

As filed with the Securities and Exchange Commission on March 4, 2019

**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, 5<sup>th</sup> Floor, Cambridge, MA**

(Address of Principal Executive Offices)

**02140**

(Zip Code)

**Amended and Restated 2014 Equity Incentive Plan**  
 (Full titles of the plans)

**William Clark**  
**President and Chief Executive Officer**  
**100 Acorn Park Drive, 5<sup>th</sup> Floor**  
**Cambridge, MA 02140**  
 (Name and address of agent for service)

**(617) 876-8191**

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

**Please send copies of all communications to:**

**Marc A. Rubenstein**  
 Ropes & Gray LLP  
 Prudential Tower  
 800 Boylston Street  
 Boston, MA 02199-3600  
 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

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Amended and Restated 2014 Equity Incentive Plan, Common Stock, \$0.001 par value per share	3,470,847 shares (2)	\$ 0.84 (3)	\$ 2,915,511	\$ 353.36
<b>TOTAL</b>	3,470,847 shares		\$ 2,915,511	\$ 353.36

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, this Registration Statement also covers such additional shares of Common Stock as may issued to prevent dilution from stock splits, stock dividends and similar transactions.
- (2) Represents 3,470,847 shares of Common Stock that were automatically added to the shares authorized for issuance under the registrant's Amended and Restated 2014 Equity Incentive Plan (the "2014 Plan") on January 1, 2019 pursuant to an "evergreen" provision contained in the 2014 Plan. The "evergreen" provision provides that on each January 1<sup>st</sup> from January 1, 2015 through January 1, 2024, the number of shares of Common Stock available for issuance under the 2014 Plan will automatically increase annually in an amount equal to the lesser of 4% of outstanding shares of the registrant's Common Stock as of the close of business on the immediately preceding December 31<sup>st</sup> or the number of shares determined by the registrant's board of directors.
- (3) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(h) based on the average high and low prices of the registrant's Common Stock as reported by the NASDAQ Capital Market on February 27, 2019 to be \$0.93 and \$0.75, respectively.

## EXPLANATORY NOTE

This Registration Statement on Form S-8 is being filed to register an additional 3,470,847 shares under the registrant's 2014 Plan. Pursuant to 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 Number	Description
4.1	<a href="#"><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></a>
4.2	<a href="#"><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></a>
4.3	<a href="#"><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></a>
4.4	<a href="#"><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></a>
4.5	<a href="#"><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 25, 2018 and incorporated herein by reference).</u></a>
5.1	<a href="#"><u>Opinion of Ropes &amp; Gray LLP (filed herewith).</u></a>
23.1	<a href="#"><u>Consent of Ernst &amp; Young LLP (filed herewith).</u></a>
23.2	<a href="#"><u>Consent of Ropes &amp; Gray LLP (included in the opinion filed as Exhibit 5.1).</u></a>
24.1	<a href="#"><u>Powers of Attorney (included on the signature page in Part II).</u></a>

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**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 this 4<sup>th</sup> day of March, 2019.

GENOCEA BIOSCIENCES, INC.

By: /s/ Michael Alfieri

Name: Michael Alfieri

Title: Vice President, Finance and Principal Financial Officer

**POWER OF ATTORNEY**

Each person whose signature appears below constitutes and appoints William Clark, Michael Alfieri and Derek Meisner and each of them acting individually, his or her true and lawful attorney-in-fact and agent 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 to be filed by GenoceA Biosciences, Inc., 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 full power and authority to be done in and about the premises, 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 their substitutes, may lawfully do or cause to be done by virtue hereof.

\* \* \* \*

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

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<b>Signature</b>	<b>Title</b>	<b>Date</b>
<hr/> <i>/s/ William Clark</i> William Clark	President and Chief Executive Officer and Director (Principal Executive Officer)	March 4, 2019
<hr/> <i>/s/ Michael Alfieri</i> Michael Alfieri	Vice President, Finance (Principal Financial Officer and Principal Accounting Officer)	March 4, 2019
<hr/> <i>/s/ Kenneth Bate</i> Kenneth Bate	Director	March 4, 2019
<hr/> <i>/s/ Ali Behbahani</i> Ali Behbahani	Director	March 4, 2019
<hr/> <i>/s/ Katrine Bosley</i> Katrine Bosley	Director	March 4, 2019
<hr/> <i>/s/ Ronald Cooper</i> Ronald Cooper	Director	March 4, 2019
<hr/> <i>/s/ Michael Higgins</i> Michael Higgins	Director	March 4, 2019
<hr/> <i>/s/ Howard Mayer</i> Howard Mayer, M.D.	Director	March 4, 2019
<hr/> <i>/s/ George Siber</i> George Siber, M.D.	Director	March 4, 2019



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

March 4, 2019

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

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

This opinion is furnished to you in connection with the registration statement on Form S-8 (the "Registration Statement"), filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), for the registration of an aggregate of 3,470,847 shares of common stock, \$0.001 par value (the "Shares"), of Genocea Biosciences, Inc., a Delaware corporation (the "Company"), 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 adoption of the Plan. For purposes of our opinion, we have examined and relied upon such documents, records, certificates and other instruments as we have deemed necessary.

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

Based on 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 Plan, the Shares will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. In giving this consent we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated 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 (Form S-8) pertaining to the 2014 Equity Incentive Plan of Genocera Biosciences, Inc. of our report dated February 28, 2019, 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, 2018, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts

March 4, 2019