



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

September 26, 2017

William Clark
Chief Executive Officer
Genocea Biosciences, Inc.
100 Acorn Park Drive
Cambridge, MA 02140

Re: Genocea Biosciences, Inc.
Form 10-K for the period ended December 31, 2016
Filed February 17, 2017
File No. 001-36289

Dear Mr. Clark:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response to these comments, we may have additional comments.

Form 10-K for the period ended December 31, 2016

Item 1. Business, page 4

1. We note your statements on page 6 that the "Phase 2 dose optimization trial continued to show that GEN-003 is safe and well tolerated by patients;" on page 7 that "GEN-004 was safe and well tolerated" on page 11 that the "Phase 2 trial continued to show that GEN-003 was safe and well tolerated." Please note that only the FDA has the authority to make determinations related to safety and efficacy. Please confirm that you will not make such statements about your product candidates until you have completed clinical trials and the FDA has made its determinations regarding safety and efficacy.
2. We note your collaboration agreements with Checkmate and US Oncology. Please expand your discussion to clarify whether you will have any financial or commercial rights to product candidates developed with the assistance of ATLAS.

William Clark

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Our Immuno-Oncology Program, page 12

3. We note your current collaboration agreements with DFCI and MSKCC. Your disclosure indicates that the identified individuals at these institutions are using ATLAS to screen T cell responses. Please clarify whether you have the right to use their findings in the development of your product candidates. Disclose the material terms of these collaboration agreements, including financial obligations, payments paid to date, commercialization rights and term and termination provisions. Additionally, provide us with an analysis supporting your determination that these agreements are not required to be filed as exhibits.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Please contact Ada D. Sarmiento at (202) 551-3798 or me at (202) 551-3675 with any questions.

Division of Corporation Finance
Office of Healthcare & Insurance

cc: Marc Rubenstein, Esq.