

Peregrine PS-Targeting Antibodies Show Broad Potential to Image Tumors and Assess Cancer Therapy Response

Two Preclinical Data Poster Presentations at the 2011 World Molecular Imaging Congress

TUSTIN, CA -- (MARKET WIRE) -- 09/12/11 -- 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 new data from its phosphatidylserine (PS)-targeting tumor imaging studies were presented at the 2011 World Molecular Imaging Congress (WMIC) held September 7-10, 2011. PS is a 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 tumor imaging and anti-cancer treatments.

"These preclinical data further validate the ability of our PS-targeting antibodies to image tumors and their potential in assessing the effectiveness of standard cancer therapies. These are two important applications that could help clinicians and researchers evaluate therapeutic responses early on in therapy. While keeping our main focus on advancing our Phase II clinical programs for our lead PS-targeting antibody bavituximab, we believe our imaging platform has broad potential in providing a visual assessment of a patient's response to therapy. This technology is nearing readiness for the clinic, either as an internal effort or in conjunction with a potential partner, and we look forward to advancing the program," said Steven W. King, president and chief executive officer of Peregrine.

Philip E. Thorpe, Ph.D., professor of pharmacology in the Harold C. Simmons Comprehensive Cancer Center at UT Southwestern Medical Center, scientific advisor to Peregrine and inventor of the company's PS-targeting antibody technology, noted that, "Studies presented at the WMIC this past week demonstrate the potential of PS-targeting antibodies and antibody fragments to be used as vehicles to transport imaging agents to tumor blood vessels."

"The results demonstrate that PS is a highly specific target on the blood vessels of multiple solid tumor types, and confirm that chemotherapy and radiation therapy further increase the amount of PS exposed on tumor blood vessels," said Dr. Thorpe, who is the senior author of one study presented here. "These data clearly suggest that PS-targeting antibodies may have broad utility in the growing field of diagnostic imaging."

Posters presented at the 2011 World Molecular Imaging Congress:

Title: Imaging of Human Tumor Xenografts in Mice Using Near-Infrared Fluorescent-Labeled Phosphatidylserine Targeting Antibodies

Authors: Jian Gong, Richard Archer, Linda Him, Christopher Hughes, Bruce Freimark

Key Highlights: A fragment of the fully human PS-targeting antibody PGN635 targets externalized PS on the blood vessels of prostate and breast tumors. Docetaxel increased the localization of the antibody to the tumors. These data provide a rationale to image PS expression for tumors and to monitor responses to chemotherapy.

Title: <u>Multimodal Imaging of Exposed Phosphatidylserine in a Mouse Glioma Model</u> Authors: D. Zhao, J. Stafford, H. Zhou, H. Dunn, P. E. Thorpe

Key Highlights: The fully human PS-targeting monoclonal antibody PGN635 was joined with near infrared (NIR) dye and magnetic iron oxide particles to image dynamics of PS exposure in mice with glioma tumors via NIR as well as magnetic resonance imaging (MRI) modalities. Imaging experiments demonstrated significant exposed PS on the cells lining the blood vessels of the tumors. Irradiation of the gliomas resulted in significantly more PS exposure, further increasing the tumor contrast. The study suggests that the high tumor specificity of PGN635 may be a useful new imaging probe for the detection of exposed PS in tumors responding to therapy.

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 <u>www.peregrineinc.com</u>.

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