August 6, 2015

Genocea Reports Second Quarter 2015 Financial Results

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Genocea Biosciences, Inc. (NASDAQ:GNCA), a biopharmaceutical company developing T cell-directed vaccines and immunotherapies, today reported recent corporate highlights and financial results for the second quarter ended June 30, 2015.

"We were extremely pleased to report positive top-line results in May from our Phase 2 dose optimization trial of GEN-003, our immunotherapy against genital herpes, which improved upon the already attractive efficacy profile from our prior Phase 1/2a trial," said Chip Clark, president and chief executive officer of Genocea. "In the fourth quarter of this year, we look forward to reporting proof-of-efficacy results from the Phase 2 human challenge study for GEN-004, our universal pneumococcal disease vaccine candidate, as well as the 6-month viral shedding and clinical endpoint results for the ongoing GEN-003 Phase 2 study."

Business Highlights and Anticipated Milestones

GEN-003 - Immunotherapy for treatment of genital herpes in Phase 2 development. > $1 billion revenue forecast in the US.

- ***Reported positive top-line data from Phase 2 dose optimization trial in May 2015***
- ***6-month Phase 2 results expected in fourth quarter of 2015***

In May 2015, Genocea reported positive results from the 28-day observation period immediately after completion of dosing in the Phase 2 dose optimization trial. The best dose of 60 µg per protein / 75 µg of Matrix-M2^{TM} adjuvant demonstrated a highly statistically significant ($p < 0.0001$) 55 percent reduction from baseline in the viral shedding rate (the primary endpoint of the trial and a measure of anti-viral activity). All dose combinations tested, including the successful 30 µg per protein / 50 µg of adjuvant dose from the previous Phase 1/2a trial, showed a statistically significant viral shedding rate reduction versus baseline. In a planned secondary analysis to assess impact on patient-reported genital lesion rates, all dose groups, including the placebo group, demonstrated a statistically significant reduction from baseline. The study showed that GEN-003 was generally safe and well tolerated, with no serious adverse events related to the vaccine. Furthermore there were no differences in discontinuations in patient dosing due to adverse events across the different treatment arms.

Genocea anticipates reporting 6-month Phase 2 dose optimization results in the fourth quarter of 2015. The Company hopes that this data will confirm the 6-month durability of reduction in the viral shedding and genital lesion rates from baseline which was demonstrated in the prior Phase 1/2a trial and which has been established in company-sponsored market research to be highly attractive to patients and physicians.

GEN-004 - Vaccine for the prevention of infections by all serotypes of pneumococcus. Potentially disruptive to approximately $6 billion global market.

- ***Phase 2a challenge study efficacy results expected in the fourth quarter of 2015***

Proof-of-efficacy results from the ongoing Phase 2a trial evaluating the impact of GEN-004 on nasopharyngeal colonization by pneumococcus in healthy adults are expected in the fourth quarter of 2015.

Existing vaccines for pneumococcus command approximately a $6 billion global market and are effective against only a small number of historically the most prevalent serotypes of pneumococcus. GEN-004 has been designed to be a universal vaccine against more than 90 serotypes of pneumococcus.

Completed $50 million public offering in August 2015.

- ***Funding expected to be sufficient to complete GEN-003 Phase 2 program***
- ***Strengthened balance sheet provides foundation for ongoing business development activities***

In August 2015, Genocea closed a public offering of 3,850,000 shares of common stock. Gross and net proceeds to Genocea from this offering were approximately $50 million and $47 million, respectively. Genocea has also granted the underwriters a 30-

day option to purchase up to an additional 577,500 shares of common stock at the offering price of $13 per share.

The Company believes this financing will enable it to complete its GEN-003 Phase 2 program and continue to advance GEN-004 through clinical development and to progress ongoing and new research programs towards the filing of Investigational New Drug applications.

Second Quarter 2015 Financial Results & Financial Guidance

- **Cash Position:** Cash, cash equivalents and marketable securities as of June 30, 2015 were $74.6 million, compared to $84.5 million as of March 31, 2015. Genocea expects that these funds, together with the net proceeds of approximately $47.0 million from the recent public offering, will be sufficient to fund its operating expenses and capital expenditure requirements into the second half of 2017.
- **Research and Development (R&D) Expenses:** R&D expenses for the quarter ended June 30, 2015 were $7.0 million, compared to $4.6 million for the same period in 2014, reflecting higher personnel costs, increased clinical trial costs associated with the continued advancement of GEN-003 and the ongoing Phase 2a clinical trial for GEN-004, and investments in Genocea's pre-clinical pipeline.
- **General and Administrative (G&A) Expenses:** G&A expenses for the quarter ended June 30, 2015 were $3.2 million, compared to $2.4 million for the same period in 2014 reflecting higher personnel costs to support Genocea's expanding R&D operations and to meet the demands of operating as a public company.
- **Net Loss:** Net loss was $10.3 million for the second quarter of 2015, compared to a net loss of $7.1 million for the same period in 2014.

Conference Call
Genocea will host a conference call and webcast today at 9:00 a.m. ET. The conference call may be accessed by dialing (844) 826-0619 for domestic participants and (315) 625-6883 for international callers and referencing the conference ID number 87463451. 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 genital herpes, GEN-004 for the prevention of infection by more than 90 serotypes of pneumococcus, and earlier-stage programs in chlamydia, genital herpes prophylaxis and malaria. We are also investigating the application of ATLAS™ to immuno-oncology target discovery. 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, timing 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, 2014 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)

	June 30, 2015	December 31, 2014*
Cash, cash equivalents and marketable securities	$ 74,595	$ 47,079
Other assets	4,121	3,253
Total assets	$ 78,716	$ 50,332
Accounts payable	$ 1,411	$ 2,692
Accrued expenses	4,160	2,486
Long term debt	11,564	11,389
Other liabilities	919	1,258
Total liabilities	18,054	17,825
Stockholders' equity	60,662	32,507
Total liabilities, and stockholders' equity	$ 78,716	$ 50,332

* Includes $99 thousand in deferred financing costs reclassified from Other assets to Long term debt upon the adoption of a recently issued accounting pronouncement, which required retrospective application.

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

	Three months ended June 30,		Six months ended June 30,	
	2015	2014	2015	2014
Grant revenue	$ 115	$ -	$ 236	$ -
Operating expenses:				
Research and development	6,969	4,551	15,478	8,958
General and administrative	3,172	2,358	6,561	4,324
Total operating expenses	10,141	6,909	22,039	13,282
Loss from operations	(10,026)	(6,909)	(21,803)	(13,282)
Other expense, net	(288)	(237)	(595)	(1,193)
Net loss	**$ (10,314)**	**$ (7,146)**	**$(22,398)**	**$(14,475)**
Accretion of redeemable convertible preferred stock to redemption value	-	-	-	(180)
Net loss attributable to common stockholders	$ (10,314)	$ (7,146)	$(22,398)	$(14,655)
Net loss per share attributable to common stockholders - basic and diluted	$ (0.43)	$ (0.41)	$ (1.04)	$ (1.08)
Weighted-average number of common shares used in net loss per share attributable to common stockholders - basic and diluted	24,154	17,346	21,510	13,623

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