March 3, 2014

Genocea Biosciences Announces Collaboration to Characterize T Cell Responses to Cancer Antigens

-- Joint Effort Extends Application of Company's ATLAS™ Platform into Cancer with Initial Focus on Melanoma --

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Genocea Biosciences, Inc. (NASDAQ:GNCA), a company pioneering novel T cell vaccines and immunotherapies, today announced a joint research collaboration with Dana-Farber Cancer Institute and Harvard Medical School to characterize anti-tumor T cell responses in melanoma patients. This collaboration extends the use of the company's proprietary ATLAS™ platform for the rapid discovery of T cell antigens to cancer immunotherapy approaches.

"ATLAS™ has proven its value for the rapid discovery of promising vaccine antigens in the field of infectious diseases, enablir Genocea to take four programs in three infectious diseases from start to animal proof-of-concept in less than three years," said Chip Clark, president and chief executive officer of Genocea. "We believe this collaboration speaks to the promise of our ATLAS™ technology to discover a subset of antigens relevant to positive anti-tumor T cell responses in melanoma patients, which might form the basis for an effective immunotherapeutic. In addition, the information gained through this effort should provide useful data for patient-stratification in clinical trials, as well as potential applications for monitoring patients post-treatment."

The collaboration, sponsored by Ludwig Trust, includes Darren Higgins, Ph.D., in the Department of Microbiology and Immunobiology at Harvard Medical School, who originally devised the ATLAS™ technology, and the team of Stephen Hodi, MD and Glenn Dranoff, MD at the Dana-Farber Cancer Institute. Drs. Hodi and Dranoff have investigated the biologic and anti-tumor activities of anti-CTLA-4 (anti- cytotoxic T lymphocyte-associated antigen-4) antibody therapy, which has been approved by the U.S. Food and Drug Administration (FDA) for the treatment of advanced melanoma. This collaboration with Genocea is aimed at learning more about the immune responses stimulated with this treatment. In a Phase 1 study of this antibody therapy, certain subjects responded very favorably, while investigators did not see a clinically meaningful response with other subjects.

Dr. Higgins' team will create a cancer antigen protein library for screening in ATLAS™. The Dana-Farber team will obtain peripheral blood mononuclear cells (PBMC) from a subset of positive responders from the Phase 1 trial participants treated with the anti-CTLA-4 antibody. Genocea will then use the ATLAS™ platform to screen the protein library against the patient-derived immune cells to identify a small number of highly relevant T-cell antigens for further testing.

About the ATLAS™ (AnTigen Lead Acquisition System)

Genocea's vaccine programs are built around the ATLAS™ platform for the rapid discovery of T cell antigens. T cell antigens, specifically antigens that stimulate $CD4^+$ and $CD8^+$ T cells, are critical to generating disease-specific cellular immune response and long-term T cell memory. At the core of ATLAS™ is a high throughput screening process that mimics the natural mammalian immune response to protein antigens. Critically, Genocea screens all of a pathogen or cancer-type's proteins against T cells from human donors with diverse HLA types who have generated a potentially protective or ineffective immune response after exposure to a target pathogen or cancer antigen. As a result, ATLAS™ winnows what can be as many as several thousand protein antigens to a small number that correlate with immunity.

About Genocea Biosciences, Inc.

Genocea is harnessing the power of T cell immunity to develop the next generation of vaccines and immunotherapies. T cells are increasingly recognized as a critical element of protective immune responses to a wide range of diseases, but are difficult to target using traditional discovery methods. Genocea is able to identify protective T cell antigens in humans exposed to a pathogen using ATLAS™, its proprietary technology platform, potentially enabling vaccines against pathogens for which vaccine solutions do not exist or are sub-optimal. Genocea's pipeline of novel clinical stage T cell enabled vaccines includes GEN-003 for HSV-2 therapy, GEN-004 to prevent infections caused by pneumococcus, and earlier-stage programs in chlamydia, HSV-2 prophylaxis and malaria. For more information, please visit the company's website at www.genocea.com.

Forward Looking Statement

Statements herein relating to future business performance, conditions or strategies and other financial and business matters, including expectations regarding clinical developments, are forward-looking statements within the meaning of the Private

Securities Litigation Reform Act. Genocea cautions that these forward-looking statements are subject to numerous assumptions, risks and uncertainties, which change over time. Factors that may cause actual results to differ materially from the results discussed in the forward-looking statements or historical experience include risks and uncertainties, including Genocea's ability to progress any product candidates in preclinical or clinical trials; the scope, rate and progress of its preclinical studies and clinical trials and other research and development activities; clinical trial results; current results may not be predictive of future results; even if the data from preclinical studies or clinical trials is positive, the product may not prove to be safe and efficacious; Genocea's ability to enter into future collaborations with industry partners and the government and the terms, timing and success of any such collaboration; the cost of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; our ability to obtain rights to technology; competition for clinical resources and patient enrollment from drug candidates in development by other companies with greater resources and visibility; our ability to obtain adequate financing in the future through product licensing, co-promotional arrangements, public or private equity or debt financing or otherwise; general business conditions; competition; business abilities and judgment of personnel; and the availability of qualified personnel. Further information on the factors and risks that could affect Genocea's business, financial conditions and results of operations is contained in Genocea's filings with the U.S. Securities and Exchange Commission, which are available at www.sec.gov. These forward-looking statements speak only as of the date of this press release and Genocea assumes no duty to update forward-looking statements.

For media:
Linnden Communications
Michelle Linn
O: 508-362-3087
M: 774-696-3803
Michelle@linndencom.com
or
For investors:
Genocea Biosciences
Bob Farrell, 617-674-8261
bob.farrell@genocea.com

Source: Genocea Biosciences, Inc.