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Genocea Presents New Data Demonstrating the Power and Versatility of its ATLAS™ Antigen Identification Platform at SITC 2017

- ATLAS continues to demonstrate superiority to in silico *methods of neoantigen identification in multiple tumor types -*
- ATLAS also identifies unique tumor-associated antigen response signatures in patients with lung and colorectal cancers -

CAMBRIDGE, Mass., Nov. 07, 2017 (GLOBE NEWSWIRE) -- Genocea Biosciences, Inc. (NASDAQ:GNCA), a biopharmaceutical company developing neoantigen cancer vaccines, today provided details on its three poster presentations at the upcoming Society for Immunotherapy of Cancer (SITC) 32nd Annual Meeting taking place November 8 to 12, 2017 at the Gaylord National Hotel & Convention Center in National Harbor, Maryland. The posters, all of which will be presented on Saturday, November 11, highlight the power of Genocea's proprietary antigen identification system ATLAS™ to identify and profile CD4+ and CD8+ T cell responses to neoantigens and tumor-associated antigens (TAAs) for potential use in cancer vaccines and as non-invasive biomarkers.

"These data demonstrate the versatility of ATLAS and support our use of the technology in the development of next-generation neoantigen cancer vaccines," said Jessica Baker Flechtner, Ph.D., chief scientific officer at Genocea. "With our first personalized vaccine candidate expected to enter the clinic in 2018, we are excited that ATLAS continues to demonstrate superiority to in silico methods of neoantigen identification and believe that our ability to identify true neoantigens will be key to developing more effective immunotherapies. We are also eager to further explore, through partnerships, the potential of ATLAS in the identification of novel tumor-associated antigens for biomarkers and common antigen cancer vaccines."

Poster #430: ***"Neoantigen identification using ATLAS™ across multiple tumor types highlights limitations of prediction algorithms,"*** will be presented during the session on Personalized Vaccines and Technologies/Personalized Medicine. Highlights include:

- ATLAS identified true neoantigens of CD8+ and CD4+ T cells, independent of patient HLA type, across a broad cohort of patients with different tumor types, including those with high or low mutational burden
- Cancer types studied include renal cell carcinoma, and prostate, colorectal, pancreatic, and non-small cell lung cancers
- Only 4% of ATLAS-identified neoantigens were predicted by NetMHCpan (a widely used in silico tool for neoantigen prediction)
- 88% of neoantigens that were predicted by NetMHCpan and confirmed by ATLAS were inhibitory and thus questionable for inclusion in cancer vaccines
- **The identification of activating and inhibitory neoantigens for CD8+ and CD4+ T cells should better enable neoantigen vaccines to stimulate a protective immune response**

Poster #8: ***"T cell response profiling in colorectal carcinoma patients reveals an enrichment in responses to specific tumor-associated antigens,"*** will be presented during the session on Biomarkers and Immune Monitoring. Highlights include:

- Tumor stage at time of diagnosis is considered to be the most important predictor of survival in colorectal cancer (CRC) patients; tumor-associated antigen (TAA)-specific responses in peripheral blood can be detected using ATLAS
- ATLAS identified T cell responses to a subset of TAAs in individuals with pre-malignant adenomatous polyps that were similar to those in CRC patients and distinguishable from healthy individuals
- Three TAAs that were most frequently identified in this cohort of patients were not aligned with those previously investigated as therapeutic vaccines
- **Data support investigation of this new set of TAAs as antigens for a novel vaccine to complement personalized cancer vaccine approaches**
- **Data also support potential development of a non-invasive blood-based assay for early detection and diagnosis of CRC**

Poster #28 entitled ***"Profiling of T cell responses to tumor-associated antigens in lung cancer patients treated with***

checkpoint inhibitors," will be presented during the session on Biomarkers and Immune Monitoring. Highlights include:

- ATLAS identified both stimulatory and inhibitory CD8+ and CD4+ T cell responses to TAAs in lung cancer patients treated with checkpoint inhibitors
- ATLAS confirmed two TAAs that elicited more frequent responses than NY-ESO-1, MUC1, and MAGEA3, three TAAs that have been studied previously in clinical trials as vaccine antigens for lung cancer patients
- **Data support investigation of these TAAs as antigens to include in a common-antigen immunotherapy for lung cancer**
- T cell response profiles associating with effective treatment with checkpoint blockade are under investigation

About Genocea Biosciences, Inc.
Genocea is harnessing the power of T cell immunity to develop potentially life-changing vaccines and immunotherapies. While traditional immunotherapy discovery methods have largely used predictive methods to propose T cell targets, or antigens, Genocea has developed ATLAS™, its proprietary technology platform, to identify clinically relevant antigens of T cells based on actual human immune responses. Genocea is using ATLAS in immuno-oncology applications to develop neoantigen cancer vaccines while also exploring partnership opportunities for general cancer vaccines and a vaccine targeting cancers caused by Epstein-Barr Virus. Genocea expects to begin clinical development of its first neoantigen cancer vaccine, GEN-009, in 2018. Genocea is exploring strategic alternatives for GEN-003, its Phase 3-ready immunotherapy candidate for the treatment of genital herpes. For more information, please visit www.genocea.com.

Forward-Looking Statements
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 that 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 ability of ATLAS to identify promising oncology vaccine and immunotherapy product candidates; the scope, rate and progress of its preclinical studies and clinical trials and other research and development activities; anticipated clinical trial results; anticipated timing for initiation of new clinical trials; current results may not be predictive of future results; even if the data from preclinical studies or clinical trials is positive, regulatory authorities may require additional studies for approval and 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; risks associated with the manufacture and supply of clinical and commercial product; the cost of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; Genocea's 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; the rate of cash utilized by Genocea in its business and the period for which existing cash will be able to fund such operation; Genocea's ability to obtain adequate financing in the future to continue its clinical programs 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; the availability of qualified personnel and other factors set forth under "Risk Factors" in Genocea's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2017 and other filings with the Securities and Exchange Commission (the "SEC"). 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 SEC, 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.

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