

**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): February 11, 2019

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.

On February 11, 2019, Genocea Biosciences, Inc. (the “Company”) entered into a Subscription Agreement (the “Subscription Agreement”) with certain purchasers identified on the signature pages thereto (the “Purchasers”), pursuant to which the Company will offer to the Purchasers, in an unregistered offering, shares of common stock, par value \$0.001 per share (the “Common Stock”), and warrants to purchase shares of Common Stock, in two closings.

The first closing is anticipated to occur on February 14, 2019 (the “Initial Closing”), subject to the satisfaction of customary closing conditions. The Company will offer 25,599,979 shares of Common Stock and, to one Purchaser and its affiliates in lieu of shares of Common Stock, a pre-funded warrant to purchase 4,250,000 shares of common stock (the “Pre-Funded Warrant”), and accompanying warrants (the “Warrants” and together with the Common Stock and Pre-Funded Warrants, the “Units”) to purchase an aggregate of 7,462,494 shares of Common Stock (the “Warrant Shares”) at a purchase price of \$0.5026 per Unit for aggregate gross proceeds to the Company of approximately \$15.0 million, before deducting fees to the placement agents and other estimated offering expenses payable by the Company. The Warrants will expire five (5) years following the Initial Closing (subject to early termination as noted below), will have an exercise price of \$0.5656 per Warrant Share, and are immediately exercisable upon issuance. The Pre-Funded Warrants will expire twenty (20) years following the Initial Closing, will have an exercise price of \$0.01 per share, and are immediately exercisable upon issuance. The exercise price and number of shares of Common Stock issuable upon the exercise of the Warrants and the Pre-Funded Warrants will be subject to adjustment in the event of any stock dividends and splits, reverse stock split, recapitalization, reorganization or similar transaction, as described in the Warrants and the Pre-Funded Warrants.

Contingent upon satisfactory top-line results from Part A of its Phase 1/2a clinical trial for its lead cancer vaccine candidate, GEN-009 (the “Data”), the Company will have the option to conduct a second closing (the “Second Closing”) and will offer up to an additional \$24.2 million in shares of Common Stock to the Purchasers at a purchase price per share that is equal to the greater of \$0.4713 per share and a per share price that is derived from the volume weighted average price of the Common Stock from the date the Company releases the Data through the date the Company exercises of its option to proceed with the Second Closing. If a Purchaser does not purchase at least 50% of the shares of Common Stock that it specified to purchase in the Second Closing (each such Purchaser, a “Non-Participating Purchaser”), it will forfeit any unexercised Warrants purchased in the first Closing as the Company’s sole remedy for such failure. The other Purchasers that are not Non-Participating Purchasers will have the option, but not the obligation, to purchase the shares of Common Stock allocated to the Non-Participating Purchasers in the Second Closing.

The Company will file a resale registration statement with the Securities and Exchange Commission (the “SEC”) as soon as practicable, and in all events within 60 days after the Initial Closing, to register the resale of the securities issued at the time of the Initial Closing or issuable in connection with the Second Closing.

Cantor Fitzgerald & Co. is acting as the lead placement agent for the Company in connection with the offering. Robert W. Baird & Co. Incorporated, Needham & Company LLC and H.C. Wainwright & Co., LLC are acting as co-placement agents for the Company in connection with the offering.

The foregoing summaries of the offering, the securities to be issued in connection therewith, the Subscription Agreement, the Pre-Funded Warrants and the Warrants do not purport to be complete and are qualified in their entirety by reference to the definitive transaction documents. Copies of the forms of Pre-Funded Warrant and the Warrant are attached hereto as Exhibits 4.1 and 4.2, respectively, and are incorporated herein by reference. The foregoing description of the Subscription Agreement does not purport to be complete and is qualified in its entirety by reference to the Subscription Agreement, a copy of which the Company intends to file with the SEC as an exhibit to its Quarterly Report on Form 10-Q for the quarter ended March 31, 2019.

On February 12, 2019, the Company issued a press release announcing the offering described above, a copy of which is attached hereto as Exhibit 99.1.

Item 3.02 Unregistered Sales of Equity Securities.

To the extent required by Item 3.02 of Form 8-K, the information regarding the Common Stock and Warrants set forth under Item 1.01 of this Form 8-K is incorporated by reference in this Item 3.02. The Company issued the Common Stock and Warrants in reliance on the exemption from registration provided for under Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"). The Company relied on this exemption from registration for private placements based in part on the representations made by the Purchasers, including the representations with respect to each Purchaser's status as an accredited investor, as such term is defined in Rule 501(a) of the Securities Act, and each Purchaser's investment intent.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

- 4.1 [Form of Pre-Funded Warrant](#)
 - 4.2 [Form of Warrant](#)
 - 99.1 [Press Release, dated February 12, 2019](#)
-

SIGNATURE

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 thereunto duly authorized.

GENOCEA BIOSCIENCES, INC.

Dated: February 12, 2019

By: /s/ Derek Meisner
Name: Derek Meisner
Title: Senior Vice President and General Counsel

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS.

CLASS B WARRANT NO. 2019-[] NUMBER OF SHARES: []
DATE OF ISSUANCE: February 14, 2019 (subject to adjustment hereunder)
EXPIRATION DATE: February 14, 2039

CLASS B PRE-FUNDED WARRANT TO PURCHASE SHARES
OF COMMON STOCK OF
GENOCEA BIOSCIENCES, INC.

This Class B Warrant (the "Warrant") is issued by Genoclea Biosciences, Inc., a Delaware corporation (the "Company"), to [], or its registered assigns (including any successors or assigns, the "Holder"), and is subject to the terms and conditions set forth below. The Warrant is being issued pursuant to a Warrant Agreement between the Company and Computershare Inc., a Delaware corporation ("Computershare"), and its fully owned subsidiary Computershare Trust Company, N.A., a national banking association (collectively with Computershare, the "Warrant Agent").

1. EXERCISE OF WARRANT.

(a) Number and Exercise Price of Warrant Shares; Expiration Date. Subject to the terms and conditions set forth herein, the Holder is entitled to purchase from the Company up to [] shares of the Company's Common Stock, \$0.001 par value per share (the "Common Stock") (as adjusted from time to time pursuant to the provisions of this Warrant) (the "Warrant Shares") on or before 5:00 p.m. New York City time on February 14, 2039 (the "Expiration Date"). The aggregate exercise price of this Warrant of \$0.5026, except for a nominal exercise price of \$0.01 per Warrant Share, was paid to the Company on or prior to the date of issuance of this Warrant, and, consequently, no additional consideration (other than the nominal exercise price of \$0.01 per Warrant Share) shall be required to be paid by the Holder to effect any exercise of this Warrant. The Holder shall not be entitled to return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever, including in the event this Warrant shall not have been exercised prior to the Expiration Date. The remaining unpaid exercise price per share of Common Stock under this Warrant shall be \$0.01, subject to adjustment as provided herein (the "Exercise Price"). Capitalized terms used and not otherwise defined herein shall have

the meanings set forth in that certain Subscription Agreement dated as of February 11, 2019, among the Company and the purchasers signatory thereto.

(b) Method of Exercise. While this Warrant remains outstanding and exercisable in accordance with Section 1(a) above, the Holder may exercise this Warrant in whole or in part in accordance with Section 5 by either:

(1) wire transfer to the Company or cashier's check drawn on a United States bank made payable to the order of the Company, or

(2) exercising of the right to credit the Exercise Price against the Fair Market Value (as defined below) of the Warrant Shares (as defined below) at the time of exercise (the "Net Exercise") pursuant to Section 1(c).

(c) Net Exercise. At any time the Holder may elect to exercise this Warrant by Net Exercise pursuant to this Section 1(c). At any time that this Warrant may be exercised by Net Exercise pursuant to this Section 1(c), if the Company shall receive written notice from the Holder at the time of exercise of this Warrant that the Holder elects to Net Exercise the Warrant, the Company shall deliver to such Holder (without payment by the Holder of any exercise price in cash) that number of Warrant Shares computed using the following formula:

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

Where

X = The number of Warrant Shares to be issued to the Holder.

Y = The number of Warrant Shares purchasable under this Warrant or, if only a portion of the Warrant is being exercised, the portion of the Warrant being cancelled (at the date of such calculation).

A = The Fair Market Value of one share of Common Stock (at the date of such calculation).

B = The Exercise Price (as adjusted to the date of such calculations).

The "Fair Market Value" of one share of Common Stock shall mean (x) the last reported sale price and, if there are no sales, the last reported bid price, of the Common Stock on the last trading day prior to the date of exercise on the trading market on which the Common Stock is listed as reported by Bloomberg Financial Markets (or a comparable reporting service of national reputation selected by the Company and reasonably acceptable to the Holder if Bloomberg Financial Markets is not then reporting sales prices of the Common Stock) (collectively, "Bloomberg"), or (y) if the foregoing does not apply, the last sales price of such security in the over-the-counter market on the pink sheets by Pink Sheets LLC (formerly the National Quotation Bureau, Inc.) (the "pink sheets") or bulletin board for such security as reported by Bloomberg, or if no sales price is so

reported, the last bid price of the Common Stock as reported by Bloomberg or (z) if the fair market value cannot be calculated on any of the foregoing bases, the fair market value determined by the Company's Board of Directors in good faith.

(d) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed.

(e) Deemed Exercise. In the event that immediately prior to the close of business on the Expiration Date, the Fair Market Value of one share of Common Stock (as determined in accordance with Section 1(c) above) is greater than the then applicable Exercise Price, this Warrant shall be deemed to be automatically exercised on a net exercise issue basis pursuant to Section 1(c) above, and the Company shall deliver the applicable number of shares of Common Stock to the Holder pursuant to the provisions of Section 1(c) above and this Section 1(e).

2. CERTAIN ADJUSTMENTS.

(a) Adjustment of Number of Warrant Shares and Exercise Price. The number and kind of Warrant Shares purchasable upon exercise of this Warrant and the Exercise Price shall be subject to adjustment from time to time as follows:

(1) Subdivisions, Combinations and Other Issuances. If the Company shall at any time after the Date of Issuance but prior to the Expiration Date subdivide its shares of capital stock of the same class as the Warrant Shares, by split-up or otherwise, or combine such shares of capital stock, or issue additional shares of capital stock as a dividend with respect to any shares of such capital stock, the number of Warrant Shares issuable on the exercise of this Warrant shall forthwith be proportionately increased in the case of a subdivision or stock dividend, or proportionately decreased in the case of a combination. Appropriate adjustments shall also be made to the Exercise Price payable per share, but the aggregate Exercise Price payable for the total number of Warrant Shares purchasable under this Warrant (as adjusted) shall remain the same. Any adjustment under this Section 2(a)(1) shall become effective at the close of business on the date the subdivision or combination becomes effective, or as of the record date of such dividend, or in the event that no record date is fixed, upon the making of such dividend.

(2) Reorganizations or Mergers. In case of any reclassification, capital reorganization or change in the capital stock of the Company (other than as a result of a subdivision, combination or stock dividend provided for in Section 2(a)(1) above) that occurs after the Date of Issuance, then, as a condition of such reclassification, reorganization or change, lawful provision shall be made, and duly executed documents evidencing the same from the Company or its successor shall be delivered to the Holder, so that the Holder shall thereafter have the right at any time prior to the expiration of this Warrant to purchase, at a total price equal to that payable upon the exercise of this Warrant, the kind and amount of shares of stock and/or other securities or property (including, if applicable, cash) receivable in connection with such reclassification, reorganization or change by a holder of the same number and type of securities as were purchasable as Warrant Shares by the Holder immediately prior to such reclassification, reorganization or change. In any such case, appropriate provisions shall be made with respect to the rights and interest of the Holder so that the

provisions hereof shall thereafter be applicable with respect to any shares of stock or other securities or property deliverable upon exercise hereof, and appropriate adjustments shall be made to the Exercise Price payable hereunder, provided the aggregate Exercise Price shall remain the same (and, for the avoidance of doubt, this Warrant shall be exclusively exercisable for such shares of stock and/or other securities or property from and after the consummation of such reclassification or other change in the capital stock of the Company).

(3) Rights Upon Distribution of Assets. If the Company shall declare or make any dividend, other distribution of its assets (or rights to acquire its assets) or evidences of its indebtedness to holders of shares of Common Stock generally (which dividend or other distribution has not already been given to the Holder with respect to the Warrant Shares), by way of return of capital or otherwise not addressed by this Section 2 above (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, subdivision, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “Distribution”), at any time after the issuance of this Warrant and prior to the Expiration Date, then, in each such case the Holder shall be entitled (subject to the following proviso) to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including, without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution; provided, however, that the Holder shall only be permitted to take delivery of such Distribution if and to the extent the Holder exercises some or all of the Warrant (the portion of delivery of the Distribution shall be based on the pro rata portion of the Warrant Shares issuable upon the portion of the Warrant exercised as compared to the maximum number of Warrant Shares issuable upon complete exercise of the Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including, without limitation, the Beneficial Ownership Limitation)), provided that, to the extent that the Warrant has not been partially or completely exercised at the time of such Distribution, such portion of the Distribution shall be held in abeyance for the benefit of the Holder until the Holder has exercised the Warrant, at which time the Company shall issue to the Holder the pro-rata portion of such Distribution equivalent to that portion of this Warrant then exercised. Notwithstanding anything to the contrary contained herein, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder and its affiliates exceeding the Beneficial Ownership Limitation, if applicable pursuant to Section 5(c) herein, then the Holder shall not be entitled to participate in such Distribution to the extent of the Beneficial Ownership Limitation (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to the extent of any such excess) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times, if ever, as its right thereto would not result in the Holder and its affiliates exceeding the Beneficial Ownership Limitation, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) Notice of Adjustment. When any adjustment is required to be made in the number or kind of shares purchasable upon exercise of the Warrant, or in the Exercise Price, the Company shall promptly notify the Holder of such event and of the number of Warrant Shares or other securities or property thereafter purchasable upon exercise of this Warrant.

(c) Calculations. No adjustment in the Exercise Price shall be required unless such adjustment would require an increase or decrease of at least \$0.01 in such price; provided, however, that any adjustment which by reason of this Section 2(c) is not required to be made shall be carried forward and taken into account in any subsequent adjustments under this Section 2. All calculations under this Section 2 shall be made by the Company in good faith and shall be made to the nearest cent or to the nearest one hundredth of a share, as applicable. No adjustment need be made for a change in the par value or no par value of the Company's Common Stock.

(d) Treatment of Warrant upon a Change of Control.

(1) If, at any time while this Warrant is outstanding, there is a Change of Control (as defined below), then the Holder shall have the right thereafter to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Change of Control if it had been, immediately prior to such Change of Control, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant (the "Alternate Consideration"). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Change of Control, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Change of Control, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Change of Control. Any successor to the Company or surviving entity in such Change of Control shall issue to the Holder a new warrant substantially in the form of this Warrant and consistent with the foregoing provisions and evidencing the Holder's right to purchase the Alternate Consideration for the aggregate Exercise Price upon exercise thereof.

(2) Notice of a Change of Control. The Company shall provide written notice to the Holder of a Change of Control reasonably promptly after public announcement thereof (and, in any event, not less than twenty (20) trading days prior to the consummation of such Change of Control) and such notice shall include (i) the projected date of consummation of the Change of Control to the extent known at the time such notice is delivered and (ii) the expected consideration to be received by the Company's stockholders in such Change of Control.

(3) As used in this Warrant, a "Change of Control" shall mean (i) a merger or consolidation of the Company with another entity, in which the Company is not the survivor or the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting securities of the surviving entity, (ii) the sale, assignment, transfer, conveyance or other disposal of all or substantially all of the properties or assets or all or a majority of the outstanding voting securities of the Company, (iii) a purchase, tender or exchange

offer accepted by the holders of a majority of the outstanding voting shares of capital stock of the Company directly or indirectly, in one or more related transactions, (iv) a “person” or “group” (as these terms are used for purposes of Section 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) is or shall become the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of at least a majority of the outstanding shares of Common Stock of the Company through a stock purchase agreement or other business combination (including, without limitation, a reorganization, reclassification, spin off or scheme of arrangement) with another person, or (v) the Company has elected to reorganize, recapitalize or reclassify its Common Stock (other than to change domicile).

3. NO STOCKHOLDER RIGHTS. Until the exercise of this Warrant, the Holder shall not have, nor exercise, any rights as a stockholder of the Company (including without limitation the right to notification of stockholder meetings or the right to receive any notice or other communication concerning the business and affairs of the Company), except as provided in Section 8 below.

4. COVENANT TO PERFORM; NON-CIRCUMVENTION. The Company hereby covenants and agrees that the Company will at all times in good faith carry out all the provisions of this Warrant and will not, by amendment of its certificate of incorporation, bylaws or other organizational documents or through a Change of Control, dissolution, sale of assets or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as this Warrant is outstanding, take action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of this Warrant, 100% of the number of shares of Common Stock issuable upon exercise of this Warrant then outstanding.

5. MECHANICS OF EXERCISE. Delivery of Warrant Shares Upon Exercise. This Warrant may be exercised by the Holder hereof upon the delivery of a Notice of Exercise (the “Exercise Notice”) attached hereto as Exhibit A properly completed and duly executed by the Holder hereof, at the office of the Warrant Agent designated for such purpose together with this Warrant and payment in full of the Exercise Price (unless the Holder has elected to Net Exercise) then in effect with respect to the number of Warrant Shares as to which the Warrant is being exercised. This Warrant shall be deemed to have been exercised immediately prior to the close of business on the date of its surrender for exercise as provided above, and the person entitled to receive the Warrant Shares issuable upon such exercise shall be treated for all purposes as the holder of such shares of record as of the close of business on such date. Notwithstanding anything herein to the contrary (although the Holder may surrender the Warrant to, and receive a replacement Warrant from, the Company), the Holder shall not be required to physically surrender this Warrant to the Company or the Warrant Agent until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company or Warrant Agent for cancellation within three (3) trading days of the date the final

Exercise Notice is delivered to the Company. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. On or before the second (2nd) trading day following the date on which the Warrant Agent has received each of the Exercise Notice, this Warrant and the aggregate Exercise Price (or confirmation from the Company of the number of shares of Warrant Shares issuable in connection with a duly executed and delivered notice of Net Exercise), the Warrant Agent shall transmit by facsimile an acknowledgment of confirmation of receipt of the Exercise Notice to the Company's transfer agent ("Transfer Agent"). The Company shall deliver any objection to the Exercise Notice on or before the second trading day following the date on which the Company has received the Exercise Notice. On or before the second (2nd) trading day following the date on which the Warrant Agent has received the Exercise Notice and the aggregate Exercise Price (the "Share Delivery Date"), the Warrant Agent shall (X) provided that the Transfer Agent is participating in The Depository Trust Company ("DTC") Fast Automated Securities Transfer Program and either (i) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (ii) this Warrant is being exercised via cashless exercise and Rule 144 is available, upon the request of the Holder, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit Withdrawal Agent Commission system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, and (y) there is not an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (z) this Warrant is being exercised via cashless exercise and Rule 144 is not available, upon the request of the Holder, issue and dispatch by first class mail, postage prepaid, to the address as specified in the Exercise Notice, a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder is entitled pursuant to such exercise. Upon delivery of the Exercise Notice and the payment of the aggregate Exercise Price (or a duly executed and delivered notice of Net Exercise), the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder's DTC account or the date of delivery of the certificates or book-entry position evidencing such Warrant Shares, as the case may be. The Company shall pay any and all taxes (other than taxes based upon the income of the Holder) which may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant; provided, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the issue and delivery of shares of Common Stock in any name other than that of the Holder, in either case with respect to any income or transfer tax due by the Holder with respect to such shares of Common Stock issued upon exercise of this Warrant. The Warrant Agent shall not have any duty or obligation to take any action under any section of this Agreement that requires the payment of taxes and/or charges unless and until it is satisfied that all such payments have been made. Company's Failure to Timely Deliver Securities. If the Company shall fail for any reason or for no reason to issue to the Holder by the Share Delivery Date in compliance with the terms of this Section 5, a certificate or book entry position for the number of shares of Common Stock to which the Holder is entitled and register such shares of Common Stock on the Company's share register or to credit the Holder's balance account with DTC for such number of shares of Common Stock to which the Holder is entitled upon the Holder's

exercise of this Warrant, and if on or after such trading day the Holder purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Holder of shares of Common Stock issuable upon such exercise that the Holder anticipated receiving from the Company, then the Company shall, within three (3) trading days after the Holder's request and in the Holder's discretion, either (i) pay cash to the Holder in an amount equal to the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased less the Exercise Price (the "Buy-In Price"), at which point the Company's obligation to deliver such certificate or evidence of book entry position (and to issue such Warrant Shares) shall terminate, or (ii) promptly honor its obligation to deliver to the Holder a certificate or certificates or evidence of book entry position representing such Warrant Shares and pay cash to the Holder in an amount equal to the excess (if any) of the Buy-In Price over the product of (A) such number of shares of Common Stock, times (B) the closing bid price on the date of exercise. The Warrant Agent shall have no responsibility for any amounts that may be payable or paid to any Holder, person or entity under this Warrant for any such failure by the Company (or the Warrant Agent on the Company's behalf) and the Company shall indemnify and hold harmless the Warrant Agent against all claims made against the Warrant Agent for any such failure.

(c) [Holder's Exercise Limitation. Notwithstanding anything to the contrary contained in this Warrant, this Warrant shall not be exercisable by the Holder pursuant to Section 1 or otherwise, to the extent (but only to the extent) that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's affiliates, and any other persons acting as a group together with the Holder or any of the Holder's affiliates (such person, "Attribution Parties")), would beneficially own in excess of [4.99]% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant (the "Beneficial Ownership Limitation"); *provided*, that notwithstanding anything herein to the contrary, this limitation on exercise shall not be applicable to any person that beneficially owns 10.0% or more of the Company's outstanding Common Stock immediately prior to the exercise of this Warrant, but without giving effect to any shares of Common Stock underlying this Warrant]. Notwithstanding the forgoing, the Holder shall have the right to increase or decrease the Beneficial Ownership Limitation (to an amount not to exceed [19.99]% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant [if exceeding that limit would result in a change of control as set forth in Nasdaq Listing Rule 5635(b)]), with any increase to be effective only upon the Holder providing the Company with prior written notice of such increase, which shall be effective 61 days after delivery of such notice to the Company. To the extent the above limitation applies, the determination of whether this Warrant shall be exercisable (*vis-à-vis* other convertible, exercisable or exchangeable securities owned by the Holder or any of its Attribution Parties) and of which such securities shall be exercisable (as among all such securities owned by the Holder or any of its Attribution Parties) shall, subject to such Beneficial Ownership Limitation, be determined by the Holder, and the Company shall have no responsibility for determining the accuracy of the Holder's determination. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. For purposes of the calculation of the Beneficial Ownership Limitation, the aggregate number of shares of Common Stock beneficially owned by the Holder and its Attribution Parties shall include the

number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other convertible notes or convertible preferred stock or warrants) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Attribution Parties. Except as set forth in the preceding sentence, for purposes of this section, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 5(c), in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Securities and Exchange Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Company's transfer agent setting forth the number of shares of Common Stock outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 5(c) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant. Upon the reasonable written request of the Holder, the Company shall within three (3) trading days confirm orally or in writing to the Holder the number of shares of Common Stock then outstanding, including by virtue of any prior conversion or exercise of convertible or exercisable securities into Common Stock, including, without limitation, pursuant to this Warrant or securities issued pursuant to the Purchase Agreement.]

6. CERTIFICATE OF ADJUSTMENT. Whenever the Exercise Price or number or type of securities issuable upon exercise of this Warrant is adjusted, as herein provided, the Company shall, at its expense, promptly deliver to the Holder and the Warrant Agent a certificate of an officer of the Company setting forth the nature of such adjustment and showing in detail the facts upon which such adjustment is based. The Warrant Agent shall be fully protected in relying on such a certificate and shall have not be deemed to have any knowledge of the occurrence of an adjustment unless and until it has received such a certificate. In no event shall the Warrant Agent have any obligation to calculate any of the adjustments, all such calculations being the responsibility of the Company.

7. NOTICES. In the event of:

(a) any taking by the Company of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend (other than a cash dividend payable out of earned surplus of the Company) or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right; or

(b) any voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then and in each such event the Company will promptly mail or cause to be delivered to the Warrant Agent and Holder (or a permitted transferee) a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, and (ii) the date on which any such dissolution, liquidation or winding-up is to take place, and the time, if any, as of which the holders of record of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such dissolution, liquidation or winding-up. Such notice shall be delivered at least twenty (20) days prior to the date therein specified.

(c) Whenever any other notice is required to be given under this Warrant, unless otherwise provided herein, the Company shall provide prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefore.

8. REPLACEMENT OF WARRANTS. On receipt of evidence reasonably satisfactory to the Company and Warrant Agent of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, on delivery of an indemnity agreement reasonably satisfactory in form and amount to the Company and Warrant Agent or, in the case of any such mutilation, on surrender and cancellation of such Warrant, the Company at its expense will execute and deliver, in lieu thereof, a new Warrant of like tenor.

9. ISSUANCE OF NEW WARRANTS. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Sections 8 or 9, the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

10. NO FRACTIONAL SHARES. No fractional Warrant Shares or scrip representing fractional shares will be issued upon exercise of this Warrant. In lieu of any fractional shares which would otherwise be issuable, the Company shall pay cash equal to the product of such fraction multiplied by the Fair Market Value of one Warrant Share.

11. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

12. TRADING DAYS. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall be other than a day on which the Common Stock is traded (which for the avoidance of doubt includes a Saturday, Sunday or a legal U.S. holiday) on the Nasdaq Capital Market, or, if the Nasdaq Capital Market is not the principal trading market for the Common Stock or other such securities, as applicable, then on the principal securities exchange or securities market on which the Common Stock is then traded, then such action may be taken or such right may be exercised on the next succeeding day on which the Common Stock is so traded.

13. TRANSFERS; EXCHANGES.

(a) Subject to compliance with applicable federal and state securities laws and Section 7 hereof, this Warrant may be transferred by the Holder with respect to all of the Warrant Shares purchasable hereunder. For a transfer of this Warrant as an entirety by Holder, upon surrender of this Warrant to the Warrant Agent, together with the Notice of Assignment in the form attached hereto as Exhibit B properly completed and duly executed by the Holder, the Company shall issue a new Warrant of the same denomination to the assignee. Upon surrender of this Warrant to the Warrant Agent, together with the Notice of Assignment in the form attached hereto as Exhibit B properly completed and duly executed by the Holder accompanied by a signature guarantee from an eligible guarantor institution participating in a signature guarantee program approved by the Securities Transfer Association (a "signature guarantee"), for transfer of this Warrant with respect to a portion of the Warrant Shares purchasable hereunder, the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 9), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 9) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) This Warrant is exchangeable, without expense, at the option of the Holder, upon presentation and surrender hereof to the Warrant Agent for other warrants of different denominations entitling the holder thereof to purchase in the aggregate the same number of shares of Common Stock purchasable hereunder. This Warrant may be combined with other warrants that carry the same rights upon presentation hereof at the office of the Warrant Agent designated for such purpose together with a written notice specifying the denominations in which new warrants are to be issued to the Holder and signed by the Holder hereof. The term "Warrants" as used herein includes any warrants into which this Warrant may be divided or exchanged. All Warrant Certificates surrendered for the purpose of transfer, split up, combination or exchange, when surrendered to the Warrant Agent shall be accompanied by a signature guarantee.

(c) If, at the time of the surrender of this Warrant in connection with any transfer of this Warrant, the transfer of this Warrant shall not be either (i) registered pursuant to an effective

registration statement under the Securities Act and under applicable state securities or blue sky laws or (ii) eligible for resale pursuant to Rule 144, the Company may require, as a condition of allowing such transfer, that the Holder or transferee of this Warrant, as the case may be, provide to the Company an opinion of counsel selected by the Holder and reasonably acceptable to the Company, the form and substance of which opinion shall be reasonably satisfactory to the Company, to the effect that such transfer does not require registration of such transferred Warrant under the Securities Act.

(d) The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

14. GOVERNING LAW; VENUE. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. With respect to any disputes arising out of or related to this Warrant, the parties consent to the exclusive jurisdiction of, and venue in, the state courts in the State of New York (or in the event of exclusive federal jurisdiction, the courts of the District of New York). Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. **EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS WARRANT OR THE TRANSACTIONS CONTEMPLATED HEREBY.**

15. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price, the arithmetic calculation of the Warrant Shares or under Sections 2 or 6, the disputing party shall submit the disputed determinations or arithmetic calculations to the other party. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) trading days of such disputed determination or arithmetic calculation being submitted to the non-disputing party, then the Company shall, within two (2) trading days submit the dispute to an independent, reputable accountant. The Company shall cause, at the expense of the prevailing party, the accountant to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) trading days from the time it receives the disputed determinations or calculations. Such accountant's determination or calculation shall be binding upon all parties absent demonstrable error.

16. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies

available under this Warrant, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant.

17. CONSTRUCTION; HEADINGS. This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

18. SUCCESSORS AND ASSIGNS. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of the Holder. The provisions of this Warrant are intended to be for and the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

19. RESTRICTIONS. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, must comply with the applicable restrictions upon resale imposed by state and federal securities laws.

20. MISCELLANEOUS. All notices, requests, consents and other communications hereunder shall be in writing, shall be sent by confirmed electronic mail, or mailed by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, and shall be deemed given when so sent in the case of electronic mail transmission, or when so received in the case of mail or courier, and addressed as follows: (a) if to the Company, at Cambridge Discovery Park, 100 Acorn Park Drive, 5th Floor, Cambridge, MA 02140, Attention: Finance Department; with a copy to (which shall not constitute notice) Ropes & Gray LLP, Prudential Tower, 800 Boylston Street

Boston, MA 02199-3600, Attention: Marc Rubenstein and (b) if to the Holder, at such address or addresses (including copies to counsel) as may have been furnished by the Holder to the Company in writing. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provisions.

[Signature Page Follows]

IN WITNESS WHEREOF, this Common Stock Purchase Warrant is issued effective as of the date first set forth above.

GENOCEA BIOSCIENCES, INC.

By: __
Name:
Title:

SIGNATURE PAGE TO
WARRANT NO. 2019-«WARRANT NO»

EXHIBIT A

NOTICE OF INTENT TO EXERCISE
(To be signed only upon exercise of Warrant)

To: Genoccea Biosciences, Inc.

The undersigned, the Holder of the attached Warrant, hereby irrevocably elects to exercise the purchase right represented by such Warrant for, and to purchase thereunder, _____ shares of Common Stock of Genoccea Biosciences, Inc., a Delaware corporation (the "Company"), and (choose one)

_____ herewith makes payment of USD _____ thereof

or

_____ elects to Net Exercise the Warrant pursuant to Section 1(b)(2) thereof.

The undersigned requests that the certificates or book entry position evidencing the shares to be acquired pursuant to such exercise be issued in the name of, and delivered to _____, whose address is _____.

By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 5(c) of the Warrant to which this notice relates.

By its signature below the undersigned hereby represents and warrants that it is an "accredited investor" as defined in Rule 501(a) of Regulation D promulgated under the Securities Act of 1933, as amended, and agrees to be bound by the terms and conditions of the attached Warrant as of the date hereof, including Section 7 thereof.

DATED: _____

(Signature must conform in all respects to name of the Holder as specified on the face of the Warrant)

[Holder Name]
Address: _____

EXHIBIT B

NOTICE OF ASSIGNMENT FORM

FOR VALUE RECEIVED, [Holder Name] (the "Assignor") hereby sells, assigns and transfers all of the rights of the undersigned Assignor under the attached Warrant with respect to the number of shares of common stock of Genoclea Biosciences, Inc., a Delaware corporation (the "Company"), covered thereby set forth below, to the following "Assignee" and, in connection with such transfer, represents and warrants to the Company that the transfer is in compliance with Section 7 of the Warrant and applicable federal and state securities laws:

NAME OF ASSIGNEE

ADDRESS

Number of shares: _____

Dated: _____

Signature: _____

ASSIGNEE ACKNOWLEDGMENT

The undersigned Assignee acknowledges that it has reviewed the attached Warrant and by its signature below it hereby represents and warrants that it is an "accredited investor" as defined in Rule 501(a) of Regulation D promulgated under the Securities Act of 1933, as amended, and agrees to be bound by the terms and conditions of the Warrant as of the date hereof, including Section 7 thereof.

Signature: __

By: __

Its: __

Address:

[Signature guarantee]

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS.

CLASS B WARRANT NO. 2019-[] NUMBER OF SHARES: []
DATE OF ISSUANCE: February 14, 2019 (subject to adjustment hereunder)
EXPIRATION DATE: February 14, 2024

CLASS B WARRANT TO PURCHASE SHARES
OF COMMON STOCK OF
GENOCEA BIOSCIENCES, INC.

This Class B Warrant (the "Warrant") is issued by Genocea Biosciences, Inc., a Delaware corporation (the "Company"), to [], or its registered assigns (including any successors or assigns, the "Holder"), and is subject to the terms and conditions set forth below. The Warrant is being issued pursuant to a Warrant Agreement between the Company and Computershare Inc., a Delaware corporation ("Computershare"), and its fully owned subsidiary Computershare Trust Company, N.A., a national banking association (collectively with Computershare, the "Warrant Agent").

1. EXERCISE OF WARRANT.

(a) Number and Exercise Price of Warrant Shares; Expiration Date. Subject to the terms and conditions set forth herein, the Holder is entitled to purchase from the Company up to [] shares of the Company's Common Stock, \$0.001 par value per share (the "Common Stock") (as adjusted from time to time pursuant to the provisions of this Warrant) (the "Warrant Shares"), at a purchase price of \$0.5656 on February 14, 2024, and (ii) the Second Closing Date, if the Holder becomes a Non-Participating Purchaser (the "Expiration Date"). Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Subscription Agreement dated as of February 11, 2019, among the Company and the purchasers signatory thereto.

(b) Method of Exercise. While this Warrant remains outstanding and exercisable in accordance with Section 1(a) above, the Holder may exercise this Warrant in whole or in part in accordance with Section 5 by either:

(1) wire transfer to the Company or cashier's check drawn on a United States bank made payable to the order of the Company, or

(2) exercising of the right to credit the Exercise Price against the Fair Market Value (as defined below) of the Warrant Shares (as defined below) at the time of exercise (the "Net Exercise") pursuant to Section 1(c).

(c) Net Exercise. If at any time after the Effectiveness Date (as defined in the that certain Purchase Agreement, by and among the Company, the Holder and certain other purchasers of shares and warrants listed on the schedules thereto (the "Purchase Agreement")) there is no effective Resale Registration Statement registering the resale of the Warrant Shares by the Holder, then the Holder may elect to exercise this Warrant by Net Exercise pursuant to this Section 1(c). At any time that this Warrant may be exercised by Net Exercise pursuant to this Section 1(c), if the Company shall receive written notice from the Holder at the time of exercise of this Warrant that the Holder elects to Net Exercise the Warrant, the Company shall deliver to such Holder (without payment by the Holder of any exercise price in cash) that number of Warrant Shares computed using the following formula:

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

Where

X = The number of Warrant Shares to be issued to the Holder.

Y = The number of Warrant Shares purchasable under this Warrant or, if only a portion of the Warrant is being exercised, the portion of the Warrant being cancelled (at the date of such calculation).

A = The Fair Market Value of one share of Common Stock (at the date of such calculation).

B = The Exercise Price (as adjusted to the date of such calculations).

The "Fair Market Value" of one share of Common Stock shall mean (x) the last reported sale price and, if there are no sales, the last reported bid price, of the Common Stock on the last trading day prior to the date of exercise on the trading market on which the Common Stock is listed as reported by Bloomberg Financial Markets (or a comparable reporting service of national reputation selected by the Company and reasonably acceptable to the Holder if Bloomberg Financial Markets is not then reporting sales prices of the Common Stock) (collectively, "Bloomberg"), or (y) if the foregoing does not apply, the last sales price of such security in the over-the-counter market on the pink sheets by Pink Sheets LLC (formerly the National Quotation Bureau, Inc.) (the "pink sheets") or bulletin board for such security as reported by Bloomberg, or if no sales price is so reported, the last bid price of the Common Stock as reported by Bloomberg or (z) if the fair market value cannot be calculated on any of the foregoing bases, the fair market value determined by the Company's Board of Directors in good faith.

(d) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed.

(e) Deemed Exercise. In the event that immediately prior to the close of business on the Expiration Date, the Fair Market Value of one share of Common Stock (as determined in accordance with Section 1(c) above) is greater than the then applicable Exercise Price, this Warrant shall be deemed to be automatically exercised on a net exercise issue basis pursuant to Section 1(c) above, and the Company shall deliver the applicable number of shares of Common Stock to the Holder pursuant to the provisions of Section 1(c) above and this Section 1(e).

2. CERTAIN ADJUSTMENTS.

(a) Adjustment of Number of Warrant Shares and Exercise Price. The number and kind of Warrant Shares purchasable upon exercise of this Warrant and the Exercise Price shall be subject to adjustment from time to time as follows:

(1) Subdivisions, Combinations and Other Issuances. If the Company shall at any time after the Date of Issuance but prior to the Expiration Date subdivide its shares of capital stock of the same class as the Warrant Shares, by split-up or otherwise, or combine such shares of capital stock, or issue additional shares of capital stock as a dividend with respect to any shares of such capital stock, the number of Warrant Shares issuable on the exercise of this Warrant shall forthwith be proportionately increased in the case of a subdivision or stock dividend, or proportionately decreased in the case of a combination. Appropriate adjustments shall also be made to the Exercise Price payable per share, but the aggregate Exercise Price payable for the total number of Warrant Shares purchasable under this Warrant (as adjusted) shall remain the same. Any adjustment under this Section 2(a)(1) shall become effective at the close of business on the date the subdivision or combination becomes effective, or as of the record date of such dividend, or in the event that no record date is fixed, upon the making of such dividend.

(2) Reorganizations or Mergers. In case of any reclassification, capital reorganization or change in the capital stock of the Company (other than as a result of a subdivision, combination or stock dividend provided for in Section 2(a)(1) above) that occurs after the Date of Issuance, then, as a condition of such reclassification, reorganization or change, lawful provision shall be made, and duly executed documents evidencing the same from the Company or its successor shall be delivered to the Holder, so that the Holder shall thereafter have the right at any time prior to the expiration of this Warrant to purchase, at a total price equal to that payable upon the exercise of this Warrant, the kind and amount of shares of stock and/or other securities or property (including, if applicable, cash) receivable in connection with such reclassification, reorganization or change by a holder of the same number and type of securities as were purchasable as Warrant Shares by the Holder immediately prior to such reclassification, reorganization or change. In any such case, appropriate provisions shall be made with respect to the rights and interest of the Holder so that the provisions hereof shall thereafter be applicable with respect to any shares of stock or other securities or property deliverable upon exercise hereof, and appropriate adjustments shall be made to the Exercise Price payable hereunder, provided the aggregate Exercise Price shall remain the same (and, for the avoidance of doubt, this Warrant shall be exclusively exercisable for such shares of

stock and/or other securities or property from and after the consummation of such reclassification or other change in the capital stock of the Company).

(3) Rights Upon Distribution of Assets. If the Company shall declare or make any dividend, other distribution of its assets (or rights to acquire its assets) or evidences of its indebtedness to holders of shares of Common Stock generally (which dividend or other distribution has not already been given to the Holder with respect to the Warrant Shares), by way of return of capital or otherwise not addressed by this Section 2 above (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, subdivision, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “Distribution”), at any time after the issuance of this Warrant and prior to the Expiration Date, then, in each such case the Holder shall be entitled (subject to the following proviso) to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including, without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution; provided, however, that the Holder shall only be permitted to take delivery of such Distribution if and to the extent the Holder exercises some or all of the Warrant (the portion of delivery of the Distribution shall be based on the pro rata portion of the Warrant Shares issuable upon the portion of the Warrant exercised as compared to the maximum number of Warrant Shares issuable upon complete exercise of the Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including, without limitation, the Beneficial Ownership Limitation)), provided that, to the extent that the Warrant has not been partially or completely exercised at the time of such Distribution, such portion of the Distribution shall be held in abeyance for the benefit of the Holder until the Holder has exercised the Warrant, at which time the Company shall issue to the Holder the pro-rata portion of such Distribution equivalent to that portion of this Warrant then exercised. Notwithstanding anything to the contrary contained herein, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder and its affiliates exceeding the Beneficial Ownership Limitation, if applicable pursuant to Section 5(c) herein, then the Holder shall not be entitled to participate in such Distribution to the extent of the Beneficial Ownership Limitation (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to the extent of any such excess) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times, if ever, as its right thereto would not result in the Holder and its affiliates exceeding the Beneficial Ownership Limitation, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) Notice of Adjustment. When any adjustment is required to be made in the number or kind of shares purchasable upon exercise of the Warrant, or in the Exercise Price, the Company shall promptly notify the Holder of such event and of the number of Warrant Shares or other securities or property thereafter purchasable upon exercise of this Warrant.

(c) Calculations. No adjustment in the Exercise Price shall be required unless such adjustment would require an increase or decrease of at least \$0.01 in such price; provided, however, that any adjustment which by reason of this Section 2(c) is not required to be made shall be carried forward and taken into account in any subsequent adjustments under this Section 2. All calculations under this Section 2 shall be made by the Company in good faith and shall be made to the nearest cent or to the nearest one hundredth of a share, as applicable. No adjustment need be made for a change in the par value or no par value of the Company's Common Stock.

(d) Treatment of Warrant upon a Change of Control.

(1) If, at any time while this Warrant is outstanding, there is a Change of Control (as defined below), then the Holder shall have the right thereafter to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Change of Control if it had been, immediately prior to such Change of Control, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant (the "Alternate Consideration"). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Change of Control, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Change of Control, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Change of Control. Any successor to the Company or surviving entity in such Change of Control shall issue to the Holder a new warrant substantially in the form of this Warrant and consistent with the foregoing provisions and evidencing the Holder's right to purchase the Alternate Consideration for the aggregate Exercise Price upon exercise thereof.

(2) Notice of a Change of Control. The Company shall provide written notice to the Holder of a Change of Control reasonably promptly after public announcement thereof (and, in any event, not less than twenty (20) trading days prior to the consummation of such Change of Control) and such notice shall include (i) the projected date of consummation of the Change of Control to the extent known at the time such notice is delivered and (ii) the expected consideration to be received by the Company's stockholders in such Change of Control.

(3) As used in this Warrant, a "Change of Control" shall mean (i) a merger or consolidation of the Company with another entity, in which the Company is not the survivor or the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting securities of the surviving entity, (ii) the sale, assignment, transfer, conveyance or other disposal of all or substantially all of the properties or assets or all or a majority of the outstanding voting securities of the Company, (iii) a purchase, tender or exchange offer accepted by the holders of a majority of the outstanding voting shares of capital stock of the Company directly or indirectly, in one or more related transactions, (iv) a "person" or "group" (as these terms are used for purposes of Section 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) is or shall become the "beneficial owner" (as defined in

Rule 13d-3 under the Exchange Act), directly or indirectly, of at least a majority of the outstanding shares of Common Stock of the Company through a stock purchase agreement or other business combination (including, without limitation, a reorganization, reclassification, spin off or scheme of arrangement) with another person, or (v) the Company has elected to reorganize, recapitalize or reclassify its Common Stock (other than to change domicile).

3. NO STOCKHOLDER RIGHTS. Until the exercise of this Warrant, the Holder shall not have, nor exercise, any rights as a stockholder of the Company (including without limitation the right to notification of stockholder meetings or the right to receive any notice or other communication concerning the business and affairs of the Company), except as provided in Section 8 below.

4. COVENANT TO PERFORM; NON-CIRCUMVENTION. The Company hereby covenants and agrees that the Company will at all times in good faith carry out all the provisions of this Warrant and will not, by amendment of its certificate of incorporation, bylaws or other organizational documents or through a Change of Control, dissolution, sale of assets or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as this Warrant is outstanding, take action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of this Warrant, 100% of the number of shares of Common Stock issuable upon exercise of this Warrant then outstanding.

5. MECHANICS OF EXERCISE. Delivery of Warrant Shares Upon Exercise. This Warrant may be exercised by the Holder hereof upon the delivery of a Notice of Exercise (the "Exercise Notice") attached hereto as Exhibit A properly completed and duly executed by the Holder hereof, at the office of the Warrant Agent designated for such purpose together with this Warrant and payment in full of the Exercise Price (unless the Holder has elected to Net Exercise) then in effect with respect to the number of Warrant Shares as to which the Warrant is being exercised. This Warrant shall be deemed to have been exercised immediately prior to the close of business on the date of its surrender for exercise as provided above, and the person entitled to receive the Warrant Shares issuable upon such exercise shall be treated for all purposes as the holder of such shares of record as of the close of business on such date. Notwithstanding anything herein to the contrary (although the Holder may surrender the Warrant to, and receive a replacement Warrant from, the Company), the Holder shall not be required to physically surrender this Warrant to the Company or the Warrant Agent until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company or Warrant Agent for cancellation within three (3) trading days of the date the final Exercise Notice is delivered to the Company. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. On or before the second (2nd) trading day following

the date on which the Warrant Agent has received each of the Exercise Notice, this Warrant and the aggregate Exercise Price (or confirmation from the Company of the number of shares of Warrant Shares issuable in connection with a duly executed and delivered notice of Net Exercise), the Warrant Agent shall transmit by facsimile an acknowledgment of confirmation of receipt of the Exercise Notice to the Company's transfer agent ("Transfer Agent"). The Company shall deliver any objection to the Exercise Notice on or before the second trading day following the date on which the Company has received the Exercise Notice. On or before the second (2nd) trading day following the date on which the Warrant Agent has received the Exercise Notice and the aggregate Exercise Price (the "Share Delivery Date"), the Warrant Agent shall (X) provided that the Transfer Agent is participating in The Depository Trust Company ("DTC") Fast Automated Securities Transfer Program and either (i) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (ii) this Warrant is being exercised via cashless exercise and Rule 144 is available, upon the request of the Holder, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit Withdrawal Agent Commission system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, and (y) there is not an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (z) this Warrant is being exercised via cashless exercise and Rule 144 is not available, upon the request of the Holder, issue and dispatch by first class mail, postage prepaid, to the address as specified in the Exercise Notice, a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder is entitled pursuant to such exercise. Upon delivery of the Exercise Notice and the payment of the aggregate Exercise Price (or a duly executed and delivered notice of Net Exercise), the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder's DTC account or the date of delivery of the certificates or book-entry position evidencing such Warrant Shares, as the case may be. The Company shall pay any and all taxes (other than taxes based upon the income of the Holder) which may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant; provided, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the issue and delivery of shares of Common Stock in any name other than that of the Holder, in either case with respect to any income or transfer tax due by the Holder with respect to such shares of Common Stock issued upon exercise of this Warrant. The Warrant Agent shall not have any duty or obligation to take any action under any section of this Agreement that requires the payment of taxes and/or charges unless and until it is satisfied that all such payments have been made.Company's Failure to Timely Deliver Securities. If the Company shall fail for any reason or for no reason to issue to the Holder by the Share Delivery Date in compliance with the terms of this Section 5, a certificate or book entry position for the number of shares of Common Stock to which the Holder is entitled and register such shares of Common Stock on the Company's share register or to credit the Holder's balance account with DTC for such number of shares of Common Stock to which the Holder is entitled upon the Holder's exercise of this Warrant, and if on or after such trading day the Holder purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Holder of shares of Common Stock issuable upon such exercise that the Holder anticipated receiving from the Company, then the Company shall, within three (3) trading days after the Holder's request and

in the Holder's discretion, either (i) pay cash to the Holder in an amount equal to the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased less the Exercise Price (the "Buy-In Price"), at which point the Company's obligation to deliver such certificate or evidence of book entry position (and to issue such Warrant Shares) shall terminate, or (ii) promptly honor its obligation to deliver to the Holder a certificate or certificates or evidence of book entry position representing such Warrant Shares and pay cash to the Holder in an amount equal to the excess (if any) of the Buy-In Price over the product of (A) such number of shares of Common Stock, times (B) the closing bid price on the date of exercise. The Warrant Agent shall have no responsibility for any amounts that may be payable or paid to any Holder, person or entity under this Warrant for any such failure by the Company (or the Warrant Agent on the Company's behalf) and the Company shall indemnify and hold harmless the Warrant Agent against all claims made against the Warrant Agent for any such failure.

(c) Holder's Exercise Limitation. Notwithstanding anything to the contrary contained in this Warrant, this Warrant shall not be exercisable by the Holder pursuant to Section 1 or otherwise, to the extent (but only to the extent) that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's affiliates, and any other persons acting as a group together with the Holder or any of the Holder's affiliates (such person, "Attribution Parties")), would beneficially own in excess of [4.99]% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant (the "Beneficial Ownership Limitation"); *provided*, that notwithstanding anything herein to the contrary, this limitation on exercise shall not be applicable to any person that beneficially owns 10.0% or more of the Company's outstanding Common Stock immediately prior to the exercise of this Warrant, but without giving effect to any shares of Common Stock underlying this Warrant]. Notwithstanding the forgoing, the Holder shall have the right to increase or decrease the Beneficial Ownership Limitation (to an amount not to exceed [19.99]% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant [if exceeding that limit would result in a change of control as set forth in Nasdaq Listing Rule 5635(b)]), with any increase to be effective only upon the Holder providing the Company with prior written notice of such increase, which shall be effective 61 days after delivery of such notice to the Company. To the extent the above limitation applies, the determination of whether this Warrant shall be exercisable (vis-à-vis other convertible, exercisable or exchangeable securities owned by the Holder or any of its Attribution Parties) and of which such securities shall be exercisable (as among all such securities owned by the Holder or any of its Attribution Parties) shall, subject to such Beneficial Ownership Limitation, be determined by the Holder, and the Company shall have no responsibility for determining the accuracy of the Holder's determination. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. For purposes of the calculation of the Beneficial Ownership Limitation, the aggregate number of shares of Common Stock beneficially owned by the Holder and its Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Attribution Parties and (ii) exercise or conversion of

the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other convertible notes or convertible preferred stock or warrants) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Attribution Parties. Except as set forth in the preceding sentence, for purposes of this section, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 5(c), in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Securities and Exchange Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Company's transfer agent setting forth the number of shares of Common Stock outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 5(c) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant. Upon the reasonable written request of the Holder, the Company shall within three (3) trading days confirm orally or in writing to the Holder the number of shares of Common Stock then outstanding, including by virtue of any prior conversion or exercise of convertible or exercisable securities into Common Stock, including, without limitation, pursuant to this Warrant or securities issued pursuant to the Purchase Agreement.]

6. CERTIFICATE OF ADJUSTMENT. Whenever the Exercise Price or number or type of securities issuable upon exercise of this Warrant is adjusted, as herein provided, the Company shall, at its expense, promptly deliver to the Holder and the Warrant Agent a certificate of an officer of the Company setting forth the nature of such adjustment and showing in detail the facts upon which such adjustment is based. The Warrant Agent shall be fully protected in relying on such a certificate and shall have not be deemed to have any knowledge of the occurrence of an adjustment unless and until it has received such a certificate. In no event shall the Warrant Agent have any obligation to calculate any of the adjustments, all such calculations being the responsibility of the Company.

7. NOTICES. In the event of:

(a) any taking by the Company of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend (other than a cash dividend payable out of earned surplus of the Company) or other distribution, or any

right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right; or

(b) any voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then and in each such event the Company will promptly mail or cause to be delivered to the Warrant Agent and Holder (or a permitted transferee) a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, and (ii) the date on which any such dissolution, liquidation or winding-up is to take place, and the time, if any, as of which the holders of record of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such dissolution, liquidation or winding-up. Such notice shall be delivered at least twenty (20) days prior to the date therein specified.

(c) Whenever any other notice is required to be given under this Warrant, unless otherwise provided herein, the Company shall provide prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefore.

8. REPLACEMENT OF WARRANTS. On receipt of evidence reasonably satisfactory to the Company and Warrant Agent of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, on delivery of an indemnity agreement reasonably satisfactory in form and amount to the Company and Warrant Agent or, in the case of any such mutilation, on surrender and cancellation of such Warrant, the Company at its expense will execute and deliver, in lieu thereof, a new Warrant of like tenor.

9. ISSUANCE OF NEW WARRANTS. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Sections 8 or 9, the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

10. NO FRACTIONAL SHARES. No fractional Warrant Shares or scrip representing fractional shares will be issued upon exercise of this Warrant. In lieu of any fractional shares which would otherwise be issuable, the Company shall pay cash equal to the product of such fraction multiplied by the Fair Market Value of one Warrant Share.

11. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended and the Company may take any action herein prohibited, or omit

to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

12. TRADING DAYS. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall be other than a day on which the Common Stock is traded (which for the avoidance of doubt includes a Saturday, Sunday or a legal U.S. holiday) on the Nasdaq Capital Market, or, if the Nasdaq Capital Market is not the principal trading market for the Common Stock or other such securities, as applicable, then on the principal securities exchange or securities market on which the Common Stock is then traded, then such action may be taken or such right may be exercised on the next succeeding day on which the Common Stock is so traded.

13. TRANSFERS; EXCHANGES.

(a) Subject to compliance with applicable federal and state securities laws and Section 7 hereof, this Warrant may be transferred by the Holder with respect to all of the Warrant Shares purchasable hereunder. For a transfer of this Warrant as an entirety by Holder, upon surrender of this Warrant to the Warrant Agent, together with the Notice of Assignment in the form attached hereto as Exhibit B properly completed and duly executed by the Holder, the Company shall issue a new Warrant of the same denomination to the assignee. Upon surrender of this Warrant to the Warrant Agent, together with the Notice of Assignment in the form attached hereto as Exhibit B properly completed and duly executed by the Holder accompanied by a signature guarantee from an eligible guarantor institution participating in a signature guarantee program approved by the Securities Transfer Association (a "signature guarantee"), for transfer of this Warrant with respect to a portion of the Warrant Shares purchasable hereunder, the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 9), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 9) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) This Warrant is exchangeable, without expense, at the option of the Holder, upon presentation and surrender hereof to the Warrant Agent for other warrants of different denominations entitling the holder thereof to purchase in the aggregate the same number of shares of Common Stock purchasable hereunder. This Warrant may be combined with other warrants that carry the same rights upon presentation hereof at the office of the Warrant Agent designated for such purpose together with a written notice specifying the denominations in which new warrants are to be issued to the Holder and signed by the Holder hereof. The term "Warrants" as used herein includes any warrants into which this Warrant may be divided or exchanged. All Warrant Certificates surrendered for the purpose of transfer, split up, combination or exchange, when surrendered to the Warrant Agent shall be accompanied by a signature guarantee.

(c) If, at the time of the surrender of this Warrant in connection with any transfer of this Warrant, the transfer of this Warrant shall not be either (i) registered pursuant to an effective registration statement under the Securities Act and under applicable state securities or blue sky laws or (ii) eligible for resale pursuant to Rule 144, the Company may require, as a condition of allowing

such transfer, that the Holder or transferee of this Warrant, as the case may be, provide to the Company an opinion of counsel selected by the Holder and reasonably acceptable to the Company, the form and substance of which opinion shall be reasonably satisfactory to the Company, to the effect that such transfer does not require registration of such transferred Warrant under the Securities Act.

(d) The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

14. GOVERNING LAW; VENUE. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. With respect to any disputes arising out of or related to this Warrant, the parties consent to the exclusive jurisdiction of, and venue in, the state courts in the State of New York (or in the event of exclusive federal jurisdiction, the courts of the District of New York). Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. **EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS WARRANT OR THE TRANSACTIONS CONTEMPLATED HEREBY.**

15. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price, the arithmetic calculation of the Warrant Shares or under Sections 2 or 6, the disputing party shall submit the disputed determinations or arithmetic calculations to the other party. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) trading days of such disputed determination or arithmetic calculation being submitted to the non-disputing party, then the Company shall, within two (2) trading days submit the dispute to an independent, reputable accountant. The Company shall cause, at the expense of the prevailing party, the accountant to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) trading days from the time it receives the disputed determinations or calculations. Such accountant's determination or calculation shall be binding upon all parties absent demonstrable error.

16. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant, at law or in equity (including a decree of specific performance and/

or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant.

17. CONSTRUCTION; HEADINGS. This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

18. SUCCESSORS AND ASSIGNS. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of the Holder. The provisions of this Warrant are intended to be for and the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

19. RESTRICTIONS. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, must comply with the applicable restrictions upon resale imposed by state and federal securities laws.

20. MISCELLANEOUS. All notices, requests, consents and other communications hereunder shall be in writing, shall be sent by confirmed electronic mail, or mailed by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, and shall be deemed given when so sent in the case of electronic mail transmission, or when so received in the case of mail or courier, and addressed as follows: (a) if to the Company, at Cambridge Discovery Park, 100 Acorn Park Drive, 5th Floor, Cambridge, MA 02140, Attention: Finance Department; with a copy to (which shall not constitute notice) Ropes & Gray LLP, Prudential Tower, 800 Boylston Street

Boston, MA 02199-3600, Attention: Marc Rubenstein and (b) if to the Holder, at such address or addresses (including copies to counsel) as may have been furnished by the Holder to the Company in writing. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provisions.

[Signature Page Follows]

IN WITNESS WHEREOF, this Common Stock Purchase Warrant is issued effective as of the date first set forth above.

GENOCEA BIOSCIENCES, INC.

By:___

Name:

Title:

SIGNATURE PAGE TO
WARRANT NO. 2019-«WARRANT NO»

EXHIBIT A

NOTICE OF INTENT TO EXERCISE
(To be signed only upon exercise of Warrant)

To: Genocea Biosciences, Inc.

The undersigned, the Holder of the attached Warrant, hereby irrevocably elects to exercise the purchase right represented by such Warrant for, and to purchase thereunder, _____ shares of Common Stock of Genocea Biosciences, Inc., a Delaware corporation (the "Company"), and (choose one)

_____ herewith makes payment of USD _____ thereof

or

_____ elects to Net Exercise the Warrant pursuant to Section 1(b)(2) thereof.

The undersigned requests that the certificates or book entry position evidencing the shares to be acquired pursuant to such exercise be issued in the name of, and delivered to _____, whose address is _____.

By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 5(c) of the Warrant to which this notice relates.

By its signature below the undersigned hereby represents and warrants that it is an "accredited investor" as defined in Rule 501(a) of Regulation D promulgated under the Securities Act of 1933, as amended, and agrees to be bound by the terms and conditions of the attached Warrant as of the date hereof, including Section 7 thereof.

DATED: _____

(Signature must conform in all respects to name of the Holder as specified on the face of the Warrant)

[Holder Name]
Address: _____

EXHIBIT B

NOTICE OF ASSIGNMENT FORM

FOR VALUE RECEIVED, [Holder Name] (the "Assignor") hereby sells, assigns and transfers all of the rights of the undersigned Assignor under the attached Warrant with respect to the number of shares of common stock of Genoclea Biosciences, Inc., a Delaware corporation (the "Company"), covered thereby set forth below, to the following "Assignee" and, in connection with such transfer, represents and warrants to the Company that the transfer is in compliance with Section 7 of the Warrant and applicable federal and state securities laws:

NAME OF ASSIGNEE

ADDRESS

Number of shares: _____

Dated: _____

Signature: _____

ASSIGNEE ACKNOWLEDGMENT

The undersigned Assignee acknowledges that it has reviewed the attached Warrant and by its signature below it hereby represents and warrants that it is an "accredited investor" as defined in Rule 501(a) of Regulation D promulgated under the Securities Act of 1933, as amended, and agrees to be bound by the terms and conditions of the Warrant as of the date hereof, including Section 7 thereof.

Signature: __

By: __

Its: __

Address:

[Signature guarantee]



Contact:

Jennifer LaVin
617-715-6687
jennifer.lavin@genocea.com

Genocea Announces Private Placement Financing of Up to \$39 Million

CAMBRIDGE, Mass., February 12, 2019 - [Genocea Biosciences, Inc.](#) (NASDAQ: GNCA), a biopharmaceutical company developing personalized cancer immunotherapies, today announced that it has entered into a private placement with certain existing and new investors providing for the purchase of up to approximately \$39.2 million of its common stock and warrants to purchase shares of Genocea common stock, in two closings.

In the first closing, Genocea will offer 25.6 million shares of common stock and 4.25 million pre-funded warrants to purchase common stock, along with accompanying warrants to purchase 0.25 shares of common stock for each share of common stock or pre-funded warrant purchased by an investor, for expected aggregate gross proceeds to Genocea of approximately \$15.0 million (before deducting fees to the placement agents and other offering expenses payable by Genocea). The warrants will be exercisable immediately upon issuance, in whole or in part, at an exercise price of \$0.5656 per share and will have a five-year term. The first closing of the private placement is expected to occur on or about February 14, 2019, subject to customary closing conditions.

Contingent on satisfactory top-line immunogenicity results from the ongoing Phase 1/2a clinical trial for GEN-009, Genocea's neoantigen vaccine candidate, expected in late second quarter or early third quarter of this year, Genocea will have the option to conduct a second closing and sell up to an additional \$24.2 million of shares of common stock to the investors who participated in the first closing at a purchase price per share equal to the greater of \$0.4713 per share and a per share price that is derived from the volume weighted average price of the common stock for the period between the public release of the Phase 1/2a data and Genocea's exercise of its option to proceed with the second closing. An investor in the first closing that does not purchase at least 50% of the shares that it specified it would purchase in the second closing will forfeit any unexercised warrant purchased in the first closing.

Genocea intends to use the net proceeds from the offering to support the ongoing clinical study of GEN-009, advancing GEN-011, a neoantigen adoptive T cell therapy candidate for the treatment of cancer, toward an Investigational New Drug Application with the U.S. Food and Drug Administration, and for working capital and other general corporate purposes.

The securities sold in the offering have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), and may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements. Genocea has agreed to file a resale registration statement with the Securities and Exchange Commission (the "SEC") within 60 days of the closing of the offering for purposes of registering the resale of the shares of common stock issued or issuable in connection with the offering.

This notice is issued pursuant to Rule 135c under the Securities Act and does not constitute an offer to sell or the solicitation of an offer to buy the securities, nor shall there be any sale of the securities in any state in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of such state. Any offering of the securities under the resale registration statement will only be by means of a prospectus.

About Genocea Biosciences, Inc.

Genocea's mission is to help conquer cancer by designing and delivering targeted cancer vaccines and immunotherapies. While traditional immunotherapy discovery methods have largely used predictive methods to propose T cell targets, or antigens, Genocea has developed ATLAS™, its proprietary technology platform, to

identify clinically relevant antigens of T cells based on actual human immune responses. Genocea is currently studying the safety, immunogenicity, and efficacy of its lead neoantigen cancer vaccine, GEN-009, in a Phase 1/2a clinical trial.

Genocea Forward-Looking Statement

This press release includes forward-looking statements, including statements relating to immunogenicity-related clinical trial results, the proposed offering terms and the use of the net proceeds therefrom, within the meaning of the Private Securities Litigation Reform Act. Such forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statements. Genocea cautions that these forward-looking statements are subject to numerous assumptions, risks and uncertainties, which change over time. Applicable risks and uncertainties include those identified under the heading "Risk Factors" included in Genocea's Annual Report on Form 10-K for the year ended December 31, 2017 and any subsequent SEC filings. These forward-looking statements speak only as of the date of this press release and Genocea assumes no duty to update forward-looking statements.