



Calithera Biosciences Announces Four Preclinical Presentations at the American Association for Cancer Research Annual Meeting 2016

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Potential for CB-839 and CB-1158 to each combine with immuno-oncology therapies

SOUTH SAN FRANCISCO, Calif., April 18, 2016 (GLOBE NEWSWIRE) -- Calithera Biosciences, Inc. (Nasdaq:CALA), a clinical stage biotechnology company focused on the development of novel cancer therapeutics, today announced preclinical data for each of its therapeutic candidates, CB-839 and CB-1158, at the 2016 American Association for Cancer Research Annual Meeting, taking place April 16-20, 2016, in New Orleans, Louisiana. CB-839 is a potent, selective, orally bioavailable glutaminase inhibitor currently in phase I clinical trials. CB-1158 is a first-in-class immuno-oncology agent targeting arginase, a key immuno-suppressive enzyme that limits T-cell proliferation in a wide range of tumors.

"Both CB-839 and CB-1158 have the distinction of targeting metabolic checkpoints which we believe through rational combinations, have the potential to be transformational in the treatment of cancer. For CB-839, we look forward to initiating a trial in combination with anti-PD-1 in the second quarter. We have made significant progress on our CB-1158 program, and remain on track to file an IND application in mid-2016," said Susan Molineaux, PhD, President and Chief Executive Officer of Calithera.

CB-839

Preclinical data will be presented in a poster titled, "Glutaminase inhibition with CB-839 enhances anti-tumor activity of PD-1 and PD-L1 antibodies by overcoming a metabolic checkpoint blocking T cell activation," by Matt Gross, Director of Pharmacology at Calithera Biosciences (Abstract #2329). Included in the presentation are the results of studies investigating the preclinical anti-tumor activity of CB-839 in combination with an anti-PD-L1 or an anti-PD-1 antibody. The combination of CB-839 and anti-PD-L1 or anti-PD-1 increased the number of tumor regressions seen in the CT-26 syngeneic colon carcinoma model. Synergistic effects with CB-839 and anti-PD-L1 were also observed in a B16 melanoma model. The mechanism of action of anti-PD-L1 combined with CB-839, two agents that affect metabolism in the tumor microenvironment, is being explored in further studies.

The following two abstracts were also presented at the meeting by Calithera's collaborators:

Neurofibromatosis type 1 (NF1) status determines sensitivity of soft tissue sarcoma and melanoma cell lines to glutaminase inhibitors (Abstract #19). Presenter: Tahir Sheikh, PhD, Laboratory of Gary Schwartz, MD, Columbia University

GLS inhibitor CB-839 modulates cellular metabolism in AML and potently suppresses AML cell growth when combined with 5-azacitidine (Abstract #1004). Presenter: Tianyu Cai, PhD, Laboratory of Marina Konopleva, MD, University of Texas MD Anderson Cancer Center

CB-1158

Preclinical data was presented in a poster titled, "Immuno-oncology agent CB-1158 is a potent and selective arginase inhibitor and causes an immune mediated anti-tumor response," by Melissa Works, PhD, Scientist at Calithera Biosciences (Abstract #552). CB-1158, a highly selective, orally bioavailable, small molecule inhibitor of human arginase with nanomolar potency, demonstrated single agent efficacy in animal models. Inhibition of tumor growth was accompanied by an increase in the local concentration of arginine, and the induction of multiple pro-inflammatory changes in the tumor microenvironment. CB-1158 increased CD8+ T-cell infiltrates in a lung tumor model. The addition of CB-1158 to anti-CTLA-4 and anti-PD-1, significantly inhibited tumor growth and reduced metastases in a mouse model that was resistant to dual checkpoint inhibitor therapy. CB-1158 was well tolerated as a single agent and in combination with checkpoint inhibitors in animal studies.

Arginase is a critical immunosuppressive enzyme that inhibits T-cell proliferation and function. Arginase depletes arginine, a nutrient that is critical for the activation, growth and survival of two of the body's cancer-fighting immune cells, known as cytotoxic T-cells and natural killer (NK) cells. Arginase inhibitors can restore arginine levels and reverse the immuno-suppressive effect of arginase-secreting myeloid-derived suppressor cells (MDSCs). MDSCs are present in many human tumors and are correlated with poor prognosis. CB-1158 has the potential for anti-tumor activity in a variety of malignancies, including non-small cell lung cancer, colorectal cancer, gastric cancer and bladder cancer, among other tumor types that are highly infiltrated with MDSCs.

About Calithera Biosciences

Calithera Biosciences, Inc. is a clinical-stage pharmaceutical company focused on discovering and developing novel small molecule drugs directed against tumor metabolism and tumor immunology targets for the treatment of cancer. Calithera's lead product candidate, CB-839, is currently being evaluated in three Phase 1 clinical trials in solid and hematological cancers. CB-1158 is a first-in-class immuno-oncology metabolic checkpoint inhibitor targeting arginase, a critical immunosuppressive enzyme responsible for T-cell suppression by myeloid-derived suppressor cells. Arginase depletes arginine, a nutrient that is critical for the activation, growth and survival of the body's cancer-fighting immune cells, known as cytotoxic T-cells. Calithera is headquartered in South San Francisco, California. For more information about Calithera, please visit www.calithera.com.

Forward Looking Statements

This news release contains forward-looking statements by Calithera that involve risks and uncertainties. These statements include those related to the clinical trial activity, tolerability and unique mechanism of action of CB-839, the safety of CB-839 and the initiation of multiple expansion cohorts in solid tumor types and Calithera's intention to expand its CB-839 development program to include immunotherapy agents. These statements also include those related to the potential for CB-1158 to inhibit arginase, induce anti-cancer activity and combine with other immuno-oncology therapies that target T-cell activation, the timing of Calithera's submission of an IND application to the FDA for its oral arginase inhibitor and the potential for drugs targeting metabolism pathways of immune cells to be transformational in the treatment of cancer. Actual results may differ from Calithera's expectations and important factors that could cause actual results to differ materially. Calithera's arginase program or other potential product candidates that Calithera develops may not progress through clinical development or receive required regulatory approvals within expected timelines or at all. In addition, clinical trials may not confirm any safety, potency or other product characteristics described or assumed in this press release. Such product candidates may not be beneficial to patients or successfully commercialized. The failure to meet expectations with respect to any of the foregoing matters may have a negative effect on Calithera's stock price. Additional information concerning these and other risk factors affecting Calithera's business can be found in Calithera's most recent Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission, and other periodic filings with the Securities and Exchange Commission at www.sec.gov. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, Calithera disclaims any obligation to update these forward-looking

statements to reflect future events or circumstances.

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