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## **AstraZeneca and Peregrine Pharmaceuticals Expand Ongoing Immuno-Oncology Collaboration to Include Phase II Lung Cancer Combination Clinical Trial**

### **- Global, Randomized Phase II Trial to Evaluate Immunotherapy Combination of Peregrine's PS-Targeting Bavituximab and AstraZeneca's PD-L1 Inhibitor Durvalumab (MEDI4736) in Previously Treated NSCLC -**

TUSTIN, Calif., Oct. 15, 2015 (GLOBE NEWSWIRE) -- Peregrine Pharmaceuticals, Inc. (NASDAQ:PPHM) (NASDAQ:PPHMP), a biopharmaceutical company focused on developing therapeutics to stimulate the body's immune system to fight cancer, today announced that it has expanded its ongoing cancer immunotherapy clinical collaboration with AstraZeneca to include a second, later-stage trial. The companies will now also evaluate the immunotherapy combination of Peregrine's phosphatidylserine (PS)-targeted immune-activator, bavituximab, and AstraZeneca's anti-PD-L1 immune checkpoint inhibitor, durvalumab (MEDI4736), in a global Phase II study in patients with previously treated squamous or non-squamous non-small cell lung cancer (NSCLC). The randomized Phase II trial will be conducted by Peregrine.

As part of the Phase II bavituximab and durvalumab combination trial, patients will be evaluated retrospectively for the correlation between their PD-L1 levels and clinical outcomes. This new study builds on the non-exclusive collaboration initiated between the companies in August 2015 to conduct a Phase I/Ib basket clinical trial evaluating the combination of bavituximab and durvalumab with chemotherapy in multiple solid tumors.

Bavituximab and durvalumab are investigational immunotherapies with different mechanisms that assist the body's immune system in fighting cancer. Bavituximab targets and modulates the activity of phosphatidylserine, a highly immune-suppressive molecule expressed broadly on the surface of cells in the tumor microenvironment. In pre-clinical and translational clinical studies, the treatment increases activated T-cells in tumors and fights cancer by reversing the immunosuppressive environment that many tumors establish in order to proliferate. Durvalumab is a monoclonal antibody directed against programmed cell death ligand 1 (PD-L1). Signals from PD-L1 help tumors avoid detection by the immune system. Preclinical data have demonstrated that combining the enhanced T-cell mediated anti-tumor activity of bavituximab with checkpoint inhibitors, like PD-L1 antibodies, prolong the ability of tumor-specific T-cells to continue attacking the tumor.

"In the short period of time that we have been working with AstraZeneca, we have been very impressed with the company's commitment to innovative translational efforts that will help us better understand the dynamics of tumor immunity and clinical response to durvalumab and bavituximab combination in a range of cancers," said Joseph Shan, MPH, vice president, clinical and regulatory affairs of Peregrine. "We expect this extension of our collaboration with AstraZeneca will allow us to run a much more cost-effective and time-efficient trial than would have been possible under our previously planned study using Opdivo as the combination drug in the same lung cancer population. This Phase II study offers several key advantages including a supply of durvalumab that will enable us to conduct a global trial that can enroll patients more rapidly. In addition, the expanded collaboration provides for a more cohesive clinical program utilizing the same PD-L1 and other biomarker analysis across both the new Phase II trial and the already planned Phase I/Ib study combining durvalumab and bavituximab in multiple indications."

#### **About Bavituximab: A Targeted Investigational Immunotherapy**

Bavituximab is an investigational chimeric monoclonal antibody that targets phosphatidylserine (PS). Signals from PS inhibit the ability of immune cells to recognize and fight tumors. Bavituximab, the lead compound in Peregrine's immuno-oncology development program, blocks PS to remove this immunosuppressive signal and sends an alternate immune activating signal. Targeting PS with bavituximab has been shown to shift the functions of immune cells in tumors, resulting in robust anti-tumor immune responses.

#### **About durvalumab (MEDI4736)**

Durvalumab is an investigational human monoclonal antibody directed against programmed cell death ligand 1 (PD-L1). Signals from PD-L1 help tumors avoid detection by the immune system. Durvalumab blocks these signals, countering the tumor's immune-evading tactics. Durvalumab is being developed, alongside other immunotherapies, to empower the patient's immune system and attack the cancer.

#### **About Peregrine Pharmaceuticals, Inc.**

Peregrine Pharmaceuticals, Inc. is a biopharmaceutical company with a pipeline of novel drug candidates in clinical trials focused on the treatment 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. Peregrine also has in-house cGMP manufacturing capabilities through its wholly-owned subsidiary Avid Bioservices, Inc. ([www.avidbio.com](http://www.avidbio.com)), which provides development and biomanufacturing services for both Peregrine and third-party customers. For more information, please visit [www.peregrineinc.com](http://www.peregrineinc.com).

## About AstraZeneca

AstraZeneca is a global, innovation-driven biopharmaceutical business that focuses on the discovery, development and commercialisation of prescription medicines, primarily for the treatment of cardiovascular, metabolic, respiratory, inflammation, autoimmune, oncology, infection and neuroscience diseases. AstraZeneca operates in over 100 countries and its innovative medicines are used by millions of patients worldwide. For more information please visit: [www.astrazeneca.com](http://www.astrazeneca.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 AstraZeneca decides not to provide its drug for a specific study, the risk that the combination of bavituximab with PD-L1 and PD-1 based therapies will not increase the responsiveness of such PD-L1 and /or PD-1 therapies, the risk that the company may experience delays in initiating the Phase II trial and the risk that data from the initial clinical trial or the Phase II clinical trial does not support further development of this treatment combination. 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, 2015 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.*

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