November 6, 2014

Genocea Reports Third Quarter 2014 Financial Results

Novel product candidates for genital herpes and pneumococcus both advanced into Phase 2 clinical trials

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Genocea Biosciences, Inc. (NASDAQ:GNCA), a company developing T cell-directed vaccines and immunotherapies, today reported recent corporate highlights and financial results for the third quarter ended September 30, 2014.

"During the third quarter we continued to advance our novel vaccine and immunotherapy pipeline. I'm particularly pleased with enrollment in the Phase 2 dose optimization trial for our genital herpes program, GEN-003, reflecting both strong patient and physician motivation and our execution capabilities. We also initiated a Phase 2 trial for GEN-004 for pneumococcus and presented important data from both programs at major medical meetings," said Chip Clark, president and chief executive officer of Genocea. "These achievements reinforce our progress toward bringing disruptive medicines to the large genital herpes and pneumococcal markets and reaffirms that our ATLAS™ discovery platform rapidly advances novel products into development and towards patients and physicians who need them."

Recent Business Highlights

GEN-003 immunotherapy for genital herpes

- **Presented final GEN-003 Phase 1/2a clinical data at IDWeek 2014 in Philadelphia in October:** Final results expanded on the top-line results announced in July and included the 12 month efficacy, safety, and immunogenicity findings of the Phase 1/2a study of GEN-003, Genocea's first-in-class T cell-directed immunotherapy for the treatment of genital herpes. At 12 months after the final dose, the mean reduction in the genital lesion rate was 42 percent below baseline for the 30 microgram dose group. GEN-003 also elicited T cell, IgG, and neutralizing antibody responses that remained significantly above baseline for 12 months. GEN-003 is the only immunotherapy for genital herpes to demonstrate a reduction in the signs of clinical disease as measured by genital lesion rates. In July, Genocea initiated a Phase 2 study to determine the optimal dose for future trials.
- **Announced the publication of a paper on Genocea's genital herpes antigen discovery in *Virology* in September:** The peer-reviewed journal *Virology* published "Identification of novel virus-specific antigens by $CD4^+$ and $CD8^+$ T cells from asymptomatic HSV-2 seropositive and seronegative donors" which described how Genocea used its ATLAS™ platform to identify multiple antigens that are associated with naturally-induced protective $CD4^+$ and $CD8^+$ T cell responses to herpes simplex virus-2, enabling both the design of GEN-003 and presenting possible additional targets for the development of next generation immunotherapies against genital herpes.

GEN-004 universal vaccine for the prevention of pneumococcal infections

- **Initiated GEN-004 Phase 2a human challenge study in September**: This trial will evaluate the effect of GEN-004 on the frequency, magnitude and duration of colonization by pneumococcus in the nasopharynx of healthy adults. As colonization is known to be the necessary precursor to infection by pneumococcus, this study could affirm the potential for GEN-004 to control infections caused by pneumococcus.
- **Presented GEN-004 Phase 1 clinical data in a poster at the 54th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) in Washington, DC. in September**: Results reiterated the top-line results announced in June which showed that GEN-004 met its safety, tolerability and immunogenicity goals, including increases in the blood of T helper 17 (T_H17) cells, a rare cell type that provides immunity at epithelial and mucosal surfaces. GEN-004 was also found to be safe and well tolerated at all doses, with no serious adverse events related to the vaccine.

Other Highlights

- **Received $1.2M grant for malaria vaccine discovery from the Bill & Melinda Gates Foundation in September:** The grant extends Genocea's existing malaria collaboration with the foundation through 2015 and supports comprehensive screening of the malaria proteome to identify targets of protective T cell responses.
- **Appointed Kenneth Bate to Board of Directors in September**: Kenneth Bate will serve as chairman of the

company's Compensation committee and a member of the Audit committee. He is currently chairman of the board of Cubist Pharmaceuticals and is a director of BioMarin Pharmaceuticals, AVEO Pharmaceuticals and Catabasis Pharmaceuticals. Mr. Bate previously served as president and chief executive officer of Archemix Corp. and NitroMed Inc., chief financial officer of Millennium Pharmaceuticals Inc. and Biogen Inc., and co-founded JSB Partners LLC.

Third Quarter 2014 Financial Results & Financial Guidance

- **Cash Position:** Cash, cash equivalents and marketable securities as of September 30, 2014 were $52.2 million, compared to $59.2 million as of June 30, 2014. Genocea expects that these funds will be sufficient to fund its operating expenses and capital expenditure requirements until at least the end of 2015.
- **Research and Development (R&D) Expenses:** R&D expenses this quarter were $6.1 million, compared to $3.3 million in the third quarter of 2013, reflecting higher personnel costs and the continued advancement of both of our clinical programs into Phase 2 trials.
- **General and Administrative (G&A) Expenses:** G&A expenses were $2.8 million in the third quarter of 2014, compared to $1.4 million in the comparable period in 2013 reflecting additional personnel costs and increased costs to support our public company operations.
- **Net Loss:** Net loss was $9.2 million for the third quarter of 2014, compared to a net loss of $4.8 million for the comparable period in 2013.

Anticipated Upcoming Milestones:

- **GEN-003 Phase 2 dose optimization trial:** Top-line results are expected in mid-2015.
- **GEN-004 Phase 2a human challenge study**: Top-line results are expected in mid-2015.

Conference Call

Genocea will be hosting a conference call and webcast today, November 6, 2014, at 9:00 a.m. EST. The conference call may be accessed by dialing (844) 826-0619 for domestic participants and (315) 625-6883 for international callers (reference conference ID 10513540). A live webcast of the conference call will be available online from the investor relations section of the Company's website at http://ir.genocea.com. 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 30 days.

About Genocea

Genocea is harnessing the power of T cell immunity to develop life-changing vaccines and immunotherapies. T cells are increasingly recognized as a critical element of protective immune responses to a wide range of diseases, but traditional discovery methods have proven unable to identify the targets of such protective immune response. Using ATLAS™, its proprietary technology platform, Genocea identifies these targets to potentially enable the rapid development of medicines to address critical patient needs. Genocea's pipeline of novel clinical stage T cell-enabled product candidates includes GEN-003 for HSV-2 therapy, GEN-004 to prevent infections caused by pneumococcus, and earlier-stage programs in chlamydia, HSV-2 prophylaxis, malaria and cancer immunotherapy. 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 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; 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; it'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, 2013 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.

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

	September 30, 2014	December 31, 2013
Cash, cash equivalents and marketable securities	$ 52,193	$ 12,208
Other assets	3,606	3,553
Total assets	$ 55,799	$ 15,761
Note payable	$ 9,630	$ 9,794
Accounts payable	1,522	2,176
Accrued expenses	2,087	1,418
Other liabilities	1,596	942
Total liabilities	14,835	14,330
Redeemable convertible preferred stock	-	81,562
Stockholders' equity (deficit)	40,964	(80,131)
Total liabilities, redeemable convertible preferred stock and stockholders' equity (deficit)	$ 55,799	$ 15,761

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

	Three months ended September 30,		Nine months ended September 30,	
	2014	2013	2014	2013
Grant revenue	$ -	$ 223	$ -	$ 711
Operating expenses:				
Research and development	6,115	3,275	15,073	11,354
General and administrative	2,843	1,423	7,167	3,113
Total operating expenses	8,958	4,698	22,240	14,467
Loss from operations	(8,958)	(4,475)	(22,240)	(13,756)
Other expense, net	(213)	(364)	(1,406)	(704)
Net loss	**$ (9,171)**	**$(4,839)**	**$(23,646)**	**$(14,460)**
Accretion of redeemable convertible preferred stock to redemption value	-	(404)	(180)	(1,200)
Net loss attributable to common stockholders	$ (9,171)	$(5,243)	$(23,826)	$(15,660)
Net loss per share attributable to common stockholders - basic and diluted	$ (0.53)	$(17.71)	$ (1.60)	$ (52.91)
Weighted-average number of common shares used in net loss per share attributable to common stockholders - basic and diluted	17,465	296	14,918	296

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