Genocea Provides Fourth Quarter 2020 Corporate Update

February 11, 2021

GEN-011 and GEN-009 clinical trials continue to advance

***ATLAS™ stimulatory antigen and inhibitory antigen (Inhibigen™) identification profiled in* Cancer Discovery**

Announcing SARS-CoV-2 T cell antigen discovery program

Conference call today at 8:30 a.m. E.T.

CAMBRIDGE, Mass., Feb. 11, 2021 (GLOBE NEWSWIRE) -- Genocea Biosciences, Inc. (NASDAQ: GNCA), a biopharmaceutical company developing next-generation neoantigen immunotherapies, today provided a business update for the fourth quarter ended December 31, 2020 and other recent significant developments.

"We are extremely pleased to make progress across multiple fronts by using ATLAS' unique ability to find the most relevant targets of T cell responses," said Chip Clark, Genocea President and Chief Executive Officer. "As we advance GEN-009 and GEN-011, our scientific team continues to refine and explore the implications of our pioneering antigen discovery work in multiple disease settings. Included in this is the work we have underway to identify antigens of T cell responses to SARS-CoV-2 (COVID-19), which may prove pivotal to stemming the course of this deadly virus. We are looking forward to continuing this momentum in 2021."

Clinical updates

GEN-011 Phase 1/2a clinical trial (TITAN trial)

- GEN-011 is a neoantigen-targeted peripheral T cell therapy (NPT therapy) in development to treat checkpoint inhibitor-refractory patients. Our phase 1/2a study, the TITAN trial, is designed to explore safety, biomarkers of activity and anti-tumor efficacy. Genocea has initiated the first two of multiple planned clinical sites and is accruing patients. The company expects to have initial efficacy data from a patient subset late in the fourth quarter of 2021 or the first quarter of 2022.

GEN-009 Phase 1/2a clinical trial

- At the 2020 Society for Immunotherapy of Cancer (SITC) annual meeting in November, the Company shared expanded clinical and immunogenicity findings for GEN-009, its adjuvanted peptide neoantigen vaccine. Of the nine CPI-sensitive patients, three patients experienced a novel reduction in tumor volume and achieved independent RECIST responses post-GEN-009 dosing, including 2 PRs and 1 CR. Five additional CPI-sensitive patients have shown disease control post-vaccination for up to 11 months. Within the CPI-resistant population, five of seven patients appear to have stabilized disease lasting up to seven months. GEN-009 elicited strong anti-tumor $CD4^+$ and $CD8^+$ T cell responses. Genocea expects to provide additional clinical and immunogenicity data from these patients in Q2.

Research updates

Publication in Cancer Discovery

- In January, Genocea's paper, "An empirical antigen selection method identifies neoantigens that either elicit broad anti-tumor T cell responses or drive tumor growth," was published in Cancer Discovery. The paper confirms that ATLAS zeroes in on tumor mutations that are either neoantigens that activate anti-tumor responses or inhibitory antigens (Inhibigens) that are targets of pro-tumor responses, in both CD8+ (killer) and CD4+ (helper) T cells. This breakthrough potentially improves neoantigen immunotherapies by ensuring they both target the right neoantigens and exclude Inhibigens.

SARS-CoV-2 T cell antigen discovery program

- Genocea has a research program to identify conserved antigens of protective T cell responses to SARS-CoV-2. This builds on earlier Genocea work in infectious disease, in which it demonstrated – across multiple pathogens – that novel antigens of protective T cell responses are often not immunodominant antigens of antibody responses. If true with SARS-CoV-2, this would suggest that vaccines focusing on the Spike protein may have limited long-term utility against emergent hyper-virulent strains. As part of this program, Genocea has entered into a collaboration with the University of Massachusetts Medical School's Dr. Robert Finberg, Distinguished Professor of Medicine and leading infectious diseases expert. Pairing ATLAS with Dr. Finberg's expertise in infectious diseases may enable a better understanding of the role of T cells, including responses to Inhibigens, in the severity and duration of symptoms.

Collaboration with the University of Minnesota

- Genocea and the University of Minnesota's Dr. Ingunn Stromnes, an expert on immuno-oncology and T cell engineering, entered into a collaboration to explore Inhibigen biology and develop TCRs targeting Genocea's proprietary shared neoantigens.

Other business updates
Strengthened executive leadership team

- Genocea appointed Raymond D. Stapleton, Jr., Ph.D. as Executive Vice President of Pharmaceutical Sciences and Manufacturing. Ray brings 20+ years of industry experience having led technical, quality and manufacturing operations at commercial and clinical stage biopharmaceutical companies.

Financial and other updates
Fourth quarter 2020 financial results

- Cash position: As of December 31, 2020, cash and cash equivalents were $79.8 million compared to $40.1 million as of December 31, 2019.
- Research and Development (R&D) expenses: R&D expenses were $7.8 million for the quarter ended December 31, 2020, compared to $6.8 million for the same period in 2019.
- General and Administrative (G&A) expenses: G&A expenses were $3.9 million for the quarter ended December 31, 2020, compared to $3.0 million for the same period in 2019.
- Net loss: Net loss was $15.0 million for the quarter ended December 31, 2020, compared to $9.4 million for the same period in 2019.

Guidance

- Genocea's operating plan extends its cash runway to the end of 2022.

February investor conferences

- Genocea will participate in the LifeSci Advisors Precision Oncology Day on Wednesday, February 17 at 11:30 a.m. ET. Genocea will also participate in the SVB Leerink Global Healthcare conference on Thursday, February 25 at 10 a.m. ET. Details of the presentations can be found at https://ir.genocea.com/events-presentations.

Conference Call
Genocea will host a conference call and webcast today at 8:30 a.m. E.T. Interested participants may access the conference call by dialing (844) 826-0619 (domestic) or (315) 625-6883 (international) and referring to conference ID number 5767897. To join the live webcast, please visit the presentation page of the investor relations section of the Genocea website at https://ir.genocea.com/events-presentations. A webcast replay of the conference call will be available on the Genocea website beginning approximately two hours after the event and will be archived for 90 days.

About Genocea Biosciences, Inc.
Genocea's mission is to conquer cancer by developing personalized cancer immunotherapies in multiple tumor types. Our proprietary ATLAS™ platform comprehensively profiles each patient's T cell responses to potential targets, or antigens, on that patient's tumor. ATLAS uniquely 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, 2019 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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(Tables to follow)

GENOCEA BIOSCIENCES, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)
(In thousands)

	December 31, 2020	December 31, 2019
Cash and cash equivalents	$ 79,769	$ 40,127
Property and equipment, net	5,123	2,617
Right of use assets	9,308	6,306
Other assets	4,293	3,561
Total assets	$ 98,493	$ 52,611
Accounts payable and accrued expenses	$ 7,878	$ 5,164
Deferred revenue	1,641	—
Debt, current and long-term	13,862	13,407
Warrant liabilities	56,118	2,486
Lease liabilities	10,012	6,512
Total liabilities	89,511	27,569
Stockholders' equity	8,982	25,042
Total liabilities and stockholders' equity	$ 98,493	$ 52,611

GENOCEA BIOSCIENCES, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (UNAUDITED)
(In thousands, except per share data)

	Three Months Ended December 31,		Year Ended December 31,	
	2020	2019	2020	2019
License revenue	$ —	$ —	$ 1,359	$ —
Operating expenses:				
Research and development	7,837	6,817	33,960	26,952
General and administrative	3,877	3,045	14,388	12,037
Total operating expenses	11,714	9,862	48,348	38,989
Loss from operations	(11,714)	(9,862)	(46,989)	(38,989)
Other income (expense)	(3,271)	506	3,275	39
Net loss	$ (14,985)	$ (9,356)	$ (43,714)	$ (38,950)
Net loss per share:				
Basic	$ (0.23)	$ (0.34)	$ (0.98)	$ (1.89)
Diluted	$ (0.18)	$ (0.34)	$ (1.11)	$ (1.89)
Weighted-average number of shares used in computing net loss per share:				
Basic	64,625	27,620	44,436	20,644
Diluted	66,954	27,620	46,553	20,644