titled: "Antibody-mediated blockade of phosphatidylserine enhances the anti-tumor activity of immune checkpoint inhibitors by affecting myeloid-derived suppressor cell (MDSC) and lymphocyte populations in the tumor microenvironment" will be presented by Rolf Brekken, Ph.D., Effie Marie Cain Research Scholar in Angiogenesis Research and an Associate Professor, in the Departments of Surgery and Pharmacology at the Hamon Center for Therapeutic Oncology Research, University of Texas Southwestern Medical Center in Dallas, Texas. Data from these studies show that the PS-targeting antibody ch1N11, the preclinical equivalent to bavituximab, significantly enhances tumor growth inhibition of anti-CTLA-4 or anti-PD-1 in the B16 and K1735 melanoma models and the efficacy of anti-PD-1 in the EMT-6 breast tumor model. New data show that the combination of ch1N11 and an anti-PD-1 antibody produce a statistically significant difference (p=0.018) in tumor growth suppression over anti-PD-1 alone in the B16 melanoma model. In addition, PS blockade with ch1N11 combined with either anti-CTLA-4 or anti-PD-1 resulted in greater T cell infiltration into B16 and K1735 tumors than tumors treated with either antibody alone. Consistent with these results, ch1N11 combined with anti-PD-1 showed an enhanced percentage of T cells producing the cytokines IL-2 and IFNg, factors associated with immune activation, when compared with T cells from tumors being treated with anti-PD-1 alone. In summary, the targeting and blocking of PS with ch1N11 significantly improved the anti-tumor efficacy of immune checkpoint blockade in robust models of melanoma and breast cancer in immunocompetent animals.

The link to the poster can be found from the front page of the company's website at: www.peregrineinc.com.

About Peregrine Pharmaceuticals, Inc.

Peregrine Pharmaceuticals, Inc. is a biopharmaceutical company with a pipeline of novel drug candidates in clinical trials for the treatment and diagnosis of cancer. The company's lead immunotherapy candidate, bavituximab, is in Phase III development for the treatment of second-line non-small lung cancer (the "SUNRISE trial") along with several investigator-sponsored trials evaluating other treatment combinations and additional oncology indications. The company is also advancing a molecular imaging agent, 124I-PGN650, in an exploratory clinical trial for the imaging of multiple solid tumor types. 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 third-party 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 potential human clinical studies involving combinations of PS-targeting agents with immune checkpoint inhibitors such as anti-PD-1 or anti-CTLA-4 may not correlate with the data from the preclinical studies. It is important to note that the company's actual results could differ materially from those in any such forward-looking statements. Factors that could cause actual results to differ materially 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 our reports filed with the Securities and Exchange Commission including, but not limited to, our annual report on Form 10-K for the fiscal year ended April 30, 2014 as well as any updates to these risk factors filed from time to time in the company's other filings with the Securities and Exchange Commission. 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.

Yervoy is a registered trademark of Bristol-Myers Squibb.

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