



Presage Biosciences Presents Data Demonstrating Tumor Growth Inhibition by Voruciclib and Proteasome Inhibitors Superior to Single Agents in Model of Triple Negative Breast Cancer

– *Data Presented at AACR Annual Meeting from CIVO™ Platform* –

Seattle – April 19, 2016 – Presage Biosciences, an oncology company that is developing a novel drug development platform to assess drug combinations directly in patient tumors, will present preclinical data showing that the company’s clinical-stage oral CDK inhibitor, voruciclib, in combination with proteasome inhibitors, demonstrated superior tumor growth inhibition in xenografts than the single agents separately in a model of triple negative breast cancer (TNBC), a disease which has proven challenging to treat with standard chemotherapy options. The data are being presented today at the American Association for Cancer Research (AACR) 2016 Annual Meeting in New Orleans.

In a poster presentation entitled “Voruciclib, a clinical stage CDK inhibitor sensitizes triple negative breast cancer xenografts to proteasome inhibition,” Presage researchers present results from a study using the Presage CIVO platform, which allows for simultaneous assessment of multiple drugs or drug combinations directly in a single solid tumor, to identify drug combinations with voruciclib that result in synergistic anti-tumor activity in the HCC1187 model of triple negative breast cancer:

- Because voruciclib demonstrates potent activity against CDK 9, the study aimed to identify agents that result in induction of pro-survival regulators such as MCL-1, a direct target of CDK 9, as good candidates for combination with voruciclib.
- In a CIVO screen with a number of drugs for possible combinations, bortezomib, a proteasome inhibitor, induced the highest localized expression of MCL-1.
- Injecting voruciclib and bortezomib in combination directly into tumors led to robust localized anti-tumor activity.
 - In contrast, exposure to either voruciclib or bortezomib as single agents showed limited anti-tumor activity.
- The combination effect with voruciclib also was present when injected in combination with other proteasome inhibitors, including next-generation oral proteasome inhibitor MLN2238.
 - Again, no significant impact on tumor progression was observed in xenografted subjects treated with either voruciclib or MLN2238 as single agents.
- In addition, the results obtained with CIVO accurately predicted the outcome of systemic drug

efficacy studies where tumor regression or stasis were induced by combining voruciclib with either bortezomib or MLN2238.

Presage is developing voruciclib, a clinical-stage oral CDK inhibitor, in combination with other agents identified through CIVO, an in vivo assessment technology intended for drug development to enable the first side-by-side comparison of multiple drugs and combinations within a single living tumor while still in a patient's body, without exposing the patient to the toxicity associated with systemically dosed drugs.

"The CIVO platform has enabled us to rapidly gain a better understanding of the unique biology of tumor response to voruciclib, particularly in combination with other agents," said Nathan Caffo, President of Presage. "We expect to apply these findings as Presage develops voruciclib drug combinations in the clinic to hopefully provide more effective treatments for patients with cancer."

About Presage Biosciences

Presage Biosciences is an oncology company pioneering a new drug development approach to assess novel drug combinations directly in patient tumors with its patented CIVO™ arrayed microinjection platform. The CIVO platform is a drug development tool intended to simultaneously assess responses multiple drugs or drug combinations directly in a single solid tumor while still in a patient's body. Presage is using CIVO™ to develop a portfolio of promising oncology therapies to advance to the clinic, including voruciclib, a clinical-stage oral CDK inhibitor in clinical development for multiple cancer indications. Presage also partners with oncology-focused pharmaceutical companies through strategic alliances to provide data to discover effective drug combinations. Presage is privately held and based in Seattle. For more information, visit www.presagebio.com.

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