April 19, 2016

MacroGenics Presents Data from Five Preclinical Programs at AACR Annual Meeting 2016

ROCKVILLE, Maryland, April 19, 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, today announced the presentation of preclinical data from five programs at the 2016 American Association for Cancer Research (AACR) Annual Meeting in New Orleans, Louisiana. Four of the five presented posters were from studies based on MacroGenics' Dual-Affinity Re-Targeting, or DART®, bispecific technology. MacroGenics also presented data from its preclinical anti-B7-H3 antibody-drug conjugate program within the company's B7-H3 franchise.

"MacroGenics is encouraged by the promising preclinical data from these five programs," said Scott Koenig, M.D., Ph.D., President and CEO of MacroGenics. "With a focus on developing innovative medicines for patients in need, our company is bolstered by early-stage, positive preliminary data from these programs targeting various cancers. With eight molecules in clinical development across immuno-oncology and autoimmune disorders today and plans to expand into infectious diseases, the MacroGenics team is making progress towards our mission of bringing new breakthrough treatments to patients suffering from a range of diseases."

MacroGenics AACR 2016 Poster Presentations

Each of MacroGenics' poster presentations described below may be accessed under "Events & Presentations" in the Investors section of the company's website at http://ir.macrogenics.com/events.cfm.

- **B7-H3 Franchise:** As previously reported, MacroGenics is developing a portfolio of therapeutics that target B7-H3, a member of the B7 family of molecules involved in immune regulation, through complementary mechanisms of action that also take advantage of the antigen's broad expression across multiple solid tumor types. In the presentation titled "Anti-B7-H3 antibody-drug conjugates as potential therapeutics for solid cancer," MacroGenics evaluated the therapeutic potential of anti-B7-H3 antibody-drug conjugates (ADCs) in multiple in vitro and in vivo tumor cell line cases representing human cancer types that overexpress B7-H3. Several anti-B7-H3 ADCs exhibited specific, dose-dependent cytotoxicity toward B7-H3-positive tumor cell lines in vitro and in vivo, including breast, lung, ovarian, pancreatic, and prostate cancer lines as well as melanoma. The study results show the potential of B7-H3-targeted ADCs for the treatment of solid cancers that express B7-H3.

- **MGD013:** MGD013, a compound developed using MacroGenics' DART platform, is a single agent designed to block PD-1 and LAG-3, two immune checkpoint molecules that are co-expressed on T cells. Published work in nonclinical models has shown that combining LAG-3 blockade with PD-1 checkpoint inhibition can further boost the anti-tumor response observed with anti-PD-1 alone. In the presentation titled "MGD013, a bispecific PD-1 x LAG-3 Dual-Affinity Re-Targeting (DART) protein with T-cell immunomodulatory activity for cancer treatment," MacroGenics demonstrated that MGD013 has the potential to promote anti-tumor activity by simultaneously blocking both PD-1 and LAG-3. In the study, monoclonal antibodies (mAbs) against PD-1 and LAG-3 were engineered into MGD013, an Fc-bearing DART molecule. MGD013 was shown to block PD-1/PD-L1, PD-1/PD-L2 and LAG-3/MHC-II interactions to levels comparable to those observed with its independent constituents. Furthermore, MGD013 enhanced T-cell response (upon antigen re-challenge), as measured by cytokine secretion, to an extent greater extent than that observed with the independent blockade of each pathway or even when both pathways were inhibited with a combination of anti-PD-1 and anti-LAG-3 mAbs. The results of the study helped support further clinical development of MGD013. MacroGenics plans to submit an Investigational New Drug (IND) application for MGD013 in 2017.

- **ROR1 x CD3 DART**: The receptor tyrosine kinase-like orphan receptor 1, ROR1, is overexpressed in chronic lymphocytic leukemia and a subset of solid tumors, including lung, breast, ovarian, colon, sarcoma and pancreatic cancers. In the presentation titled "Development of a humanized ROR1 x CD3 bispecific DART molecule for the treatment of solid and liquid tumors," MacroGenics demonstrated that a ROR1 x CD3 DART molecule was able to kill ROR1-expressing target cells in vitro. T-cell activation and cytokine release was strictly mediated upon target antigen engagement and not observed with leukocytes alone. The DART molecule also demonstrated anti-tumor activity in vivo, with high response rates in several mouse tumor xenograft models. The promising in vitro and in vivo study results support continued research on the use of ROR1 x CD3 DART molecules as a potential treatment option for

cancer patients.

- **IL13Rα2 x CD3 DART**: IL13Rα2 is a membrane-bound protein that has been found to be expressed in malignant tumors. "Development of an IL13Ralpha2 x CD3 bispecific DART protein for redirected T-cell killing of solid tumors" introduced the IL13Rα2 x CD3 DART molecule that re-targets cytotoxic T cells through its CD3 arm to IL13Rα2 on tumors cells, resulting in the killing of tumor cells. After selection from a range of IL13Rα2 x CD3 DART prototypes, a lead candidate was selected and converted into a humanized, Fc-bearing DART molecule that mediated potent redirected T-cell killing of tumor cells. The study further showed that administration of the Fc-bearing IL13Rα2 x CD3 DART molecule mediated potent anti-tumor activity in vivo in mice reconstituted with human immune cells. Further studies are underway to characterize the molecule as a potential development candidate for the treatment of IL13Rα2-positive cancers.

- **EphA2 x CD3 DART**: MacroGenics has selected EphA2, a receptor tyrosine kinase that plays a critical role in cancer progression, as a potential therapeutic target for a new DART molecule designed to co-engage cytotoxic T cells (via their CD3 component) with EphA2-expressing tumor cells. In the presentation titled "Evaluation of EphA2 as a therapeutic target for redirected T-cell killing by DART bispecific molecules," MacroGenics researchers identified seven anti-EphA2 mAbs recognizing independent epitopes that were engineered into EphA2 x CD3 DART molecules showing a range of potency in redirecting T cells to kill EphA2-expressing target cells. A lead EphA2 x CD3 DART molecule was selected based on potency, engineered into an Fc-bearing DART molecule and shown to mediate target dependent anti-tumor activity in vitro and in vivo. MacroGenics has been encouraged by the results of this study and believes further preclinical assessment studies of EphA2 x CD3 DART molecules are warranted.

Background on DART Platform

MacroGenics' DART platform enables the targeting of multiple antigens or cells by using a single molecule with an antibody-like structure. DART molecules can be configured for the potential treatment of cancer, autoimmune disorders and infectious diseases. These DART molecules can be tailored for either short or prolonged pharmacokinetics and have demonstrated good stability and attractive manufacturability. Six DART molecules, including programs being developed by MacroGenics and its collaborators, are currently being evaluated in Phase 1 clinical studies.

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.

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