November 8, 2013

Data Presentation at Society for Immunotherapy of Cancer Annual Meeting Supports Potential of Peregrine Pharmaceuticals' Novel Immunotherapy Bavituximab in Combination With Anti-CTLA-4 Antibodies

Phosphatidylserine (PS) and CTLA-4 Targeting Antibody Combination Stopped Tumor Growth in 100% of Animals in Preclinical Melanoma Model; Planning Underway for Near-Term Phase I Clinical Trial Evaluating Bavituximab and Anti-CTLA-4 Combination Immunotherapy in Patients With Advanced Melanoma

TUSTIN, CA -- (Marketwired) -- 11/08/13 -- Peregrine Pharmaceuticals, Inc. (NASDAQ: PPHM) today announced the presentation of data at the Society for Immunotherapy of Cancer (SITC) Annual Meeting in National Harbor, Maryland being held November 7-10. The data showed that phosphatidylserine (PS)-targeting antibodies reactivate tumor immunity at multiple levels and that these antibodies, when combined with an anti-CTLA-4 antibody, an FDA-approved immunotherapy, yielded enhanced anti-tumor activity in a pre-clinical model of melanoma. Peregrine is planning to initiate a Phase III clinical trial in second-line non-small cell lung cancer with its lead PS-targeting antibody bavituximab by year-end.

In the presentation titled: "Targeting of Phosphatidylserine by Monoclonal Antibodies Induces Innate and Specific Anti-tumor Responses," scientists from Peregrine and The University of Texas Southwestern Medical Center examined the anti-tumor response of a PS-targeting antibody equivalent to bavituximab and anti-CTLA-4 combination therapy in a mouse melanoma model. Results showed that the group (n=12) that received the combination resulted in superior tumor growth inhibition than with either antibody alone with no additional toxicity following multiple treatment doses. In addition, histopathological analysis showed the combination produced more inflammatory cell infiltration and tumor destruction than anti-CTLA-4 alone.

"The results presented at SITC demonstrate that PS-targeting antibodies can block PS-mediated immunosuppression while simultaneously activating the immune system and that these effects can greatly improve the number of subjects responding to anti-CTLA-4 immunotherapy," said Jeff T. Hutchins, Ph.D., vice president of preclinical research at Peregrine. "We believe the encouraging preclinical combination treatment data are due in part to the ability of bavituximab to facilitate an increase in tumor-specific cytotoxic T-cell activity, a function that appears to expand and broaden the potential of immunotherapeutic agents including anti-CTLA-4 and anti-PD-1 which prime and sustain T-cell mediated killing of tumor cells in our pre-clinical models. We are continuing to explore these and other immunotherapy combinations and look forward to reporting additional results as they become available."

In the presentation titled: "Phosphatidylserine-targeting antibody induces M1 macrophage polarization, promotes myeloid derived suppressor cell differentiation, boosts tumor-specific immunity," researchers from The University of Texas Southwestern Medical Center showed that equivalents of bavituximab facilitated a tumor-localized decrease in immunosuppressive cytokines and immune cells, while inducing an increase in immunostimulatory cytokines, tumor-fighting M1 macrophages, mature dendritic cells and tumor-specific cytotoxic T-cells.

"These encouraging data further support the potential of giving bavituximab to enhance the potential of other immunotherapies such as anti-CTLA-4 antibodies. Our goal is to now advance this combination into clinical studies as part of our plans to obtain further proof of concept data for novel immunotherapy combinations including bavituximab," said Joseph Shan, MPH, vice president of clinical and regulatory affairs at Peregrine. "Recent clinical data have shown that immunotherapies can enhance tumor-specific T-cell responses resulting in promising survival benefits in some patients. We believe that bavituximab, by breaking immune tolerance in tumors and activating both the innate and adaptive immune system, holds the potential to allow more patients to respond to immunotherapies such as anti-CTLA-4 antibodies that target other checkpoints in the immune cascade. As such, we are actively working towards initiating a clinical trial in the coming months to further investigate the potential synergistic effects of bavituximab and an approved immunotherapy in patients with melanoma."

Presentation Details

Poster #172 Targeting of Phosphatidylserine by Monoclonal Antibodies Induces Innate and Specific Anti-tumor Responses.
Jian Gong, Xianming Huang, Van Nguyen, Richard Archer, Jeff Hutchins, Steven King, Bruce Freimark, Peregrine Pharmaceuticals, Inc., Tustin, California, University of Texas Southwestern Medical Center, Dallas, Texas

When:
Saturday, November 9th from 6:15-7:15 PM

Location:
Gaylord National Hotel & Convention Center
Convention Center Lower Level
Prince George's Exhibit Hall E

http://www.peregrineinc.com/images/stories/pdfs/sitc_172_gong.pdf

Poster #176 Phosphatidylserine-targeting antibody induces M1 macrophage polarization, promotes myeloid derived suppressor cell differentiation, boosts tumor-specific immunity. Xianming Huang, Yin Yi, Gustavo Barbero, Dan Ye, Philip E. Thorpe, Department of Pharmacology, The University of Texas Southwestern Medical Center, Dallas, Texas

When:
Saturday, November 9th from 6:15-7:15 PM

Location:
Gaylord National Hotel & Convention Center
Convention Center Lower Level
Prince George's Exhibit Hall E

http://www.peregrineinc.com/images/stories/pdfs/sitc_176_huang.pdf

About Bavituximab: A Targeted Immunotherapy

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, causing the tumor to evade immune detection. Bavituximab targets PS and activates the maturation of dendritic cells and cancer-fighting (M1) macrophages leading to the development of cytotoxic T-cells that fight solid tumors through blocking this immunosuppressive PS signal. Bavituximab is the company's lead PS-targeting investigational product and is currently being evaluated in several solid tumor indications, including non-small cell lung cancer, breast cancer, liver cancer and rectal cancer.

About Peregrine Pharmaceuticals

Peregrine Pharmaceuticals, Inc. is a biopharmaceutical company with a portfolio of innovative monoclonal antibodies in clinical trials focused on the treatment and diagnosis of cancer. The company is pursuing multiple clinical programs in cancer with its lead immunotherapy 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 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 the results from ongoing proof-of-concept studies may not be consistent with the results published in the manuscript, the risk that combining bavituximab with other antibodies that enhance tumor immunity, such as an anti-PD1, anti-PD-L1, or anti-CTLA-4, may not result in any additional benefit, and the risk that the results from the planned Phase I clinical trial evaluating bavituximab with anti-CTLA-4 in patients with advanced melanoma may not be consistent with the results from the preclinical model. 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, 2013 and our quarterly report on Form 10-Q for the quarter ended July 31, 2013. 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.

Contact:
Christopher Keenan or Jay Carlson
Peregrine Pharmaceuticals
(800) 987-8256
info@peregrineinc.com

Source: Peregrine Pharmaceuticals