



Genocea to Present Novel Preclinical Inhibigen™ Data at AACR Annual Meeting 2021

April 10, 2021

Pro-tumor effects detected as early as four days after Inhibigen administration

Insights into Inhibigen biology may yield new therapeutic targets to address immunotherapy resistance

CAMBRIDGE, Mass., April 10, 2021 (GLOBE NEWSWIRE) -- [Genocea Biosciences, Inc.](#) (NASDAQ: GNCA), a biopharmaceutical company developing next-generation neoantigen immunotherapies, today presented preclinical data that offers new insights into Inhibigen™-associated responses and continues to underscore the detrimental impact of their inclusion in cancer immunotherapies at the American Association for Cancer Research (AACR) Annual Meeting 2021 from April 10-15. The findings – powered by Genocea's proprietary ATLAS™ platform – further validate previous research [presented at](#) SITC 2020 and [published in](#) *Cancer Discovery*, together revealing that the presence of an Inhibigen (antigen uniquely identifiable by ATLAS as dampening anti-tumor immune responses) in an otherwise protective immunotherapy can completely reverse the therapy's intended anti-tumor responses.

The new data show that therapeutic vaccination of tumor-bearing mice with a single Inhibigen caused their tumors to hyperprogress, in contrast to a vaccine containing stimulatory antigens that protected them against tumor growth. The combination of this single Inhibigen with the otherwise-protective vaccine abrogated vaccine efficacy and returned tumor growth to levels of unvaccinated mice. The Inhibigen-associated effects included dampening of T cell immune responses as early as four days after a single dose, and a reversal of the infiltration of both lymphoid and myeloid populations into the tumor microenvironment. These data suggest that Inhibigen-specific responses not only dampen systemic immunity, but also revert tumor microenvironments to an immune-cold state – a feature of early-stage tumor growth.

"Our data add to a growing body of preclinical and clinical evidence confirming that Inhibigens are not innocent bystanders, but rather they can reverse the beneficial effects of cancer immunotherapies," said Hanna Starobinets, a scientist at Genocea and lead presenter at the AACR meeting. "While Genocea continues to exclude Inhibigens from its immunotherapy candidates, ongoing studies aim to further allow us to understand and overcome immunotherapy resistance."

Genocea previously demonstrated that Inhibigen vaccination could stifle immune responses to other antigens co-formulated in a vaccine, and that the effect could not be reversed through combination therapy with immune checkpoint inhibitors (ICI). Moreover, [early data](#) from ATLAS profiling of T cell responses in patients with cancer showed that the relative proportion of Inhibigen- and neoantigen-specific responses prior to treatment appeared to predict clinical efficacy of subsequent ICI therapy.

"While we avoid Inhibigens in our current immunotherapy candidates, our preclinical work is focused on understanding the mechanisms of Inhibigen-associated immune suppression so that we may ultimately develop new treatments that can revert the phenotype in the context of immuno-oncology and perhaps even drive the phenotype in other contexts, such as autoimmune diseases," said Jessica Baker Flechtner, Chief Scientific Officer of Genocea. "This important nuance – the possibility for Inhibigens to be used for therapeutic benefit – is one that we look forward to exploring further as we continue to gain insights into their underlying biology and function."

AACR POSTER SESSION CATEGORY: Inflammation, Immunity, and Cancer

TRACK: Immunology, Clinical Research Excluding Trials

[Poster 1762](#)

Title: *Inhibigens™ subvert otherwise-efficacious cancer vaccines and immunotherapies in conjunction with alterations in the tumor microenvironment*

Presenter: Hanna Starobinets, Ph.D., Genocea Biosciences, Cambridge, MA

Date: April 10, 2021

Time: 8:30 a.m. – 11:59 p.m. EDT

About Genocea Biosciences, Inc.

Genocea's mission is to identify the right tumor targets to develop life-changing immunotherapies for people suffering from cancer. Our proprietary ATLAS™ platform comprehensively profiles each patient's T cell responses to potential targets, or antigens, on that patient's tumor. ATLAS zeroes in on both antigens that activate anti-tumor T cell responses and inhibitory antigens, Inhibigens™, that drive pro-tumor immune responses. We are advancing two ATLAS-enabled programs: GEN-009, our neoantigen vaccine for which we are conducting a Phase 1/2a clinical trial and GEN-011, our adoptive T cell therapy using neoantigen-targeted peripheral cells for which we are commencing a Phase 1/2a clinical trial. In addition to our two clinical programs, we are conducting research in several areas where we believe ATLAS could be a key tool in identifying meaningful therapies. To learn more, please visit <https://www.genocea.com>.

Forward-Looking Statements

This press release includes forward-looking statements related to GEN-009, GEN-011 and research updates within the meaning of the Private Securities Litigation Reform Act. Such forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statements. Genocea cautions that these forward-looking statements are subject to numerous assumptions, risks and uncertainties that change over time. Applicable risks and uncertainties include those identified under the heading "Risk Factors" included in Genocea's Annual Report on Form 10-K for the year ended December 31, 2020 and any subsequent SEC filings. These forward-looking statements speak only as of the date of this press release and Genocea assumes no duty to update forward-looking statements, except as may be required by law.

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