March 7, 2016

Data from MacroGenics' Preclinical Studies of MGD009 Presented at Keystone Symposia's Antibodies as Drugs (X2) Conference

- **MGD009 is a bispecific DART molecule that targets B7-H3 and CD3**
- **Redirected T-cell killing of multiple B7-H3-expressing tumor cell lines observed in vitro**
- **Dose-dependent inhibition of tumor growth and regression observed in vivo**
- **Linear PK and prolonged half-life support dosing at biweekly intervals**

ROCKVILLE, Md., March 07, 2016 (GLOBE NEWSWIRE) -- MacroGenics, Inc. (Nasdaq: MGNX), a clinical-stage biopharmaceutical company focused on discovering and developing innovative monoclonal antibody-based therapeutics for the treatment of cancer, as well as autoimmune disorders and infectious diseases, announced that results from preclinical studies of MGD009 were presented today by the Company in an oral presentation at Keystone Symposia's "Antibodies as Drugs (X2)" conference held jointly with the meeting on "Cancer Vaccines: Targeting Cancer Genes for Immunotherapy" in Whistler, British Columbia, Canada. Paul A. Moore, Ph.D., Vice President of Cell Biology and Immunology at MacroGenics and first author, presented "MGD009, a B7-H3 x CD3 Bispecific Dual-Affinity Re-Targeting (DART®) Molecule Directing T Cells to Solid Tumors."

The objectives of the studies were to evaluate the antitumor activity and pharmacokinetics of MGD009 in preclinical models. MGD009 is a DART molecule that was designed to bind to B7-H3 and CD3 simultaneously to mediate redirected T-cell activity against B7-H3-expressing cancer cells.

These studies demonstrated that MGD009 redirected T cells to kill B7-H3-expressing human cancer cell lines from a wide range of tumor types in vitro and in vivo. T-cell activation and proliferation by MGD009 is dependent upon co-engagement of B7-H3-expressing target cells with T cells. In human T cell or peripheral blood mononuclear cell (PBMC)-reconstituted mice, MGD009 demonstrated dose-dependent inhibition of growth and regression of B7-H3-expressing tumor xenografts.

In addition, Dr. Moore presented findings demonstrating linear pharmacokinetics and a prolonged half-life of MGD009 in cynomolgus monkeys, supporting dosing at biweekly intervals in humans.

These data support the evaluation of MGD009 in patients with B7-H3-positive tumors. A Phase 1 study of MGD009 in patients with B7-H3-expressing solid tumors is ongoing.

"These preclinical antitumor activity and pharmacokinetics data have provided strong rationale for the development of MGD009 in the treatment of B7-H3-expressing tumors, which encompasses a large number of cancer types," said Scott Koenig, M.D., Ph.D., President and CEO of MacroGenics. "Our Phase 1 study of MGD009 represents a very exciting milestone and important application of our DART platform technology to this compelling target."

The poster presentation at the Keystone Symposia is available for download from the Events & Presentations page on MacroGenics' website at http://ir.macrogenics.com/events.cfm.

Background on MGD009 and B7-H3

MGD009 is a humanized DART molecule that recognizes both B7-H3 and CD3 and has a prolonged serum half-life. This product candidate is the second clinical program in MacroGenics' B7-H3 franchise, which also includes enoblituzumab, an Fc-optimized antibody. B7-H3 is a member of the B7 family of molecules involved in immune regulation and is over-expressed on a wide variety of cancer cells, including cancer stem cells, as well as on the supporting tumor vasculature and underlying tissues, or stroma. Inhibition of certain members of the B7 family has been shown to have powerful anti-tumor effects in several solid tumor types. The primary mechanism of action of MGD009 is its ability to redirect T cells, via their CD3 component, to kill B7-H3-expressing cells.

In the fourth quarter of 2015, the Company initiated a Phase 1 dose-escalation study with MGD009. This study is designed to characterize the safety and tolerability of the product candidate administered every two weeks in patients with non-small cell lung, bladder and head and neck cancer, mesothelioma, melanoma, and certain other B7-H3 positive tumors. To learn

more, please visit: https://clinicaltrials.gov/ct2/show/NCT02628535.

About MacroGenics, Inc.

MacroGenics is a clinical-stage biopharmaceutical company focused on discovering and developing innovative monoclonal antibody-based therapeutics for the treatment of cancer, as well as autoimmune disorders and infectious diseases. The company generates its pipeline of product candidates from its proprietary suite of next-generation antibody-based technology platforms. The combination of MacroGenics' technology platforms and protein engineering expertise has allowed the Company to generate promising product candidates and enter into several strategic collaborations with global pharmaceutical and biotechnology companies. For more information, please see the Company's website at www.macrogenics.com. DART, MacroGenics and the MacroGenics logo are trademarks or registered trademarks of MacroGenics, Inc.

Cautionary Note on Forward-Looking Statements

Any statements in this press release about future expectations, plans and prospects for the Company, including statements about the Company's strategy, future operations, clinical development of the Company's therapeutic candidates, milestone or opt-in payments from the Company's collaborators, the Company's anticipated milestones and future expectations and plans and prospects for the Company and other statements containing the words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: the uncertainties inherent in the initiation and enrollment of future clinical trials, expectations of expanding ongoing clinical trials, availability and timing of data from ongoing clinical trials, expectations for regulatory approvals, other matters that could affect the availability or commercial potential of the Company's product candidates and other risk factors described in the Company's filings with the Securities and Exchange Commission. In addition, the forward-looking statements included in this press release represent the Company's views as of the date hereof. The Company anticipates that subsequent events and developments will cause the Company's views to change. However, while the Company may elect to update these forward-looking statements at some point in the future, the Company specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing the Company's views as of any date subsequent to the date hereof.

Jim Karrels, Senior Vice President, CFO
MacroGenics, Inc.
1-301-251-5172, info@macrogenics.com

Karen Sharma, Senior Vice President
MacDougall Biomedical Communications
1-781-235-3060, ksharma@macbiocom.com