

As filed with the Securities and Exchange Commission on June 2, 2020

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
 WASHINGTON, DC 20549
FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

GENOCEA BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware(State or other jurisdiction of
incorporation or organization)**51-0596811**

(IRS Employer Identification No.)

100 Acorn Park Drive, 5th Floor, Cambridge, MA

(Address of Principal Executive Offices)

02140

(Zip Code)

Amended and Restated 2014 Equity Incentive Plan

(Full title of the plan)

William Clark**President and Chief Executive Officer****100 Acorn Park Drive, 5th Floor****Cambridge, MA 02140**

(Name and address of agent for service)

(617) 876-8191

(Telephone number, including area code, of agent for service)

With copies to:**Marc A. Rubenstein**

Ropes & Gray LLP

Prudential Tower

800 Boylston Street

Boston, MA 02199

617-951-7000

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="radio"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="radio"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="radio"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Exchange Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share (2)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common Stock, \$0.001 par value per share	2,800,000 shares	\$ 2.88	\$ 8,064,000	\$ 1,046.71
Total	2,800,000 shares		\$ 8,064,000	\$ 1,046.71

(1) This Registration Statement covers an aggregate of 2,800,000 shares of the Registrant's common stock, par value \$0.001 per share (the "Common Stock"), reserved for issuance under the Registrant's Amended and Restated 2014 Equity Incentive Plan. In addition, pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also covers such additional shares of Common Stock as may be issued to prevent dilution from stock splits, stock dividends and similar transactions.

- (2) Pursuant to Rules 457(c) and 457(h)(1) under the Securities Act, the proposed maximum offering price per share and the maximum aggregate offering price for the shares have been calculated solely for the purpose of computing the registration fee on the basis of the average high and low prices of the Common Stock as reported by the Nasdaq Capital Market on May 29, 2020 to be \$3.13 and \$2.63, respectively.
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EXPLANATORY NOTE

This Registration Statement on Form S-8 is being filed to register an additional 2,800,000 shares under the Registrant's Amended and Restated 2014 Equity Incentive Plan. Pursuant to General Instruction E to Form S-8, the Registrant incorporates by reference, except to the extent supplemented, amended or superseded by the information set forth herein, into this Registration Statement the entire contents of its Registration Statement on Form S-8 (File No. 333-194021) filed with the Securities and Exchange Commission on February 19, 2014.

PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 8. Exhibits.

Exhibit	Description
4.1	<u>Fifth Amended and Restated Certificate of Incorporation (previously filed as Exhibit 3.1 to the current report on Form 8-K filed on February 12, 2014 (File No. 001-36289) and incorporated herein by reference)</u>
4.2	<u>Amended and Restated By-laws (previously filed as Exhibit 3.2 to the current report on Form 8-K filed on February 12, 2014 (File No. 001-36289) and incorporated herein by reference)</u>
4.3	<u>Certificate of Amendment to Restated Certificate of Incorporation (previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-36289) filed on June 25, 2018 and incorporated herein by reference)</u>
4.4	<u>Certificate of Amendment to Restated Certificate of Incorporation (previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-36289) filed on May 21, 2019 and incorporated herein by reference)</u>
4.5	<u>Certificate of Amendment to Restated Certificate of Incorporation (previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-36289) filed on June 2, 2020 and incorporated herein by reference)</u>
4.6	<u>Form of Common Stock Certificate (previously filed as Exhibit 4.1 to the registration statement on Form S-1 (File No. 333-193043) and incorporated herein by reference)</u>
4.7	<u>Genocea Biosciences, Inc. Amended and Restated 2014 Equity Incentive Plan (previously filed as Exhibit 10.1 to the Company's Current Report of Form 8-K (File No. 001-36289) filed on June 2, 2020 and incorporated herein by reference)</u>
5.1	<u>Opinion of Ropes & Gray LLP (filed herewith).</u>
23.1	<u>Consent of Ropes & Gray LLP (included in Exhibit 5.1).</u>
23.2	<u>Consent of Ernst & Young LLP (filed herewith).</u>
24.1	<u>Power of attorney (included on the signature page of this Registration Statement under the caption "Power of Attorney").</u>

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts on June 2, 2020.

GENOCEA BIOSCIENCES, INC.

By: /s/ Diantha Duvall

Name: Diantha Duvall

Title: Chief Financial Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints William Clark and Diantha Duvall, and each of them singly, either of whom may act without the joinder of the other, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8, and to file the same, with all exhibits thereto, and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them singly, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or either of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>SIGNATURES</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ William Clark</u> William Clark	Chief Executive Officer (Principal executive officer) and Director	June 2, 2020
<u>/s/ Diantha Duvall</u> Diantha Duvall	Chief Financial Officer (Principal financial and accounting officer)	June 2, 2020
<u>/s/ Kenneth Bate</u> Kenneth Bate	Director	June 2, 2020
<u>/s/ Ali Behbahani</u> Ali Behbahani	Director	June 2, 2020
<u>/s/ Katrine Bosley</u> Katrine Bosley	Director	June 2, 2020
<u>/s/ Ronald Cooper</u> Ronald Cooper	Director	June 2, 2020
<u>/s/ Michael Higgins</u> Michael Higgins	Director	June 2, 2020
<u>/s/ Howard Mayer</u> Howard Mayer	Director	June 2, 2020
<u>/s/ Gisela Schwab</u> Gisela Schwab	Director	June 2, 2020
<u>/s/ George Siber</u> George Siber	Director	June 2, 2020



ROPES & GRAY LLP
PRUDENTIAL TOWER
800 BOYLSTON STREET
BOSTON, MA 02199-3600
WWW.ROPESGRAY.COM

June 2, 2020

Genocea Biosciences, Inc.
Cambridge Discovery Park
100 Acorn Park Drive, 5th Floor
Cambridge, MA 02140

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

This opinion letter is furnished to you in connection with the registration statement on Form S-8 (the "Registration Statement"), filed by Genocea Biosciences, Inc., a Delaware corporation (the "Company"), on the date hereof, with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Securities Act"), for the registration of an aggregate of 2,800,000 shares of common stock, \$0.001 par value, of the Company (the "Shares"), issuable under the Company's Amended and Restated 2014 Equity Incentive Plan (the "Plan").

We are familiar with the actions taken by the Company in connection with the Plan. We have examined such certificates, documents and records and have made such investigation of fact and such examination of law as we have deemed appropriate in order to enable us to render the opinions set forth herein. In conducting such investigation, we have relied, without independent verification, upon certificates of officers of the Company, public officials and other appropriate persons.

The opinions expressed below are limited to the Delaware General Corporation Law.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized and, when the Shares have been issued and sold in accordance with the terms of the Plan, the Shares will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion letter as an exhibit to the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Ropes & Gray LLP

Ropes & Gray LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-8 pertaining to the Amended and Restated 2014 Equity Incentive Plan of Genocera Biosciences, Inc. of our report dated February 13, 2020, with respect to the consolidated financial statements of Genocera Biosciences, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2019, filed with the Securities and Exchange Commission.

Ernst & Young LLP

Boston, Massachusetts

June 2, 2020