April 11, 2017

Genocea Awarded World Vaccine Congress 2017 Industry Excellence Award for Best Therapeutic Vaccine for GEN-003 for Genital Herpes

Company highlights its T cell-Directed Genital Herpes and Neoantigen Cancer Vaccine Candidates in two oral presentations

CAMBRIDGE, Mass., April 11, 2017 (GLOBE NEWSWIRE) -- Genocea Biosciences, Inc. (NASDAQ:GNCA), a biopharmaceutical company developing T cell-directed vaccines and immunotherapies, today announced that it has been awarded the World Vaccine Congress 2017 Industry Excellence award for best therapeutic vaccine for GEN-003, an immunotherapy to treat genital herpes, which is expected to be Phase 3 ready by the end of 2017.

In addition, the company is giving two oral presentations and participating on a panel at the congress, which is taking place from April 10-12 in Washington DC. The two presentations highlight the success to date of Genocea's ATLAS™ technology, a proprietary T cell immune response screening platform designed to identify clinically relevant T cell antigens. Using ATLAS, Genocea is building a pipeline of candidates that includes GEN-003 and GEN-009, a neoantigen cancer vaccine, for which the company expects to file an Investigational New Drug (IND) application by the end of 2017.

- ***"Developing an HSV vaccine to control clinical recurrences and viral shedding"***
  Tuesday, April 11 at 12:10 pm ET
  Thomas Heineman, M.D., Ph.D., Genocea's Vice President of Clinical Development
  In his presentation, Dr. Heineman will provide a comprehensive overview of GEN-003: its rational design and positive clinical results to date.

- ***"Comprehensive profiling of T cell responses to putative neoantigens reveals smarter targets for cancer immunotherapy"***
  Wednesday, April 12 at 12:00 pm ET
  Jessica Baker Flechtner, Ph.D., Genocea's Chief Scientific Officer
  In her presentation, Dr. Flechtner will provide an overview of the company's ATLAS technology: its advantages over predictive methods of antigen identification, and how Genocea is using ATLAS to develop neoantigen cancer vaccines and to help identify patients most likely to benefit from checkpoint blockade therapies.

In addition, Dr. Flechtner will be participating on the following panel:

- ***"For vaccines that are being paired with adjuvant or checkpoint blockade therapies, are we working with the right antigenic targets?"***
  Tuesday, April 11 at 5:40 pm ET

About GEN-003
GEN-003 is an investigational T cell-directed immunotherapy designed to elicit both a T cell and B cell (antibody) immune response in patients with genital herpes. In multiple Phase 2 randomized, placebo-controlled clinical trials, GEN-003 has demonstrated the ability to statistically significantly reduce the clinical signs of genital herpes and the rate of viral shedding. The immunotherapy was designed using Genocea's ATLAS™ platform, which profiled the comprehensive spectrum of actual T cell responses mounted by humans in response to HSV-2 to identify antigen targets that drive protective T cell responses to the virus. If successfully developed and marketed, GEN-003 would be the first new therapy in more than 20 years to treat the large and unsatisfied global genital herpes patient population.

About ATLAS™ and GEN-009
ATLAS is a first-of-its-kind proprietary antigen identification screening platform designed to find antigens associated with protective T cell responses. ATLAS provides a panoramic and comprehensive perspective of actual human T cell responses to every potential antigen from a pathogen or tumor. While traditional immunotherapy discovery methods have largely used predictive methods to propose T cell targets, or antigens, Genocea has successfully developed ATLAS to identify clinically relevant antigens of T cells, potentially increasing the likelihood of successful clinical development of vaccines and immunotherapies. Genocea used ATLAS to identify the target antigens in its lead clinical candidate, GEN-003, an investigational immunotherapy to treat genital herpes, and is currently using ATLAS to develop its lead immuno-oncology candidate GEN-009, a neoantigen cancer vaccine. Genocea is also using ATLAS to comprehensively profile responders

and non-responders to checkpoint blockade therapies with the goal of improving patient selection and outcomes for clinical practice.

About Genocea Biosciences, Inc.
Genocea is harnessing the power of T cell immunity to develop life-changing vaccines and immunotherapies. While traditional immunotherapy discovery methods have largely used predictive methods to propose T cell targets, or antigens, Genocea has successfully developed ATLAS™, its proprietary technology platform, to identify clinically relevant antigens of T cells based on actual human immune responses. Genocea used ATLAS to identify the antigens in its lead clinical candidate, GEN-003, an investigational immunotherapy to treat genital herpes, and is currently using ATLAS in immuno-oncology applications to develop neoantigen cancer vaccines and to identify T cell response signatures of cancer patients treated with checkpoint blockade therapies to potentially improve clinical practice. Genocea expects GEN-003 to be ready to begin Phase 3 development and to file an IND for its neoantigen cancer vaccine candidate GEN-009 by the end of 2017. For more information, please visit the company's website at 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, 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 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; 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 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 Annual Report on Form 10-K for the fiscal year ended December 31, 2016 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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