Calithera Biosciences Highlights Results From Six Preclinical Abstracts at the American Association for Cancer Research Annual Meeting 2015

April 21, 2015

-Potential Biomarker Response to CB-839 Among KRAS and EGFR Mutant Cell Lines

-Synergy of CB-839 with Signal Transduction Pathways

SOUTH SAN FRANCISCO, Calif., April 21, 2015 (GLOBE NEWSWIRE) -- Calithera Biosciences, Inc. (Nasdaq:CALA) 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, today will announce preclinical data for its lead anti-cancer therapeutic candidate, CB-839, Calithera's novel, orally bioavailable glutaminase inhibitor, at the American Association for Cancer Research, taking place April 18-22, 2015 in Philadelphia, Pennsylvania. CB-839 is a potent, selective, orally bioavailable glutaminase inhibitor in phase I clinical trials.

"We have identified KRAS and EGFR mutation status as potential biomarkers correlated to enhanced sensitivity of CB-839, which could ultimately direct our development of CB-839 in non-small cell lung cancer. In addition, based on our synergy studies, CB-839 in combination with signal transduction inhibition may offer a novel therapeutic strategy for the treatment of non-small cell lung cancer and renal cell carcinoma," said Susan Molineaux, PhD, President and Chief Executive Officer of Calithera.

Preclinical data will be presented by Lindsey Boroughs from the laboratory of Ralph Debaradinis at the University of Texas Southwestern in an oral session titled, "Evaluation of the glutaminase inhibitor CB-839 in non-small cell lung cancer," on April 21, 2015 (Abstract #4710). In this session, data will be presented demonstrating that lung cancer cell lines carrying EGFR or KRAS mutations have enhanced sensitivity to CB-839. Additional preclinical data from Calithera will be presented by Frank Parlati, Senior Director of Biology, in an oral session titled "CB-839, a selective glutaminase inhibitor, synergizes with signal transduction pathway inhibitors to enhance anti-tumor activity," (Abstract #4711). Signaling through mTOR is down regulated by CB-839, demonstrating a relationship between signal transduction pathways and cancer metabolism. CB-839 also synergizes with the mTOR inhibitor everolimus in renal clear cell carcinoma lines. In addition, CB-839 has synergistic activity with the MEK inhibitor selumetinib in KRAS mutant lung cancer cell lines both in vitro and in vivo, and with the EGFR inhibitor erlotinib in EGFR mutant lung cancer cell lines as well as in erlotinib-resistant EGFR mutant animal models lacking the T790M mutation.

CB-839 was also the subject of a poster presented by Calithera's collaborator Arimichi Okazaki from the Laboratory of Othon Iliopoulos at the Massachusetts General Hospital titled, "Glutaminase inhibitors suppress pyrimidine synthesis and promote DNA replication stress in Von Hippel-Lindau (VHL) deficient human renal cells (Abstract #1123)." The data demonstrate that CB-839 induces double stranded breaks in VHL deficient renal cell carcinoma cells and that PARP (Poly ADP-ribose polymerase) inhibitors synergize with CB-839 in these cells.

Three additional presentations at the meeting include:

Targeting glucose and glutamine regulated BCL2 family members for multiple myeloma therapy
Abstract #972
Presenter: Richa Bajpai, Winship Cancer Institute, Emory University
Sunday, April 19, 2015

CB839, an orally bioavailable glutaminase inhibitor, shows potent antitumor activity in vitro against models of soft tissue sarcoma and chondrosarcoma
Abstract #4450
Presenter: Tahir Sheikh, Laboratory of Gary Schwartz, Columbia University
Tuesday, April 21, 2015

A new anticancer strategy based on inhibiting mitochondrial proline dehydrogenase (PRODH) and exploiting synthetic lethal interactions with p53 restoration and/or glutaminase (GLS1) inhibition
Abstract #5402
Presenter: Gary Scott, Laboratory of Christopher Benz, Buck Institute
Wednesday, April 22, 2015

The meeting abstracts can be viewed online through the AACR website at www.aacr.org.

About Calithera Biosciences

Calithera Biosciences is a clinical-stage company focused on discovering and developing novel small molecule drugs directed against tumor metabolism and tumor immunology. Calithera's lead clinical candidate, CB-839, is a first-in-class inhibitor of glutaminase, a critical enzyme in tumor metabolism, and is currently being tested in patients with solid and hematological cancers. Calithera Biosciences is headquartered in South San Francisco. For more information about Calithera Biosciences, please visit www.calithera.com.

Forward Looking Statements

Statements contained in this press release regarding matters that are not historical facts are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "expect," "anticipate," "estimate," "intend," "poised" and similar expressions (as well as other words or expressions referencing future events, conditions, or circumstances) are intended to identify forward-looking statements. These statements include those related to Calithera's development of CB-839 in non-small cell lung cancer and the potential therapeutic strategy for of CB-839. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. The 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 Annual Report on Form 10-K for the fiscal year ended December 31, 2014 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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