

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **April 24, 2018**

GENOCEA BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation)

001-36289
(Commission File Number)

51-0596811
(IRS Employer
Identification No.)

**Cambridge Discovery Park
100 Acorn Park Drive, 5th Floor
Cambridge, MA**
(Address of principal executive offices)

02140
(Zip Code)

(Registrant's telephone number, including area code): **(617) 876-8191**

Not Applicable
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging Growth Company

If an emerging growth company, indicate by a 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 13(a) of the Exchange Act.

Item 1.01 Entry into a Material Definitive Agreement.

Genocea Biosciences, Inc. (the “Company”) and Hercules Capital, Inc., a Maryland corporation (“Hercules”), had entered into the Loan and Security Agreement, dated as of November 20, 2014, amended by the First Amendment to Loan and Security Agreement dated as of December 17, 2015, and further amended by the Second Amendment to Loan and Security Agreement dated as of January 22, 2018 (the “Original Loan”). The parties to the Original Loan agreed to refinance the Original Loan.

On April 24, 2018 (the “Closing Date”), the Company entered into a term loan facility of \$14,000,000 (the “Term Loan”) with Hercules, the proceeds of which will be used to refinance the Original Loan and for working capital and general corporate purposes. The Term Loan is governed by the Amended and Restated Loan and Security Agreement, dated April 24, 2018 (the “Loan Agreement”), which provides for the Term Loan to be funded on the Closing Date.

The Term Loan will mature on May 1, 2021. The advance accrues interest at a floating per annum rate equal to the greater of (i) 7.75% or (ii) the sum of 7.75% plus the prime rate minus 5.0%. The Term Loan provides for interest-only payments until June 1, 2019, which may be extended to December 1, 2019 if certain performance milestones are achieved before May 31, 2019 and no event of default has occurred or is continuing. Interest only payments may be further extended to June 1, 2020 if certain additional performance milestones are achieved before November 30, 2019. Thereafter, amortization payments will be payable monthly in equal installments of principal and interest (subject to recalculation upon a change in prime rates) upon expiration of the interest only period through maturity. The advance may be prepaid in whole or in part upon seven business days’ prior written notice to Hercules, subject to a prepayment charge of 3.0%, if such advance is prepaid in any of the first twelve (12) months following the Closing Date, 2.0%, if such advance is prepaid after twelve (12) months following the Closing Date but on or prior to twenty four (24) months following the Closing Date, and 1.0% thereafter. Amounts outstanding during an event of default shall be payable on demand and shall accrue interest at an additional rate of 5.0% per annum of the past due amount outstanding.

The Term Loan is secured by a lien on substantially all of the assets of the Company, other than intellectual property, provided that such lien on substantially all assets includes any rights to payments and proceeds from the sale, licensing or disposition of intellectual property.

The Loan Agreement contains customary covenants and representations, including a financial reporting covenant and limitations on dividends, indebtedness, collateral, investments, distributions, transfers, mergers or acquisitions, taxes, corporate changes, deposit accounts, and subsidiaries. There are no financial covenants.

The events of default under the Loan Agreement include, without limitation, and subject to customary grace periods, (1) the Company’s failure to make any payments of principal or interest under the Loan Agreement or other loan documents, (2) the Company’s breach or default in the performance of any covenant under the Loan Agreement, (3) the occurrence of an event that would reasonably be expected to have a material adverse effect, (4) the Company making a false or misleading representation or warranty in any material respect, (5) the Company’s insolvency or bankruptcy, (6) any attachment or judgment on the Company’s assets of at least \$100,000, or (7) the occurrence of any material default under any agreement or obligation of the Company involving indebtedness in excess of \$100,000. If an event of default occurs, Hercules is entitled to take enforcement action, including acceleration of amounts due under the Loan Agreement.

The Loan Agreement also contains other customary provisions, such as expense reimbursement and confidentiality. Hercules has indemnification rights and the right to assign the Term Loan.

In connection with the Loan Agreement, the Company issued to Hercules a warrant, dated April 24, 2018 (the “Warrant”) to purchase shares of the common stock of the Company, \$0.001 par value per share (the “Common Stock”). The Warrant is exercisable for 329,411 shares of the Company’s Common Stock with an exercise price of \$0.85. The exercise price and the number of shares are subject to adjustment upon a merger event, reclassification of the shares of Common Stock, subdivision or combination of the shares of Common Stock or certain dividends payments. The Warrant is exercisable until the fifth anniversary of the Closing Date and will be exercised automatically on a net issuance basis if not exercised prior to the expiration date and if the then-current fair market value of one share of Common Stock is greater than the exercise price then in effect.

In connection with the Loan Agreement, on April 24, 2018, the Company also entered into an amendment to the equity rights letter agreement, dated November 20, 2014 (the “Amended Equity Rights Letter Agreement”). Pursuant to the Amended Equity Rights Letter Agreement, the Company had already issued to Hercules 223,463 shares (the “Shares”) of the Company’s Common Stock for an aggregate purchase price of approximately \$2.0 million on November 20, 2014 at a price per share equal

to the closing price of the Company's Common Stock as reported on The NASDAQ Global Market on November 19, 2014 (the "Initial Equity Investment"). The Shares were issued pursuant to an exemption provided by Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"). Accordingly, the Shares will be subject to resale limitations and may be resold only pursuant to an effective registration statement or an exemption from registration.

Additionally, under the Amended Equity Rights Letter Agreement, Hercules has the right to participate, in its discretion, in any one or more subsequent equity financings broadly marketed to multiple accredited investors in a private placement for financing purposes of up to a total of \$2.0 million on the same terms and conditions as purchases by the other investors in each subsequent equity financing. The Amended Equity Rights Letter Agreement, and all rights and obligations thereunder, will terminate upon the earlier of (1) such time when Hercules has purchased \$2.0 million of subsequent equity financing securities in the aggregate and (2) the later of (a) the repayment of all indebtedness under the Loan Agreement and (b) the expiration or termination of the exercise period for the Warrant.

The foregoing description of the Warrant and Amended Equity Rights Letter Agreement does not purport to be complete and is qualified in its entirety by reference to the Warrant and the Amended Equity Rights Letter Agreement, copies of which are filed as Exhibits 4.1 and 10.1, respectively, to this Form 8-K and are incorporated herein by reference. The foregoing description of the Loan Agreement does not purport to be complete and is qualified in its entirety by reference to the Loan Agreement, a copy of which the Company intends to file with the Securities and Exchange Commission as an exhibit to its Quarterly Report on Form 10-Q for the quarter ended June 30, 2018.

Item 2.03 Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant.

To the extent required by Item 2.03 of Form 8-K, the information regarding the Term Loan set forth under Item 1.01 of this Form 8-K is incorporated by reference in this Item 2.03.

Item 3.02 Unregistered Sales of Equity Securities.

To the extent required by Item 3.02 of Form 8-K, the information regarding the Warrant and the Initial Equity Investment set forth under Item 1.01 of this Form 8-K is incorporated by reference in this Item 3.02. The Company issued to Hercules both the Warrant and the Shares purchased by Hercules in the Initial Equity Investment in reliance on the exemption from registration provided for under Section 4(a)(2) of the Securities Act. The Company relied on this exemption from registration for private placements based in part on the representations made by Hercules, including the representations with respect to Hercules' status as an accredited investor, as such term is defined in Rule 501(a) of the Securities Act, and Hercules' investment intent.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

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|------|---|
| 4.1 | <u>Warrant Agreement between Genoclea Biosciences, Inc. and Hercules Capital, Inc., dated April 24, 2018</u> |
| | <u>Amendment to Equity Rights Letter Agreement between Genoclea Biosciences, Inc. and Hercules Capital, Inc., dated November 20, 2014, as amended on April 24, 2018</u> |
| 10.1 | |

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

GENOCEA BIOSCIENCES, INC.

By: /s/ WILLIAM CLARK

William Clark

President and Chief Executive Officer

Date: April 30, 2018

THIS WARRANT AND THE SHARES ISSUABLE UPON EXERCISE HEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR ANY STATE SECURITIES LAWS, AND MAY NOT BE SOLD, OFFERED FOR SALE, PLEDGED, OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR, SUBJECT TO SECTION 11 HEREOF, AN OPINION OF COUNSEL (WHICH MAY BE COMPANY COUNSEL) REASONABLY SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT, OR ANY APPLICABLE STATE SECURITIES LAWS.

WARRANT AGREEMENT

To Purchase Shares of the Common Stock of

GENOCEA BIOSCIENCES, INC.

Dated as of April 24, 2018 (the "Effective Date")

WHEREAS, Genoclea Biosciences, Inc., a Delaware corporation (the "Company"), has entered into an Amended and Restated Loan and Security Agreement of even date herewith (as amended and in effect from time to time, the "Loan Agreement") with Hercules Capital, Inc., a Maryland corporation (the "Warrantholder"), in its capacity as administrative agent, and the lender parties thereto; and

WHEREAS, pursuant to the Loan Agreement and as additional consideration to the Warrantholder for, among other things, its agreements in the Loan Agreement, the Company has agreed to issue to the Warrantholder this Warrant Agreement, evidencing the right to purchase shares of the Company's Common Stock (this "Warrant", "Warrant Agreement", or this "Agreement");

NOW, THEREFORE, in consideration of the Warrantholder having executed and delivered the Loan Agreement and provided the financial accommodations contemplated therein, and in consideration of the mutual covenants and agreements contained herein, the Company and Warrantholder agree as follows:

SECTION 1. GRANT OF THE RIGHT TO PURCHASE COMMON STOCK.

(a) For value received, the Company hereby grants to the Warrantholder, and the Warrantholder is entitled, upon the terms and subject to the conditions hereinafter set forth, to subscribe for and purchase, from the Company, up to the number of fully paid and non-assessable shares of Common Stock (as defined below) as determined pursuant to Section 1(b) below, at a purchase price per share equal to the Exercise Price (as defined below). The number and Exercise Price of such shares are subject to adjustment as provided in Section 8. As used herein, the following terms shall have the following meanings:

"Charter" means the Company's Certificate of Incorporation or other constitutional document, as may be amended and in effect from time to time.

"Common Stock" means the Company's common stock, \$0.001 par value per share, as presently constituted under the Charter, and any class and/or series of Company capital stock for or into which such common stock may be converted or exchanged in a reorganization, recapitalization or similar transaction.

"Exchange Act" means the Securities Exchange Act of 1934, as amended.

"Exercise Price" means \$0.85, subject to adjustment from time to time in accordance with the provisions of this Warrant.

"Liquid Sale" means the closing of a Merger Event in which the consideration received by the Company and/or its stockholders, as applicable, consists solely of cash and/or Marketable Securities.

"Marketable Securities" in connection with a Merger Event means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Exchange Act, and is then current in its filing of all required reports and other information under the Securities Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by the Warrantholder in connection with the Merger Event were the Warrantholder to exercise this Warrant on or prior to the closing thereof is then traded on a national securities exchange or over-the-counter market, and (iii) following the closing of such Merger Event, Warrantholder would not be restricted from publicly re-selling all of the issuer's shares and/or other securities that would be received by Warrantholder in such Merger Event were Warrantholder to exercise this Warrant in full on or prior to the closing of such Merger Event, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Merger Event.

"Merger Event" means any of the following: (i) a sale, lease or other transfer of all or substantially all assets of the

Company, (ii) any merger or consolidation involving the Company in which the Company is not the surviving entity or in which the outstanding shares of the Company's capital stock are otherwise converted into or exchanged for shares of capital stock or other securities or property of another entity and in which the holders of a majority of the outstanding shares of capital stock of the Company immediately prior to such merger or consolidation do not hold a majority of the surviving entity or other entity immediately following such merger or consolidation, or (iii) any sale by holders of the outstanding voting equity securities of the Company in a single transaction or series of related transactions of shares constituting a majority of the outstanding combined voting power of the Company to a single purchaser or "group" within the meaning of Section 13(d)(3) of the Exchange Act.

"Purchase Price" means, with respect to any exercise of this Warrant, an amount equal to the then-effective Exercise Price multiplied by the number of shares of Common Stock as to which this Warrant is then exercised.

"Rule 144" means Rule 144 of the Securities Act, as amended.

"Securities Act" means the Securities Act of 1933, as amended.

(b) Number of Shares. This Warrant shall be exercisable for 329,411 shares of Common Stock, subject to adjustment from time to time in accordance with the provisions of this Warrant. The Warrantholder shall be paid cash in lieu of the issuance of any fractional shares in accordance with Section 5 below.

SECTION 2. TERM OF THE AGREEMENT.

The term of this Warrant and the right to purchase Common Stock as granted herein shall commence on the Effective Date and, subject to Section 8(a) below, shall be exercisable for a period ending upon the fifth (5th) anniversary of the Effective Date.

SECTION 3. EXERCISE OF THE PURCHASE RIGHTS.

(a) Exercise. The purchase rights set forth in this Agreement are exercisable by the Warrantholder, in whole or in part, at any time, or from time to time, prior to the expiration of the term set forth in Section 2, by tendering to the Company at its principal office a notice of exercise in the form attached hereto as Exhibit I (the "Notice of Exercise"), duly completed and executed. Promptly upon receipt of the Notice of Exercise and the payment of the Purchase Price in accordance with the terms set forth below, and in no event later than three (3) business days thereafter, the Company shall issue to the Warrantholder a certificate or book entry shares representing the number of shares of Common Stock purchased and shall execute the acknowledgment of exercise in the form attached hereto as Exhibit II (the "Acknowledgment of Exercise") indicating the number of shares which remain subject to future purchases under this Warrant, if any.

The Purchase Price may be paid at the Warrantholder's election either (i) by cash or check, or (ii) by surrender of all or a portion of the Warrant for shares of Common Stock to be exercised under this Agreement and, if applicable, an amended Agreement setting forth the remaining number of shares purchasable hereunder, as determined below ("Net Issuance"). If the Warrantholder elects the Net Issuance method, the Company will issue shares of Common Stock in accordance with the following formula:

$$X = \frac{Y(A-B)}{A}$$

Where: X = the number of shares of Common Stock to be issued to the Warrantholder.

Y = the number of shares of Common Stock requested to be exercised under this Agreement.

A = the then-current fair market value of one (1) share of Common Stock at the time of exercise.

B = the then-effective Exercise Price.

For purposes of the above calculation, the current fair market value of shares of Common Stock shall mean with respect to each share of Common Stock:

(i) at all times when the Common Stock shall be traded on a national securities exchange, inter-dealer quotation system or over-the-counter bulletin board service, the average of the closing prices over a five (5) trading day period ending three days before the day the current fair market value of the securities is being determined;

(ii) if the exercise is in connection with a Merger Event, the fair market value of a share of Common Stock shall be deemed to be the per share value received by the holders of the outstanding shares of Common Stock pursuant to such Merger Event as determined in accordance with the definitive transaction documents executed among the parties in connection therewith; or

(iii) in cases other than as described in the foregoing clauses (i) and (ii), the current fair market value of a share of Common Stock shall be determined in good faith by the Company's Board of Directors.

Upon partial exercise by either cash or, upon request by the Warrantholder and surrender of all or a portion of this Warrant, Net Issuance, prior to the expiration or earlier termination hereof, the Company shall promptly issue an amended Agreement representing the remaining number of shares purchasable hereunder. All other terms and conditions of such amended Agreement shall be identical to those contained herein, including, but not limited to the Effective Date hereof.

(b) Exercise Prior to Expiration. To the extent this Warrant is not previously exercised as to all shares subject hereto, and if the then-current fair market value of one share of Common Stock is greater than the Exercise Price then in effect, or, in the case of a Liquid Sale, where the value per share of Common Stock (as determined as of the closing of such Liquid Sale in accordance with the definitive agreements executed by the parties in connection with such Merger Event) to be paid to the holders thereof is greater than the Exercise Price then in effect, this Agreement shall be deemed automatically exercised on a Net Issuance basis pursuant to Section 3(a) (even if not surrendered) as of immediately before its expiration determined in accordance with Section 2. For purposes of such automatic exercise, the fair market value of one share of Common Stock upon such expiration shall be determined pursuant to Section 3(a). To the extent this Warrant or any portion hereof is deemed automatically exercised pursuant to this Section 3(b), the Company agrees to promptly notify the Warrantholder of the number of shares of Common Stock if any, the Warrantholder is to receive by reason of such automatic exercise, and to issue a certificate to Warrantholder evidencing such shares.

SECTION 4.RESERVATION OF SHARES.

During the term of this Agreement, the Company will at all times have authorized and reserved a sufficient number of shares of its Common Stock to provide for the exercise of the rights to purchase Common Stock as provided for herein.

SECTION 5.NO FRACTIONAL SHARES OR SCRIP.

No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Agreement, but in lieu of such fractional shares the Company shall make a cash payment therefor upon the basis of the Exercise Price then in effect.

SECTION 6.NO RIGHTS AS SHAREHOLDER/STOCKHOLDER.

Without limitation of any provision hereof, Warrantholder agrees that this Agreement does not entitle the Warrantholder to any voting rights or other rights as a shareholder/stockholder of the Company prior to the exercise of any of the purchase rights set forth in this Agreement.

SECTION 7.WARRANTHOLDER REGISTRY.

The Company shall maintain a registry showing the name and address of the registered holder of this Agreement. Warrantholder's initial address, for purposes of such registry, is set forth in Section 12(g) below. Warrantholder may change such address by giving written notice of such changed address to the Company.

SECTION 8.ADJUSTMENT RIGHTS.

The Exercise Price and the number of shares of Common Stock purchasable hereunder are subject to adjustment from time to time, as follows:

(a) Merger Event. In connection with a Merger Event that is a Liquid Sale, this Warrant shall, on and after the closing thereof, automatically and without further action on the part of any party or other person, represent the right to receive the consideration payable on or in respect of all shares of Common Stock that are issuable hereunder as of immediately prior to the closing of such Merger Event less the Purchase Price for all such shares of Common Stock (such consideration to include both the consideration payable at the closing of such Merger Event, as actually paid or released, and all deferred consideration payable thereafter, if any, including, but not limited to, payments of amounts deposited at such closing into escrow and payments in the nature of earn-outs, milestone payments or other performance-based payments), and such Merger Event consideration shall be paid to Warrantholder as and when it is paid to the holders of the outstanding shares of Common Stock subject to Warrantholder's exercise of the Warrant. In connection with a Merger Event that is not a Liquid Sale, the Company shall cause the successor or surviving entity to assume this Warrant and the obligations of the Company hereunder on the closing thereof, and thereafter this Warrant shall be exercisable for the same number and type of securities or other property as the Warrantholder would have received in consideration for the shares of Common Stock issuable hereunder had it exercised this Warrant in full as of immediately prior to such closing, at an aggregate Exercise Price no greater than the aggregate Exercise Price in effect as of immediately prior to such closing, and subject to further adjustment from time to time in accordance with the provisions of this Warrant. The provisions of this Section 8(a) shall similarly apply to successive Merger Events.

(b) Reclassification of Shares. Except for Merger Events subject to Section 8(a), if the Company at any time shall, by combination, reclassification, exchange or subdivision of securities or otherwise, change any of the securities as to which purchase rights under this Agreement exist into the same or a different number of securities of any other class or classes of securities, this Agreement shall thereafter represent the right to acquire such number and kind of securities as would have been issuable as the result of such change with respect to the securities which were subject to the purchase rights under this Agreement immediately prior to such combination, reclassification, exchange, subdivision or other change. The provisions of this Section 8(b) shall similarly apply to successive combination, reclassification, exchange, subdivision or other change.

(c) Subdivision or Combination of Shares. If the Company at any time shall combine or subdivide its Common Stock,

(i) in the case of a subdivision, the Exercise Price shall be proportionately decreased and the number of shares for which this Warrant is exercisable shall be proportionately increased, or (ii) in the case of a combination, the Exercise Price shall be proportionately increased and the number of shares for which this Warrant is exercisable shall be proportionately decreased.

(d) Dividends. If the Company at any time while this Agreement is outstanding and unexpired shall:

(i) pay a dividend with respect to the outstanding shares of Common Stock payable in additional shares of Common Stock, then the Exercise Price shall be adjusted, to that price determined by multiplying the Exercise Price in effect immediately prior to such date of determination by a fraction (A) the numerator of which shall be the total number of shares of Common Stock outstanding immediately prior to such dividend or distribution, and (B) the denominator of which shall be the total number of shares of Common Stock outstanding immediately after such dividend or distribution, and the number of shares of Common Stock for which this Warrant is exercisable shall be proportionately increased; or

(ii) make any other dividend or distribution on or with respect to Common Stock, except any dividend or distribution (A) in cash, or (B) specifically provided for in any other clause of this Section 8, then, in each such case, provision shall be made by the Company such that the Warrantholder shall receive upon exercise or conversion of this Warrant a proportionate share of any such distribution as though it were the holder of the Common Stock (or other stock for which the Common Stock is convertible) as of the record date fixed for the determination of the shareholders of the Company entitled to receive such distribution.

(e) Notice of Certain Events. If: (i) the Company shall declare any dividend or distribution upon its outstanding Common Stock, payable in stock, cash, property or other securities (provided that Warrantholder in its capacity as lender under the Loan Agreement consents to such dividend); (ii) the Company shall offer for subscription pro rata to the holders of its Common Stock any additional shares of stock of any class or other rights; (iii) there shall be any Merger Event; or (iv) there shall be any voluntary dissolution, liquidation or winding up of the Company; then, in connection with each such event, the Company shall give the Warrantholder notice thereof at the same time and in the same manner as it gives notice thereof to the holders of outstanding Common Stock.

SECTION 9. REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE COMPANY.

(a) Reservation of Common Stock. The Company covenants and agrees that all shares of Common Stock, if any, that may be issued upon the exercise of the rights represented by this Warrant will, upon issuance, be validly issued and outstanding, fully paid and non-assessable. The Company further covenants and agrees that the Company will, at all times during the term hereof, have authorized and reserved, free from preemptive rights, a sufficient number of shares of Common Stock to provide for the exercise of the rights represented by this Warrant. If at any time during the term hereof the number of authorized but unissued shares of Common Stock shall not be sufficient to permit exercise of this Warrant in full, the Company will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes.

(b) Due Authority. The execution and delivery by the Company of this Agreement and the performance of all obligations of the Company hereunder, including the issuance to Warrantholder of the right to acquire the shares of Common Stock, have been duly authorized by all necessary corporate action on the part of the Company. This Agreement: (1) does not violate the Company's Charter or current bylaws; (2) does not contravene any law or governmental rule, regulation or order applicable to it; and (3) except as could not reasonably be expected to have a Material Adverse Effect (as defined in the Loan Agreement), does not and will not contravene any provision of, or constitute a default under, any indenture, mortgage, contract or other instrument to which it is a party or by which it is bound. This Agreement constitutes a legal, valid and binding agreement of the Company, enforceable in accordance with its terms, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws relating to or affecting creditors' rights generally (including, without limitation, fraudulent conveyance laws) and by general principles of equity, regardless of whether considered in a proceeding in equity or at law.

(c) Consents and Approvals. No consent or approval of, giving of notice to, registration with, or taking of any other action in respect of any state, federal or other governmental authority or agency is required with respect to the execution, delivery and performance by the Company of its obligations under this Agreement, except for the filing of notices pursuant to Regulation D under the Securities Act and any filing required by applicable state securities law, which filings will be effective by the time required thereby.

(d) [Intentionally Omitted].

(e) [Intentionally Omitted].

(f) Exempt Transaction. Subject to the accuracy of the Warrantholder's representations in Section 10, the issuance of the Common Stock upon exercise of this Agreement will constitute a transaction exempt from (i) the registration requirements of Section 5 of the Securities Act, in reliance upon Section 4(a)(2) thereof, and (ii) the qualification requirements of the applicable state securities laws.

(g) [Intentionally Omitted].

(h) Information Rights. At all times (if any) prior to the earlier to occur of (x) the date on which all shares of Common Stock

issued on exercise of this Warrant have been sold, or (y) the expiration or earlier termination of this Warrant, when the Company shall not be required to file reports pursuant to Section 13 or 15(d) of the Exchange Act or shall not have timely filed all such required reports, Warrantholder shall be entitled to the information rights contained in Section 7.1(b) – (f) of the Loan Agreement, and in any such event Section 7.1(b) – (f) of the Loan Agreement is hereby incorporated into this Agreement by this reference as though fully set forth herein, provided, however, that the Company shall not be required to deliver a Compliance Certificate once all Indebtedness (as defined in the Loan Agreement) owed by the Company to Warrantholder has been repaid, and provided further, that, in the case of a failure to timely file any such required report, the Company’s only obligation pursuant to this subsection (h) shall be to provide to the Warrantholder the information that would have been provided in any such required report which was not so filed.

(i) **Rule 144 Compliance.** The Company shall, at all times prior to the earlier to occur of (x) the date of sale or other disposition by Warrantholder of this Warrant or all shares of Common Stock issued on exercise of this Warrant, or (y) the expiration or earlier termination of this Warrant if the Warrant has not been exercised in full or in part on such date, use all commercially reasonable efforts to timely file all reports required under the Exchange Act and otherwise timely take all actions necessary to permit the Warrantholder to sell or otherwise dispose of this Warrant and the shares of Common Stock issued on exercise hereof pursuant to Rule 144 promulgated under the Securities Act as amended and in effect from time to time, provided that the foregoing shall not apply in the event of a Merger Event following which the successor or surviving entity is not subject to the reporting requirements of the Exchange Act. If the Warrantholder proposes to sell Common Stock issuable upon the exercise of this Agreement in compliance with Rule 144 and subject to volume limitations and holding period restrictions under applicable federal and state securities laws, then, upon Warrantholder’s written request to the Company, the Company shall furnish to the Warrantholder, within ten (10) business days after receipt of such request, a written statement indicating the status of the Company’s compliance with the filing and other requirements as set forth in paragraph (c)(1) of Rule 144.

SECTION 10. REPRESENTATIONS AND COVENANTS OF THE WARRANTHOLDER.

This Agreement has been entered into by the Company in reliance upon the following representations and covenants of the Warrantholder:

(a) **Investment Purpose.** This Warrant and the shares issued on exercise hereof will be acquired for investment and not with a view to the sale or distribution of any part thereof in violation of applicable federal and state securities laws, and the Warrantholder has no present intention of selling or engaging in any public distribution of the same except pursuant to a registration or exemption.

(b) **Private Issue.** The Warrantholder understands (i) that the Common Stock issuable upon exercise of this Agreement is not, as of the Effective Date, registered under the Securities Act or qualified under applicable state securities laws, and (ii) that the Company's reliance on exemption from such registration is predicated on the representations set forth in this Section 10.

(c) **Financial Risk.** The Warrantholder has such knowledge and experience in financial and business matters as to be capable of evaluating the merits and risks of its investment, and has the ability to bear the economic risks of its investment.

(d) **Accredited Investor.** Warrantholder is an "accredited investor" within the meaning of Rule 501 of Regulation D promulgated under the Securities Act, as presently in effect (“*Regulation D*”).

(e) **No Short Sales.** Warrantholder has not at any time on or prior to the Effective Date engaged in any short sales or equivalent transactions in the Common Stock. Warrantholder agrees that at all times from and after the Effective Date and on or before the expiration or earlier termination of this Warrant, it shall not engage in any short sales or equivalent transactions in the Common Stock.

SECTION 11. TRANSFERS.

Subject to compliance with applicable federal and state securities laws, this Agreement and all rights hereunder are transferable, in whole or in part, without charge to the holder hereof (except for transfer taxes) upon surrender of this Agreement properly endorsed. Each taker and holder of this Agreement, by taking or holding the same, consents and agrees that this Agreement, when endorsed in blank, shall be deemed negotiable, and that the holder hereof, when this Agreement shall have been so endorsed and its transfer recorded on the Company’s books, shall be treated by the Company and all other persons dealing with this Agreement as the absolute owner hereof for any purpose and as the person entitled to exercise the rights represented by this Agreement. The transfer of this Agreement shall be recorded on the books of the Company upon receipt by the Company of a notice of transfer in the form attached hereto as Exhibit III (the "**Transfer Notice**"), at its principal offices and the payment to the Company of all transfer taxes and other governmental charges imposed on such transfer. Until the Company receives such Transfer Notice, the Company may treat the registered owner hereof as the owner for all purposes. Notwithstanding anything herein or in any legend to the contrary, the Company shall not require an opinion of counsel in connection with any sale, assignment or other transfer by Warrantholder of this Warrant (or any portion hereof or any interest herein) or of any shares of Common Stock issued upon any exercise hereof to an affiliate (as defined in Regulation D) of Warrantholder, provided that such affiliate is an “accredited investor” as defined in Regulation D.

SECTION 12. MISCELLANEOUS.

(a) **Effective Date.** The provisions of this Agreement shall be construed and shall be given effect in all respects as if it had been executed and delivered by the Company on the date hereof. This Agreement shall be binding upon any successors or assigns of the Company.

(b) Remedies. In the event of any default hereunder, the non-defaulting party may proceed to protect and enforce its rights either by suit in equity and/or by action at law, including but not limited to an action for damages as a result of any such default, and/or an action for specific performance for any default where Warrantholder will not have an adequate remedy at law and where damages will not be readily ascertainable.

(c) No Impairment of Rights. The Company will not, by amendment of its Charter or through any other means, avoid or seek to avoid the observance or performance of any of the terms of this Agreement, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate in order to protect the rights of the Warrantholder against impairment. Notwithstanding the foregoing, nothing in this Section 12(c) shall negate or otherwise restrict or impair the Company's right to effect any change to the rights, preferences, privileges or restrictions associated with the shares of Common Stock so long as such changes do not adversely affect the rights, preferences, privileges or restrictions associated with the shares of Common Stock issuable upon exercise of this Warrant in a manner different from the effect that such changes have generally on the rights, preferences, privileges or restrictions associated with all other shares of Common Stock.

(d) Additional Documents. The Company agrees to supply such other documents as the Warrantholder may from time to time reasonably request.

(e) Attorneys' Fees. In any litigation, arbitration or court proceeding between the Company and the Warrantholder relating hereto, the prevailing party shall be entitled to reasonable attorneys' fees and expenses and all reasonable costs of proceedings incurred in enforcing this Agreement. For the purposes of this Section 12(e), attorneys' fees shall include without limitation reasonable fees incurred in connection with the following: (i) contempt proceedings; (ii) discovery; (iii) any motion, proceeding or other activity of any kind in connection with an insolvency proceeding; (iv) garnishment, levy, and debtor and third party examinations; and (v) post-judgment motions and proceedings of any kind, including without limitation any activity taken to collect or enforce any judgment.

(f) Severability. In the event any one or more of the provisions of this Agreement shall for any reason be held invalid, illegal or unenforceable, the remaining provisions of this Agreement shall be unimpaired, and the invalid, illegal or unenforceable provision shall be replaced by a mutually acceptable valid, legal and enforceable provision, which comes closest to the intention of the parties underlying the invalid, illegal or unenforceable provision.

(g) Notices. Except as otherwise provided herein, any notice, demand, request, consent, approval, declaration, service of process or other communication that is required, contemplated, or permitted under this Agreement or with respect to the subject matter hereof shall be in writing, and shall be deemed to have been validly served, given, delivered, and received upon the earlier of: (a) personal delivery to the party to be notified, (b) when sent by confirmed telex, electronic transmission or facsimile if sent during normal business hours of the recipient, if not, then on the next business day, (c) five days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt, and shall be addressed to the party to be notified as follows:

If to Warrantholder:

HERCULES CAPITAL, INC.
Legal Department
Attention: Chief Legal Officer and Manuel Henriquez
400 Hamilton Avenue, Suite 310
Palo Alto, California 94301
Facsimile: 650-473-9194
Telephone: 650-289-3060

If to the Company:

Genocea Biosciences, Inc.
Attention: Chief Executive Officer
100 Acorn Park Drive, 5th Floor
Cambridge, Massachusetts 02140
Facsimile: 617-500-0969
Telephone: 617-674-8260
Email: chip.clark@genocea.com

or to such other address as each party may designate for itself by like notice.

(h) Entire Agreement; Amendments. This Agreement constitutes the entire agreement and understanding of the parties hereto in respect of the subject matter hereof, and supersedes and replaces in their entirety any prior proposals, term sheets, letters, negotiations or other documents or agreements, whether written or oral, with respect to the subject matter hereof. None of the terms of this Agreement may be amended except by an instrument executed by each of the parties hereto.

(i) Headings. The various headings in this Agreement are inserted for convenience only and shall not affect the meaning or interpretation of this Agreement or any provisions hereof.

(j) No Strict Construction. The parties hereto have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the parties hereto and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provisions of this Agreement.

(k) No Waiver. Except for the requirement that this Warrant be exercised (or be deemed exercised), if at all, during the term of the Warrant, no omission or delay by Warrantholder at any time to enforce any right or remedy reserved to it, or to require performance of any of the terms, covenants or provisions hereof by Warrantholder at any time designated, shall be a waiver of any such right or remedy to which Warrantholder is entitled, nor shall it in any way affect the right of Warrantholder to enforce such provisions thereafter during the term of this Agreement.

(l) Survival. All agreements, representations and warranties contained in this Agreement or in any document delivered pursuant hereto shall be for the benefit of Warrantholder and shall survive the execution and delivery of this Agreement and the expiration or other termination of this Agreement.

(m) Governing Law. This Agreement has been negotiated and delivered to Warrantholder in the State of California, and shall be deemed to have been accepted by Warrantholder in the State of California. Delivery of Common Stock to Warrantholder by the Company under this Agreement is due in the State of California. This Agreement shall be governed by, and construed and enforced in accordance with, the laws of the State of California, excluding conflict of laws principles that would cause the application of laws of any other jurisdiction.

(n) Consent to Jurisdiction and Venue. All judicial proceedings arising in or under or related to this Agreement may be brought in any state or federal court of competent jurisdiction located in the State of California. By execution and delivery of this Agreement, each party hereto generally and unconditionally: (a) consents to personal jurisdiction in Santa Clara County, State of California; (b) waives any objection as to jurisdiction or venue in Santa Clara County, State of California; (c) agrees not to assert any defense based on lack of jurisdiction or venue in the aforesaid courts; and (d) irrevocably agrees to be bound by any judgment rendered thereby in connection with this Agreement. Service of process on any party hereto in any action arising out of or relating to this Agreement shall be effective if given in accordance with the requirements for notice set forth in Section 12(g), and shall be deemed effective and received as set forth in Section 12(g). Nothing herein shall affect the right to serve process in any other manner permitted by law or shall limit the right of either party to bring proceedings in the courts of any other jurisdiction.

(o) Mutual Waiver of Jury Trial. Because disputes arising in connection with complex financial transactions are most quickly and economically resolved by an experienced and expert person and the parties wish applicable state and federal laws to apply (rather than arbitration rules), the parties desire that their disputes arising under or in connection with this Warrant be resolved by a judge applying such applicable laws. EACH OF THE COMPANY AND WARRANTHOLDER SPECIFICALLY WAIVES ANY RIGHT IT MAY HAVE TO TRIAL BY JURY OF ANY CAUSE OF ACTION, CLAIM, CROSS-CLAIM, COUNTERCLAIM, THIRD PARTY CLAIM OR ANY OTHER CLAIM (COLLECTIVELY, "CLAIMS") ASSERTED BY THE COMPANY AGAINST WARRANTHOLDER OR ITS ASSIGNEE OR BY WARRANTHOLDER OR ITS ASSIGNEE AGAINST THE COMPANY RELATING TO THIS WARRANT. This waiver extends to all such Claims, including Claims that involve persons or entities other than the Company and Warrantholder; Claims that arise out of or are in any way connected to the relationship between the Company and Warrantholder; and any Claims for damages, breach of contract, specific performance, or any equitable or legal relief of any kind, arising out of this Agreement.

(p) Arbitration. If the Mutual Waiver of Jury Trial set forth in Section 12(p) is ineffective or unenforceable, the parties agree that all Claims shall be submitted to binding arbitration in accordance with the commercial arbitration rules of JAMS (the "Rules"), such arbitration to occur before one arbitrator, which arbitrator shall be a retired California state judge or a retired Federal court judge. Such proceeding shall be conducted in Santa Clara County, State of California, with California rules of evidence and discovery applicable to such arbitration. The decision of the arbitrator shall be binding on the parties, and shall be final and nonappealable to the maximum extent permitted by law. Any judgment rendered by the arbitrator may be entered in a court of competent jurisdiction and enforced by the prevailing party as a final judgment of such court.

(q) Pre-arbitration Relief. In the event Claims are to be resolved by arbitration, either party may seek from a court of competent jurisdiction identified in Section 12(o), any prejudgment order, writ or other relief and have such prejudgment order, writ or other relief enforced to the fullest extent permitted by law notwithstanding that all Claims are otherwise subject to resolution by binding arbitration.

(r) Counterparts. This Agreement and any amendments, waivers, consents or supplements hereto may be executed in any number of counterparts (including by facsimile or electronic delivery (PDF)), and by different parties hereto in separate counterparts, each of which when so delivered shall be deemed an original, but all of which counterparts shall constitute but one and the same instrument.

(s) Specific Performance. The parties hereto hereby declare that it is impossible to measure in money the damages which will accrue to Warrantholder by reason of the Company's failure to perform any of the obligations under this Agreement and agree that the terms of this Agreement shall be specifically enforceable by Warrantholder. If Warrantholder institutes any action or proceeding to specifically enforce the provisions hereof, any person against whom such action or proceeding is brought hereby waives the claim or defense therein that Warrantholder has an adequate remedy at law, and such person shall not offer in any such action or proceeding the claim or defense that such remedy at law exists.

(t) Lost, Stolen, Mutilated or Destroyed Warrant. If this Warrant is lost, stolen, mutilated or destroyed, the Company may, on

such terms as to indemnify or otherwise as it may reasonably impose (which shall, in the case of a mutilated Warrant, include the surrender thereof), issue a new Warrant of like denomination and tenor as this Warrant so lost, stolen, mutilated or destroyed. Any such new Warrant shall constitute an original contractual obligation of the Company, whether or not the allegedly lost, stolen, mutilated or destroyed Warrant shall be at any time enforceable by anyone.

(u) Legends. To the extent required by applicable laws, this Warrant and the shares of Common Stock issuable hereunder (and the securities issuable, directly or indirectly, upon conversion of such shares of Common Stock, if any) may be imprinted with a restricted securities legend in substantially the following form:

THIS SECURITY HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR ANY APPLICABLE STATE SECURITIES LAWS, AND MAY NOT BE SOLD, PLEDGED OR OTHERWISE TRANSFERRED WITHOUT AN EFFECTIVE REGISTRATION THEREOF UNDER THE ACT AND ANY APPLICABLE STATE SECURITIES LAWS, OR PURSUANT TO RULE 144 OR AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have caused this Warrant Agreement to be executed by its officers thereunto duly authorized as of the Effective Date.

COMPANY: GENOCEA BIOSCIENCES, INC.

By: /s/ William D. Clark
Name: William D. Clark
Title: President, CEO & Secretary

IN WITNESS WHEREOF, the parties hereto have caused this Warrant Agreement to be executed by its officers thereunto duly authorized as of the Effective Date.

WARRANTHOLDER: HERCULES CAPITAL, INC.

By: /s/ Melanie Grace
Name: Melanie Grace
Title: Secretary

EXHIBIT I

NOTICE OF EXERCISE

To: [_____]

- (1) The undersigned Warrantholder hereby elects to purchase [_____] shares of the Common Stock of [_____], pursuant to the terms of the Agreement dated the [_____] day of [_____, ____] (the "Agreement") between [_____] and the Warrantholder, and tenders herewith payment of the Purchase Price in full, together with all applicable transfer taxes, if any. [NET ISSUANCE: elects pursuant to Section 3(a) of the Agreement to effect a Net Issuance.]
- (2) Please issue a certificate or certificates or book entry units representing said shares of Common Stock in the name of the undersigned or in such other name as is specified below.

(Name)

(Address)

WARRANTHOLDER: HERCULES CAPITAL, INC.

By: _____
Name: _____
Title: _____

EXHIBIT II

1. ACKNOWLEDGMENT OF EXERCISE

The undersigned [_____], hereby acknowledge receipt of the "Notice of Exercise" from Hercules Capital, Inc. to purchase [_____] shares of the Common Stock of [_____], pursuant to the terms of the Warrant, and further acknowledges that [_____] shares remain subject to purchase under the terms of the Warrant.

COMPANY: [_____]

By: _____
Title: _____
Date: _____

EXHIBIT III

TRANSFER NOTICE

(To transfer or assign the foregoing Warrant execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby transferred and assigned to

(Please Print)

whose address is _____

Dated: _____

Holder's Signature: _____

Holder's Address: _____

Signature Guaranteed: _____

NOTE: The signature to this Transfer Notice must correspond with the name as it appears on the face of the Agreement, without alteration or enlargement or any change whatever. Officers of corporations and those acting in a fiduciary or other representative capacity should file proper evidence of authority to assign the foregoing Agreement.

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AMENDMENT TO EQUITY RIGHTS LETTER AGREEMENT

THIS AMENDMENT TO EQUITY RIGHTS LETTER AGREEMENT (this "Amendment") is made effective as of April 24, 2018 by and between Hercules Capital, Inc., a Maryland corporation f/k/a Hercules Technology Growth Capital, Inc. ("Hercules") and Genocea Biosciences, Inc., a Delaware corporation (the "Company").

WHEREAS, Hercules and the Company are parties to that certain letter agreement dated November 20, 2014 pursuant to which Hercules has certain rights to purchase Company equity securities from the Company from time to time (the "Equity Rights Letter"); and

WHEREAS, in connection with certain modifications of even date herewith to the loan arrangement between Hercules and the Company, and as additional consideration to Hercules for its agreements in connection therewith, the parties desire to amend the Equity Rights Letter in the manner hereinafter set forth;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficient of which are hereby acknowledged, the parties agree as follows:

1. Amendments to Equity Rights Letter. The Equity Rights Letter is hereby amended as follows:

(a) the capitalized term "Loan Agreement" therein shall, from and after the date hereof, mean and refer to that certain Amended and Restated Loan Agreement of even date herewith between Hercules and the Company, as amended and in effect from time to time; and

(b) the capitalized term "Warrant" therein shall, from and after the date hereof, mean and refer to that certain Warrant Agreement of even date herewith between the Company and Hercules, as amended and in effect from time to time.

2. No Other Amendments. Except as specifically amended hereby, the Equity Rights Letter shall remain in full force and effect as originally written.

3. Governing Law. This Amendment shall be governed by, and construed and enforced in accordance with, the laws of the State of California, excluding conflict of laws principles that would cause the application of laws of any other jurisdiction.

[Remainder of page left blank intentionally; signature page follows]

IN WITNESS WHEREOF, the parties have executed this Amendment to Equity Rights Letter Agreement as of the date first above written.

HERCULES CAPITAL, INC.

By: /s/ Melanie Grace _____
Name: Melanie Grace
Title: Secretary/ GC

GENOCEA BIOSCIENCES, INC.

By: /s/ William D. Clark _____

Name: William D. Clark

Title: President, CEO & Secretary