

**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): July 29, 2026

HCW Biologics Inc.
(Exact name of Registrant as Specified in Its Charter)

Delaware (State or Other Jurisdiction of Incorporation)	001-40591 (Commission File Number)	82-5024477 (IRS Employer Identification No.)
2929 N. Commerce Parkway Miramar, Florida (Address of Principal Executive Offices)		33025 (Zip Code)
Registrant's Telephone Number, Including Area Code: (954) 842-2024		
(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))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.0001 per share	HCWB	The Nasdaq Stock Market LLC

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 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 July 29, 2026, HCW Biologics Inc. (the “Company”) entered into a Securities Purchase Agreement (the “Purchase Agreement”) with certain accredited investors (each, an investor, and collectively, the “Investors”), pursuant to which the Company agreed to issue and sell an aggregate of 618,682 units (the “Units”), with each Unit consisting of (i) one share of the Company’s common stock, par value \$0.0001 per share (the “Common Stock”), or, in lieu thereof, one pre-funded warrant to purchase one share of Common Stock (the “Pre-Funded Warrants”), and (ii) the right to receive one common stock purchase warrant (the “Common Warrants”) to purchase one share of Common Stock upon, and subject to, stockholder approval of the issuance of the Common Warrants. The Units were sold at a purchase price of \$2.585 per Unit consisting of one share of Common Stock and the right to receive one Common Warrant and \$2.5849 per Unit consisting of one Pre-Funded Warrant and the right to receive one Common Warrant. The Common Stock (or Pre-Funded Warrants) and Common Warrants comprising the Units are immediately separable and will be issued separately, the Common Warrants to be issued only upon, and subject to, stockholder approval thereof, which the Company is obligated to seek pursuant to the terms of the Purchase Agreement.

Pursuant to the Purchase Agreement, the Company agreed to issue and sell Units that include an aggregate of 218,682 shares of Common Stock and 400,000 Pre-Funded Warrants for aggregate gross proceeds of approximately \$1.6 million before deducting offering expenses payable by the Company. The Company intends to use the net proceeds from the offering for working capital and general corporate purposes, including continuing clinical development activities.

The Pre-Funded Warrants have an exercise price of \$0.0001 per share, are exercisable immediately and will remain exercisable until exercised in full. The Pre-Funded Warrants may not be exercised to the extent that, after giving effect to such exercise, the holder would beneficially own more than 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to such exercise.

The Investors are entitled to receive Common Warrants exercisable for an aggregate of up to 618,682 shares of Common Stock. Under the terms of the Purchase Agreement, issuance of the Common Warrants is subject to stockholder approval required under Nasdaq Listing Rule 5635(d). Following receipt of such stockholder approval, the Company will issue the Common Warrants to the Investors. The Common Warrants will have an exercise price of \$2.585 per share, be exercisable immediately upon issuance and expire on the date that is five and one-half (5.5) years from the date of issuance. The Common Warrants will contain a beneficial ownership limitation of 4.99%, subject to adjustment by the holder in accordance with their terms.

In connection with the Purchase Agreement, Hing C. Wong, Ph.D., the Company’s Founder and Chief Executive Officer, Scott Garrett, a member and the Chairman of the Company’s Board of Directors, and Lee Flowers, the Company’s Senior Vice President of Business Development, participated in the private placement on the same terms and conditions as the other Investor.

In connection with the Purchase Agreement, the Company also entered into a Registration Rights Agreement with the Investors (the “Registration Rights Agreement”), pursuant to which the Company agreed to provide certain registration rights with respect to the resale of the shares of Common Stock issued in the offering, the shares issuable upon exercise of the Pre-Funded Warrants and the shares issuable upon exercise of the Common Warrants. The Company agreed to file an initial registration statement within 15 trading days following the closing of the offering and to use commercially reasonable efforts to cause such registration statement to be declared effective by the Securities and Exchange Commission within 60 days following the closing.

The foregoing descriptions of the Purchase Agreement, the Registration Rights Agreement, the Pre-Funded Warrants and Common Warrants do not purport to be complete and are qualified in their entirety by reference to the full text of the forms of such agreements, which are filed as Exhibits 10.1, 10.2, 4.1 and 4.2 to this Current Report on Form 8-K and incorporated herein by reference.

Item 3.02 Unregistered Sales of Equity Securities.

The issuance and sale of the Shares and the Pre-Funded Warrants at the closing were made, and the issuance of the Warrant Shares upon exercise of the Pre-Funded Warrants and the Common Warrants will be made, in reliance upon the exemption from registration provided by Section 4(a)(2) of the Securities Act of 1933, as amended (the “Securities Act”), and Rule 506(b) of Regulation D promulgated thereunder, as transactions by an issuer not involving a public offering. The Investors represented that they are “accredited investors” as defined in Rule 501(a) under the Securities Act.

The information in Item 1.01 is incorporated by reference herein.

Item 7.01 Regulation FD Disclosure.

On July 29, 2026, the Company issued a press release announcing the pricing of this Offering described above. A copy of that press release is furnished as Exhibit 99.1 hereto.

The information in this Item 7.01, including Exhibit 99.1, is being furnished and shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such a filing.

Item 8.01 Other Events.

This Current Report on Form 8-K does not constitute an offer to sell any securities or a solicitation of an offer to buy any securities, nor shall there be any sale of any securities in any state or jurisdiction in which such an offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
4.1	Form of Pre-Funded Common Stock Purchase Warrant
4.2	Form of Common Stock Purchase Warrant
10.1	Form of Securities Purchase Agreement by and between the Company and the Investors
10.2	Form of Registration Rights Agreement by and between the Company and the Investors
99.1	Press Release dated July 29, 2026.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

SIGNATURES

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

HCW BIOLOGICS INC.

Date: July 29, 2026

By: /s/ Hing C. Wong

Hing C. Wong, Founder and Chief Executive Officer

HCW BIOLOGICS INC.

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. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

FORM OF PRE-FUNDED WARRANT

Warrant Shares: []

Initial Exercise Date: [], 2026

Issue Date: [], 2026

THIS PRE-FUNDED WARRANT (the “Warrant”) certifies that, for value received, [] or its assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “Initial Exercise Date”) and until this Warrant is exercised in full (the “Termination Date”) but not thereafter, to subscribe for and purchase from HCW Biologics Inc., a Delaware corporation (the “Company”), up to [] shares of Common Stock (as subject to adjustment hereunder, the “Warrant Shares”). The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Securities Purchase Agreement (the “Purchase Agreement”), dated [], 2026, among the Company and the purchasers signatory thereto.

Section 2. Exercise.

a) **Exercise of Warrant.** Subject to Section 2(e) herein, exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed facsimile copy or PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company 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 for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of 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. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) **Exercise Price.** The aggregate exercise price of this Warrant, except for a nominal exercise price of \$0.0001 per Warrant Share, was pre-funded to the Company on or prior to the Initial Exercise Date and, consequently, no additional consideration (other than the nominal exercise price of \$0.0001 per Warrant Share) shall be required to be paid by the Holder to any Person to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever. The remaining unpaid exercise price per share of Common Stock under this Warrant shall be \$0.0001, subject to adjustment hereunder (the “Exercise Price”).

c) **Cashless Exercise.** This Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing $\frac{(A-B)(X)}{(A)}$, where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) the highest Bid Price of the shares of Common Stock on the principal Trading Market as reported by Bloomberg L.P. (“Bloomberg”) within two (2) hours of the time of the Holder’s delivery of the Notice of Exercise pursuant to Section 2(a) hereof if such Notice of Exercise is delivered during “regular trading hours,” or with two (2) hours after the close of “regular trading hours,” on a Trading Day or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is delivered pursuant to Section 2(a) hereof after two (2) hours following the close of “regular trading hours” on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the characteristics of the Warrants being exercised, and the holding period of the Warrant Shares being issued may be tacked on to the holding period of this Warrant. The Company agrees not to take any position contrary to this Section 2(c).

“**VWAP**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the shares of Common Stock are then listed or quoted on a Trading Market, the daily volume weighted average price of the shares of Common Stock for such date (or the nearest preceding date) on the Trading Market on which the shares of Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the shares of Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the shares of Common Stock are not then listed or quoted for trading on OTCQB or OTCQX and if prices for the shares of Common Stock are then reported in The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per shares of Common Stock so reported, or (d) in all other cases, the fair market value of a share of shares of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“**Bid Price**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the shares of Common Stock are then listed or quoted on a Trading Market, the bid price of the shares of Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the shares of Common Stock are then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the shares of Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the shares of Common Stock are not then listed or quoted for trading on OTCQB or OTCQX and if prices for shares of Common Stock are then reported on The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the shares of Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) the Warrant Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 (assuming cashless exercise of the Warrants), and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of 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 of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the shares of Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the third Trading Day after the Warrant Share Delivery Date) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the shares of Common Stock as in effect on the date of delivery of the Notice of Exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date (other than any such failure that is solely due to any action or inaction by the Holder with respect to such exercise), and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, 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 Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and 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 Affiliates or 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 Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), 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. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. 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 2(e), in determining the number of outstanding shares of Common Stock, a 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 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 Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then 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 Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) 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 Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) 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.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of Common Stock any shares or other equity interests of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or reclassification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “Distribution”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled 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 on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person (excluding mergers effected solely to change the Company’s name), (ii) the Company (and all of its Subsidiaries, taken as a whole), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of more than 50% of the outstanding shares of Common Stock or more than 50% of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the shares of Common Stock or any compulsory share exchange pursuant to which the shares of Common Stock are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock or more than 50% of the voting power of the common equity of the Company (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), and to the extent is within the Company’s control to cause the successor or acquiring corporation to deliver to the Holder the foregoing, the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). 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 Fundamental Transaction, 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 Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction that is within the Company’s control and in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3(d) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the shares of Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the shares of Common Stock, (C) the Company shall authorize the granting to all holders of Common Stock rights or warrants to subscribe for or purchase any shares of Common Stock (or other equity interests) of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the shares of Common Stock, any consolidation or merger to which the Company (or any of its Subsidiaries) is a party, any sale or transfer of all or substantially all of its assets, or any compulsory share exchange whereby the shares of Common Stock are converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 10 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the shares of Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the shares of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Report on Form 6-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. Subject to compliance with any applicable securities laws, this Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the original Issue Date and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “Warrant Register”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv), in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then such action may be taken or such right may be exercised on the next succeeding Trading Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued shares of Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the shares of Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Jurisdiction. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be determined in accordance with the provisions of the Purchase Agreement.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the Purchase Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Purchase Agreement.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any shares of Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) 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 Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and the written consent of the holders holding the majority of the then outstanding Warrants, on the other hand.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

[Remainder of Page Intentionally Left Blank; Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

HCW BIOLOGICS INC.

By: _____
Name: _____
Title: _____

NOTICE OF EXERCISE

TO: _____

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

☐ in lawful money of the United States; or

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

The Warrant Shares shall be delivered to the following DWAC Account Number:

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

ASSIGNMENT FORM

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

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

Name:

(Please Print)

Address:

(Please Print)

Phone Number:

Email Address:

Dated: _____, _____

Holder's Signature:

Holder's Address:

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. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

FORM OF COMMON STOCK PURCHASE WARRANT

HCW BIOLOGICS INC.

Warrant Shares: _____

Issue Date: July 29, 2026

THIS COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that, for value received, _____, or its assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date of issuance hereof (the “Initial Exercise Date”) and on or prior to 5:00 p.m. (New York City time) on the date that is five and one-half (5.5) years after the Initial Exercise Date (the “Termination Date”) but not thereafter, to subscribe for and purchase from HCW Biologics Inc., a Delaware corporation (the “Company”), up to _____ shares (as subject to adjustment hereunder, the “Warrant Shares”) of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Securities Purchase Agreement (the “Purchase Agreement”), dated July [*], 2026, among the Company and the purchasers signatory thereto. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

“Bid Price” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“Board of Directors” means the board of directors of the Company.

“Business Day” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to “stay at home”, “shelter-in-place”, “non-essential employee” or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York generally are open for use by customers on such day.

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the common stock of the Company, par value \$0.0001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Subsidiary” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“Trading Day” means a day on which the Common Stock is traded on a Trading Market.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange (or any successors to any of the foregoing).

“Transfer Agent” means Equiniti Trust Company, LLC, the current transfer agent of the Company, with a mailing address of 48 Wall Street, Floor 23, New York, New York 10005 and an email address of frank.misciagna@equiniti.com, and any successor transfer agent of the Company.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“Warrants” means this Warrant and other Common Warrants (as defined in the Purchase Agreement) issued by the Company pursuant to the Purchase Agreement.

Section 2. Exercise.

a) **Exercise of Warrant.** Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company 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 for cancellation as soon as reasonably practicable of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of 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. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) **Exercise Price.** The exercise price per share of Common Stock under this Warrant shall be equal to the Per Share Purchase Price (as defined in the Purchase Agreement), subject to adjustment hereunder (the “Exercise Price”).

c) **Cashless Exercise.** If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing $[(A-B) (X)]$ by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) the highest Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. (“Bloomberg”) within two (2) hours of the time of the Holder’s delivery of the Notice of Exercise pursuant to Section 2(a) hereof if such Notice of Exercise is delivered during “regular trading hours,” or within two (2) hours after the close of “regular trading hours,” on a Trading Day or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is delivered pursuant to Section 2(a) hereof after two (2) hours following the close of “regular trading hours” on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the characteristics of the Warrants being exercised, and the holding period of the Warrant Shares being issued may be tacked on to the holding period of this Warrant. The Company agrees not to take any position contrary to this Section 2(c).

Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earlier of (i) one (1) Trading Day after the delivery to the Company of the Notice of Exercise and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of 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 of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the third Trading Day after the Warrant Share Delivery Date) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, 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 Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and 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 Affiliates or 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 Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), 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. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. 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 2(e), in determining the number of outstanding shares of Common Stock, a 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 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 Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then 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 Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) 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 Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) 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.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, 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 grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled 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 on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of 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, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation). To the extent that this 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 this Warrant.

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company or any Subsidiary, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of greater than 50% of the outstanding Common Stock or greater than 50% of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires greater than 50% of the outstanding shares of Common Stock or greater than 50% of the voting power of the common equity of the Company (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). 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 Fundamental Transaction, 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 Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value (as defined below) of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, that, if the Fundamental Transaction is not within the Company’s control, including not approved by the Company’s Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock of the Successor Entity (which Successor Entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction. “Black Scholes Value” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“Bloomberg”) determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of (1) the 30 day volatility, (2) the 100 day volatility or (3) the 365 day volatility, each of clauses (1)-(3) as obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable contemplated Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the VWAP immediately preceding the public announcement of the applicable contemplated Fundamental Transaction (or the consummation of the applicable Fundamental Transaction, if earlier), (D) a remaining option time equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds (or such other consideration) within the later of (i) five Business Days of the Holder’s election and (ii) the date of consummation of the Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Warrant and other Transaction Documents in accordance with the provisions of this Section 3(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term “Company” under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company, may exercise every right and power of the Company prior thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 3(d) regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Initial Exercise Date.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company (or any of its Subsidiaries) is a party, any sale or transfer of all or substantially all of its assets, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by email to the Holder at its last email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

g) Voluntary Adjustment By Company. Subject to the rules and regulations of the Trading Market, the Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the board of directors of the Company.

Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “Warrant Register”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares. The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law. 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 Delaware, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. 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. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at 2929 N Commerce Parkway, Miramar, FL 33025, Attention: Rebecca Byam, Chief Financial Officer, email address: RebeccaByam@hcwbiologics.com, for such other email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) 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 Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. Other than Section 2(e) above and this Section 5(l), which may not be amended, modified or waived, this Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and the Holder, on the other hand.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

HCW BIOLOGICS INC.

By: _____
Name:
Title:

NOTICE OF EXERCISE

TO: HCW BIOLOGICS INC.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

☐ in lawful money of the United States; or

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

The Warrant Shares shall be delivered to the following DWAC Account Number:

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

ASSIGNMENT FORM

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

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

Name:

(Please Print)

Address:

(Please Print)

Phone Number:

Email Address:

Dated: _____, _____

Holder's Signature:

Holder's Address:

FORM OF SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this “**Agreement**”) is entered into and made effective as of July 29, 2026, by and among HCW Biologics Inc., a Delaware corporation (the “**Company**”), each purchaser identified on the signature pages hereto (each, including its successors and assigns, a “**Purchaser**” and collectively the “**Purchasers**”).

RECITALS

WHEREAS, subject to the terms and conditions set forth in this Agreement and pursuant to an exemption from the registration requirements of Section 5 of the Securities Act contained in Section 4(a)(2) thereof and/or Rule 506(b) of Regulation D thereunder, the Company desires to issue and sell to each Purchaser, and each Purchaser, severally and not jointly, desires to purchase from the Company, shares of the Company’s common stock, par value \$0.0001 per share (the “**Common Stock**”) and other securities of the Company as more fully described in this Agreement;

WHEREAS, the Company desires to sell to each Purchaser, and each Purchaser, severally and not jointly, desires to purchase from the Company, shares of Common Stock (the “**Shares**”), and, in lieu of Shares that would otherwise result in such Purchaser’s beneficial ownership exceeding 4.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of such shares, pre-funded warrants to purchase shares of Common Stock (the “**Pre-Funded Warrants**” and the shares of Common Stock issuable upon exercise thereof, the “**Pre-Funded Warrant Shares**”);

WHEREAS, the Company desires to sell up to [*] Shares at a purchase price of \$[*] per Share (the “**Per Share Purchase Price**”), and Pre-Funded Warrants in lieu of Shares at a purchase price of \$[*] per Pre-Funded Warrant (equal to the Per Share Purchase Price less \$0.0001) (the “**Per Pre-Funded Warrant Purchase Price**”), to the Purchasers upon the terms and subject to the conditions contained in this Agreement;

WHEREAS, the Company further desires to issue and sell to each Purchaser, and each Purchaser, severally and not jointly, desires to purchase from the Company, common stock purchase warrants (the “**Common Warrants**,” and together with the Pre-Funded Warrants, the “**Warrants**”), exercisable for an aggregate of up to such number of shares of Common Stock (the “**Common Warrant Shares**” and together with the Pre-Funded Warrant Shares, the “**Warrant Shares**”) equal to 100% of the aggregate number of Shares and Pre-Funded Warrant Shares purchased by such Purchaser hereunder, with an exercise price per share equal to the Per Share Purchase Price, exercisable immediately upon the date of issuance, and expiring on the date that is five and one-half (5.5) years from the date of issuance; and

WHEREAS, each Purchaser desires to purchase, and the Company desires to sell, upon the terms and conditions set forth herein, such number of Shares (or Pre-Funded Warrants in lieu thereof) as specified below such Purchaser’s name on the signature page of this Agreement.

AGREEMENT

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration the receipt and adequacy of which are hereby acknowledged, the Company and each Purchaser agree as follows:

ARTICLE 1. DEFINITIONS

1.1. Definitions. For the purposes of this Agreement, the following words and phrases have the meanings set forth in this Section 1.1:

“**Acquiring Person**” shall have the meaning ascribed to such term in Section 4.5.

“**Action**” shall have the meaning ascribed to such term in Section 3.1(j).

“**Affiliate**” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person as such terms are used in and construed under Rule 405 under the Securities Act.

“**Agreement**” shall have the meaning ascribed to such term in the preamble.

“**Applicable Amount**” shall have the meaning ascribed to such term in Section 4.2(b).

“**BHCA**” shall have the meaning ascribed to such term in Section 3.1(pp).

“**Board of Directors**” means the board of directors of the Company.

“**Charter**” means the Certificate of Incorporation of the Company.

“**Closing**” shall have the meaning ascribed to such term in Section 2.2.

“**Closing Date**” means the Trading Day on which all of the Transaction Documents have been executed and delivered by the applicable parties thereto, and all conditions precedent to (i) the Purchasers’ obligations to pay the Subscription Amount and (ii) the Company’s obligations to deliver the Securities to be issued and sold, in each case, have been satisfied or waived, but in no event later than the second Trading Day following the date hereof.

“**Closing Price**” means, for any security on any Trading Day, (i) the official closing price for such security on the Principal Market, as reported by Bloomberg or, if not available, as reported by The Nasdaq Stock Market LLC (the “Nasdaq”) (or any successor), or (ii) if no such trade price is available for that Trading Day, the fair market value of such security as determined in good faith by the Board of Directors of the Company.

“**Commission**” means the U.S. Securities and Exchange Commission.

“**Common Stock**” means the common stock of the Company, par value \$0.0001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“**Common Stock Equivalents**” means any securities of the Company or its Subsidiaries which would entitle the holder thereof to acquire Common Stock at any time, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“**Common Warrants**” means, collectively, the Common Stock purchase warrants delivered to the Purchasers following receipt of Stockholder Approval in accordance with Section 2.3(c) hereof, which Common Warrants shall be exercisable immediately upon issuance, have an exercise price per share equal to the Per Share Purchase Price, and have a term of exercise equal to five and one-half (5.5) years from the date of issuance, in the form of Exhibit C attached hereto.

“**Common Warrant Shares**” shall have the meaning ascribed to such term in the recitals.

“**Company**” shall have the meaning ascribed to such term in the preamble. “**Consent**” shall have the meaning ascribed to such term in Section 4.6.

“**Warrant Shares**” means, collectively, the Pre-Funded Warrant Shares and the Common Warrant Shares.

“**Disqualification Event**” shall have the meaning ascribed to such term in Section 3.1(II).

“**DTC**” shall have the meaning ascribed to such term in Section 3.1(w).

“**Effective Date**” shall have the meaning ascribed to such term in Section 4.1(c).

“**Environmental Laws**” shall have the meaning ascribed to such term in Section 3.1(m).

“**Evaluation Date**” shall have the meaning ascribed to such term in Section 3.1(s).

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“**FCPA**” means the Foreign Corrupt Practices Act of 1977, as amended.

“**Federal Reserve**” shall have the meaning ascribed to such term in Section 3.1(pp).

“**GAAP**” shall have the meaning ascribed to such term in Section 3.1(h).

“**Hazardous Materials**” shall have the meaning ascribed to such term in Section 3.1(m).

“**Indebtedness**” shall have the meaning ascribed to such term in Section 3.1(aa).

“**Initial Closing**” shall have the meaning ascribed to such term in Section 2.2.

“**Intellectual Property**” means all of the following in any jurisdiction throughout the world: (a) all inventions (whether patentable or unpatentable and whether or not reduced to practice), all improvements thereto, and all U.S. and foreign patents, patent applications, and patent disclosures, together with all reissuances, continuations, continuations-in-part, revisions, extensions, and reexaminations thereof, (b) all trademarks, service marks, brand names, certification marks, trade dress, logos, trade names, domain names, assumed names and corporate names, together with all colorable imitations thereof, and including all goodwill associated therewith, and all applications, registrations, and renewals in connection therewith, (c) all copyrights, and all applications, registrations, and renewals in connection therewith, (d) all trade secrets under applicable state laws and the common law and know-how (including formulas, techniques, technical data, designs, drawings, specifications, customer and supplier lists, pricing and cost information, and business and marketing plans and proposals), (e) all computer software (including source code, object code, diagrams, data and related documentation), and (f) all copies and tangible embodiments of the foregoing (in whatever form or medium).

“**Issuer Covered Person**” and “**Issuer Covered Persons**” shall have the meanings ascribed to such terms in Section 3.1(ll).

“**Laws**” means any U.S. federal, state, local, foreign or other laws, rules regulations, guidelines, orders, injunctions, building and other codes, ordinances, permits, licenses, authorizations, judgements, decrees of federal, state, local, foreign or other authorities, and all orders, writs, decrees and consents of any governmental or political subdivision or agency thereof, or any court of similar tribunal established by any such governmental or political subdivision or agency thereof.

“**Legend Removal Date**” shall have the meaning ascribed to such term in Section 4.1(c).

“**Liens**” means a lien, charge, pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction.

“**Lock-Up Agreements**” means the lock-up agreements, dated as of the date hereof, by and among the Company and each of its directors, executive officers, holders of five percent (5%) or more of the Company’s outstanding Common Stock, and the other Persons set forth on Schedule B hereto, in the form of Exhibit E attached hereto.

“**Material Adverse Effect**” shall have the meaning assigned to such term in Section 3.1(b).

“**Material Permits**” shall have the meaning ascribed to such term in Section 3.1(n).

“**Money Laundering Laws**” shall have the meaning ascribed to such term in Section 3.1(qq).

“**National Securities Exchange**” means any United States national securities exchange on which the securities of the Company are listed for trading, including, but not limited to, The Nasdaq Stock Market LLC, the NYSE American LLC, or the New York Stock Exchange LLC.

“**OFAC**” shall have the meaning ascribed to such term in Section 3.1(nn).

“**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“**Principal Market**” means primary market on which the Company’s Common Stock is then listed or quoted for trading, including, without limitation, The New York Stock Exchange, the NYSE American, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market, OTCPink, OTCQB, or OTCQX and any successor markets thereto.

“**Proceeding**” means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether pending or to the Company’s knowledge, threatened in writing against or affecting the Company, any Subsidiary or any of their respective properties before any court, arbitrator, governmental or administrative agency or regulatory authority.

“**Public Information Failure**” shall have the meaning ascribed to such term in Section 4.2(b).

“**Purchaser**” and “**Purchasers**” shall have the meanings ascribed thereto in the preamble.

“**Purchaser Party**” shall have the meaning ascribed to such term in Section 4.8.

“**Purchase Price**” shall have the meaning ascribed to such term in the recitals.

“**Registration Rights Agreement**” means the registration rights agreement, in the form of Exhibit B.

“**Registration Statement**” shall have the meaning ascribed to such term in Section 1 of the Registration Rights Agreement.

“**Regulation FD**” means Regulation FD promulgated by the SEC pursuant to the Exchange Act, as such Regulation may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the SEC having substantially the same purpose and effect as such Regulation.

“**Reserved Amount**” shall have the meaning ascribed to such term in Section 4.9.

“**Required Approvals**” shall have the meaning ascribed to such term in Section 3.1(e).

“**Rule 144**” means Rule 144 promulgated by the SEC pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the SEC (or similar United States law) having substantially the same purpose and effect as such Rule.

“**SEC**” means the United States Securities and Exchange Commission.

“**SEC Reports**” shall have the meaning ascribed to such term in Section 3.1(h).

“**Securities**” shall have the meaning ascribed to such term in Section 2.1(b).

“**Securities Act**” means the Securities Act of 1933, and the rules and regulations promulgated thereunder.

“**Pre-Funded Warrants**” shall have the meaning ascribed to such term in Section 2.1(a).

“**Shares**” shall have the meaning ascribed to such term in the recitals.

“**Stockholder Approval**” means such approval as may be required by the applicable rules and regulations of the Nasdaq Capital Market (or any successor entity) from the stockholders of the Company to permit the issuance of the Common Warrants.

“**Common Stock**” shall have the meaning ascribed to such term in the recitals.

“**Short Sales**” means all “short sales” as defined in Rule 200 of Regulation SHO under the Exchange Act (but shall not be deemed to include the location and/or reservation of borrowable shares of Common Stock).

“**Subscription Amount**” means, as to each Purchaser, the aggregate amount to be paid for the Shares (or Pre-Funded Warrants in lieu thereof) purchased hereunder as specified below such Purchaser’s name on the signature page of this Agreement and next to the heading.

“**Subsidiary**” means with respect to any entity at any date, any direct or indirect corporation, limited or general partnership, limited liability company, trust, estate, association, joint venture or other business entity of which (a) more than 50% of (i) the outstanding capital stock having (in the absence of contingencies) ordinary voting power to elect a majority of the board of directors or other managing body of such entity, (ii) in the case of a partnership or limited liability company, the interest in the capital or profits of such partnership or limited liability company or (iii) in the case of a trust, estate, association, joint venture or other entity, the beneficial interest in such trust, estate, association or other entity business is, at the time of determination, owned or controlled directly or indirectly through one or more intermediaries, by such entity, or (b) is under the actual control of the Company.

“**Trading Day**” means a day on which the Principal Market is open for trading.

“**Transaction Documents**” means this Agreement, the Pre-Funded Warrants, the Common Warrants, the Registration Rights Agreement, the Lock-Up Agreements, all schedules and exhibits thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“**Transfer Agent**” means Broadridge Corporate Issuer Solutions LLC, and any successor transfer agent of the Company.

“**VWAP**” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Principal Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Principal Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)) (or a similar organization or agency succeeding to its functions of reporting prices), (b) if no volume weighted average price of the Common Stock can be ascertained from the Principal Market, the average closing price of the Common Stock during the ten (10) Trading Days preceding such date, or (c) in all other cases, the fair market value of a share of Common Stock as determined by the Board of Directors.

ARTICLE 2. PURCHASE AND SALE

2.1. Sale and Issuance of Shares.

(a) [Intentionally Omitted].

(b) Subject to the terms and conditions of this Agreement, each Purchaser agrees to purchase at the applicable Closing (as defined below), and the Company agrees to sell and issue to each Purchaser at the applicable Closing, or, with respect to issuance of Common Warrants, upon receipt of Stockholder Approval, (i) such number of Shares (or Pre-Funded Warrants in lieu thereof) as is set forth on the signature page hereto, and (ii) Common Warrants exercisable for a number of Common Warrant Shares equal to one hundred percent (100%) of the aggregate number of Shares and Pre-Funded Warrant Shares purchased by such Purchaser hereunder. In lieu of Shares that would otherwise result in any Purchaser’s beneficial ownership exceeding 4.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of Shares hereunder (the “**Beneficial Ownership Limitation**”), such Purchaser shall elect to receive Pre-Funded Warrants. The Shares, the Pre-Funded Warrants, the Common Warrants and the Warrant Shares issued or issuable to the Purchasers pursuant to this Agreement shall be referred to in this Agreement as the “**Securities**.”

2.2. Closing. The initial purchase and sale of the Securities shall take place remotely via the exchange of documents and signatures, at 12:00 p.m., on July 29, 2026, or at such other time and place as the Company and the Purchasers mutually agree upon, orally or in writing (which time and place are designated as the “**Initial Closing**”). In the event there is more than one closing, the term “**Closing**” shall apply to each such closing unless otherwise specified.

2.3. Deliveries.

(a) On or prior to the applicable Closing, the Company shall deliver or cause to be delivered to each Purchaser the following:

(i) This Agreement, duly executed by the Company;

(ii) The Pre-Funded Warrants, if any, duly executed by the Company, in the form attached hereto as Exhibit A;

(iii) The Company’s wire transfer instructions, on Company letterhead and executed by the Chief Executive Officer or Chief Financial Officer;

(iv) A legal opinion from counsel to the Company, dated as of the Closing Date, addressed to the Purchasers and in form and substance reasonably satisfactory to the Purchasers, covering such matters as are customary in transactions of this nature, including the due authorization, execution and delivery of the Transaction Documents and the valid issuance of the Securities;

(v) An Officer’s Certificate of an executive officer of the Company, dated as of the Closing Date, certifying that (A) the representations and warranties of the Company in the Transaction Documents are true and correct as of such date (or as of an earlier date if so specified), and (B) the Company has performed all obligations required to be performed as of the Closing Date;

(vi) A Certificate of the Secretary (or Assistant Secretary) of the Company, dated as of the Closing Date, certifying and attaching (A) a true, complete and correct copy of the Company’s Certificate of Incorporation, as amended and in effect on the Closing Date, (B) a true, complete and correct copy of the Company’s Bylaws, as amended and in effect on the Closing Date, (C) the resolutions of the Board of Directors authorizing the execution, delivery, and performance of the Transaction Documents and the issuance of the Securities, and (D) the incumbency and signatures of the officers of the Company executing the Transaction Documents;

(vii) A Certificate of the Chief Financial Officer of the Company, dated as of the Closing Date, certifying as to the Company’s cash and cash equivalents, indebtedness, and any material off-balance sheet or undisclosed liabilities as of the Closing Date;

(viii) A Certificate of Good Standing of the Company issued by the Secretary of State of the State of Delaware, dated as of a recent date prior to the Closing Date;

(ix) The Shares, issued in book-entry form, duly credited to each Purchaser’s account at the Company’s transfer agent, free and clear of all liens and encumbrances, other than applicable securities law restrictions;

(x) The Registration Rights Agreement, duly executed by the Company;

(xi) A reservation letter from the Company and its transfer agent, confirming that a sufficient number of shares of Common Stock have been reserved for issuance upon exercise of the Pre-Funded Warrants and the Common Warrants; and

(xii) Lock-up Agreements each with a duration of six (6) months entered into by the Company's (a) executive officers; (b) directors; (c) holders of five percent (5%) or more of the Company's outstanding Common Stock; and (d) each Person set forth on Schedule B hereto substantially in the form attached hereto as Exhibit E;

(b) On or prior to the applicable Closing, each Purchaser shall deliver or cause to be delivered the following:

(i) To the Company, this Agreement, duly executed by such Purchaser;

(ii) To the Company, the Registration Rights Agreement, duly executed by such Purchaser;

(iii) To the Company, such Purchaser's Subscription Amount, by wire transfer of immediately available funds in accordance with the wire instructions provided by the Company, to be held and disbursed in accordance with this Agreement; and

(iv) To the Company, such other information, certificates, or documents reasonably requested to consummate the transactions contemplated by this Agreement.

(c) Promptly following receipt of Stockholder Approval, the Company shall issue and deliver to each Purchaser the respective Common Warrants to be issued to such Purchaser hereunder, duly executed by the Company, in the form attached hereto as Exhibit C;

2.4. Closing Conditions.

(a) The obligations of the Company hereunder in connection with each applicable Closing are subject to the following conditions being met:

(i) the accuracy in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) on the applicable Closing Date of the representations and warranties of each Purchaser contained herein (unless as of a specific date therein in which case they shall be accurate as of such date);

(ii) all obligations, covenants and agreements of each Purchaser required to be performed at or prior to the Closing Date shall have been performed in all material respects; and

(iii) the delivery by each Purchaser of the items set forth in Section 2.3(b) of this Agreement.

(b) The respective obligations of the Purchasers hereunder in connection with the Closing are subject to the following conditions being met:

(i) the accuracy in all respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) when made and on the Closing Date of the representations and warranties of the Company contained herein (unless as of a specific date therein in which case they shall be accurate as of such date);

(ii) all obligations, covenants and agreements of the Company required to be performed at or prior to the Closing Date shall have been performed;

(iii) the delivery by the Company of the items set forth in Section 2.3(a) of this Agreement;

(iv) there shall have been no Material Adverse Effect with respect to the Company since the date hereof;

(v) from the date hereof to the Closing Date trading in the Common Stock shall not have been suspended by the SEC or the Company's Principal Market, and, at any time prior to the Closing Date, trading in securities generally as reported by Bloomberg L.P. shall not have been suspended or limited, or minimum prices shall not have been established on securities whose trades are reported by such service, or on any Principal Market, nor shall a banking moratorium have been declared either by the United States or New York State authorities nor shall there have occurred any material outbreak or escalation of hostilities or other national or international calamity of such magnitude in its effect on, or any material adverse change in, any financial market which, in each case, in the reasonable judgment of such Purchaser, makes it impracticable or inadvisable to purchase the Securities at the Closing.

ARTICLE 3. REPRESENTATIONS AND WARRANTIES

3.1. Representations and Warranties of the Company. The Company hereby represents and warrants to each Purchaser that, except as set forth on the Disclosure Schedule to this Agreement, which exceptions shall be deemed to be part of the representations and warranties made hereunder, the following representations are true and complete as of the date of the Initial Closing, except as otherwise indicated. The Disclosure Schedule shall be arranged in sections corresponding to the numbered and lettered sections contained in this Section 3.1, and the disclosures in any section of the Disclosure Schedule shall qualify other sections in this Section 3.1 only to the extent it is readily apparent from a reading of the disclosure that such disclosure is applicable to such other sections.

(a) Subsidiaries. All of the direct and indirect Subsidiaries of the Company are set forth on Schedule 3.1(a). Except as set forth on Schedule 3.1(a), the Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all of the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities. If the Company has no subsidiaries, all other references to the Subsidiaries or any of them in the Transaction Documents shall be disregarded.

(b) Organization and Qualification. The Company and each of the Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective Charter, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in: (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, prospects or condition (financial or otherwise) of the Company and the Subsidiaries, taken as a whole, or (iii) a material adverse effect on the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document (any of (i), (ii) or (iii), a "**Material Adverse Effect**") provided, however, that "Material Adverse Effect" shall not include any event, occurrence, fact, condition or change, directly or indirectly, arising out of or attributable to the announcement, pendency or completion of the transactions contemplated by the Transaction Documents. No Proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

(c) Authorization; Enforcement. The Company has the requisite power and authority to enter into and to consummate the transactions contemplated by this Agreement and each of the other Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and each of the other Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary action on the part of the Company and no further action is required by the Company, the Board of Directors or the Company's shareholders in connection herewith or therewith other than in connection with the Required Approvals. Subject to obtaining the Required Approvals, this Agreement and each other Transaction Document to which it is a party has been (or upon delivery will have been) duly executed by the Company and, when delivered in accordance with the terms hereof and thereof, will constitute the valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) No Conflicts. Except as set forth in Schedule 3.1(d), the execution, delivery and performance by the Company of this Agreement and the other Transaction Documents to which it is a party, the issuance and sale of the Securities and the consummation by it of the transactions contemplated hereby and thereby do not and will not (i) subject to the Required Approvals, conflict with or violate any provision of the Company's or any Subsidiary's Charter, bylaws or other organizational or charter documents, or (ii) constitute a default (or an event that with notice or lapse of time or both would become a default) under, result in the creation of any Lien upon any of the properties or assets of the Company or any Subsidiary, or give to others any rights of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing a Company or Subsidiary debt or otherwise) or other understanding to which the Company or any Subsidiary is a party or by which any property or asset of the Company or any Subsidiary is bound or affected, or (iii) subject to the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company or a Subsidiary is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company or a Subsidiary is bound or affected; except in the case of each of clauses (ii) and (iii), such as could not have or reasonably be expected to result in a Material Adverse Effect.

(e) Filings, Consents and Approvals. Except as set forth on Schedule 3.1(e), the Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) the filings required pursuant to Section 4.4 of this Agreement, (ii) application(s) to each applicable Principal Market for the listing of the Shares and the Warrant Shares for trading thereon in the time and manner required thereby, (iii) Stockholder Approval, and (iv) such filings as are required to be made under applicable state or federal securities laws (collectively, the "**Required Approvals**").

(f) Issuance of the Securities. The Securities are duly authorized and, when issued and paid for in accordance with the applicable Transaction Documents, will be duly and validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Warrant Shares, when issued upon exercise of the Pre-Funded Warrants and the Common Warrants in accordance with the terms thereof will be validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Company shall reserve from its duly authorized capital stock a number of shares of Common Stock issuable pursuant to the exercise of the Pre-Funded Warrants and the Common Warrants equal to the amount set forth in Section 4.9.

(g) Capitalization. The capitalization of the Company as of the date hereof is as set forth on Schedule 3.1(g), which Schedule 3.1(g) shall also include the number of shares of Common Stock owned beneficially, and of record, by Affiliates of the Company as of the date hereof. The Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than as set forth on Schedule 3.1(g) other than pursuant to the exercise of employee stock awards under the Company's equity incentive plans, the issuance of shares of Common Stock to employees pursuant to the Company's employee stock purchase plans, the issuance of shares of Common Stock or Common Stock Equivalents pursuant to agreements outstanding as of the date of the most recently filed periodic report under the Exchange Act and pursuant to the conversion and/or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as set forth on Schedule 3.1(g), there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents or capital stock of any Subsidiary. The issuance and sale of the Securities will not obligate the Company or any Subsidiary to issue shares of Common Stock or other securities to any Person (other than the Purchasers) and will not result in a right of any holder of Company securities to adjust the exercise, conversion, exchange or reset price under any of such securities. There are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. All of the outstanding shares of capital stock of the Company are duly authorized, validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. Except for Stockholder Approval and any other required approvals, no further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. There are no shareholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's shareholders.

(h) SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the "**SEC Reports**"). As of their respective dates, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the SEC with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved ("**GAAP**"), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal year-end audit adjustments.

(i) Material Changes; Undisclosed Events, Liabilities or Developments. Other than as set forth on Schedule 3.1(i) since the date of the latest audited financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof, (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice, and (B) liabilities not required to be reflected in the Company's financial statements pursuant to GAAP or disclosed in filings made with the SEC, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its shareholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock and (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company equity incentive plans. The Company does not have pending before the SEC any request for confidential treatment of information. Except for the issuance of the Securities contemplated by this Agreement or as set forth on Schedule 3.1(i), no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least one Trading Day prior to the date that this representation is made.

(j) Litigation. Except as disclosed in the SEC Reports, there is no action, suit, notice of violation, proceeding or investigation, inquiry or other similar proceeding of any federal or state governmental authority pending or, to the knowledge of the Company, threatened against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, governmental or administrative agency or regulatory authority (federal, state, county, local or foreign) (collectively, an “**Action**”) which (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the issuance of the Securities or (ii) could, if there were an unfavorable decision, have or reasonably be expected to result in a Material Adverse Effect. The Company has no reason to believe that an Action will be filed against it in the future. Except as set forth in the SEC Reports, neither the Company nor any Subsidiary, nor any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by the SEC involving the Company or any current or former director or officer of the Company. The SEC has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act, and the Company has no reason to believe it will do so in the future.

(k) Labor Relations. No labor dispute exists or, to the knowledge of the Company, is imminent with respect to any of the employees of the Company, which could reasonably be expected to result in a Material Adverse Effect. None of the Company’s or its Subsidiaries’ employees is a member of a union that relates to such employee’s relationship with the Company or such Subsidiary, and neither the Company nor any of its Subsidiaries is a party to a collective bargaining agreement, and the Company and its Subsidiaries believe that their relationships with their employees are good. To the knowledge of the Company, no effort is underway to unionize or organize the employees of the Company or any Subsidiary. To the knowledge of the Company, no executive officer of the Company or any Subsidiary, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant in favor of any third party, and the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any liability with respect to any of the foregoing matters. The Company and its Subsidiaries are in compliance with all applicable U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. There is no workmen’s compensation liability matter, employment-related charge, complaint, grievance, investigation, inquiry or obligation of any kind pending, or to the Company’s knowledge, threatened, relating to an alleged violation or breach by the Company or its Subsidiaries of any law, regulation or contract that could, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company has no reason to believe that any individual may commence an Action or file a claim with any governmental authority against the Company alleging sexual harassment or any type of discrimination or violation of any Laws.

(l) Compliance. Except as set forth on Schedule 3.1(l), neither the Company nor any Subsidiary: (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any judgment, decree or order of any court, arbitrator or other governmental authority or (iii) is or has been in violation of any statute, rule, ordinance or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws and regulations relating to taxes, healthcare laws, anti-kickback laws, securities, environmental protection, occupational health and safety, product quality and safety, transportation, and employment and labor matters, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(m) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with all federal, state, local and foreign laws relating to pollution or protection of human health or the environment (including ambient air, surface water, groundwater, land surface or subsurface strata), including laws relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, or toxic or hazardous substances or wastes (collectively, “**Hazardous Materials**”) into the environment, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials, as well as all authorizations, codes, decrees, demands, or demand letters, injunctions, judgments, licenses, notices or notice letters, orders, permits, plans or regulations, issued, entered, promulgated or approved thereunder (“**Environmental Laws**”); (ii) have received all permits licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses; and (iii) are in compliance with all terms and conditions of any such permit, license or approval except in each case of clause (i), (ii) and (iii), the failure to so comply could be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect.

(n) Regulatory Permits. The Company and the Subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct their respective businesses as described in the SEC Reports, except where the failure to possess such permits could not reasonably be expected to result in a Material Adverse Effect (“**Material Permits**”), and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any Material Permit.

(o) Title to Assets. The Company and the Subsidiaries have good and marketable title in fee simple to all real property owned by them and good and marketable title in all personal property owned by them that is material to the business of the Company and the Subsidiaries, in each case free and clear of all Liens, except for (i) Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries, and do not materially affect the value of such property, and (ii) Liens for the payment of federal, state or other taxes, for which appropriate reserves have been made therefor in accordance with GAAP and, the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and the Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Subsidiaries are in compliance, except where the failure to so comply would not be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect.

(p) Intellectual Property.

(i) Except as set forth in Schedule 3.1(p), the Company owns or possesses or has the right to use pursuant to a valid and enforceable written license, sublicense, agreement, or permission all Intellectual Property necessary for the operation of the business of the Company as presently conducted, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(ii) The Company has no knowledge that the Intellectual Property interferes with, infringe upon, misappropriate, or otherwise come into conflict with, any Intellectual Property rights of third parties, and the Company has no knowledge that facts exist which indicate a likelihood of the foregoing. The Company has not received any charge, complaint, claim, demand, or notice alleging any such interference, infringement, misappropriation, or conflict (including any claim that the Company must license or refrain from using any Intellectual Property rights of any third party). To the knowledge of the Company, all rights to its Intellectual Property are enforceable and no third party has interfered with, infringed upon, misappropriated, or otherwise come into conflict with, any Intellectual Property rights of the Company, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(iii) None of, and neither the Company nor any Subsidiary has received a notice (written or otherwise) that any of, the Intellectual Property Rights have expired, terminated or been abandoned, or is expected to expire or terminate or be abandoned, within two (2) years from the date of this Agreement, except where such expiration, termination or abandonment would not reasonably be expected to, individually or in the aggregate, have a Material Adverse Effect.

(q) Insurance. The Company and the Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which the Company and the Subsidiaries are engaged. Neither the Company nor any Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business without a significant increase in cost.

(r) Transactions With Affiliates and Employees. Except as disclosed in Schedule 3.1(r), during the past three fiscal years and the subsequent interim period through the date of this Agreement, none of the officers, directors or Affiliates of the Company or any Subsidiary and, to the knowledge of the Company, none of the employees of the Company or any Subsidiary is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, providing for the borrowing of money from or lending of money to or otherwise requiring payments to or from any officer, director, Affiliate or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee, stockholder, member or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock award agreements under any equity incentive plan of the Company.

(s) Sarbanes-Oxley; Internal Accounting Controls. Except as disclosed in Schedule 3.1(s), the Company and the Subsidiaries are in compliance with any and all applicable requirements of the Sarbanes-Oxley Act of 2002 that are effective as of the date hereof, and any and all applicable rules and regulations promulgated by the SEC thereunder that are effective as of the date hereof and as of the applicable Closing. The Company and the Subsidiaries maintain a system of internal accounting controls as set forth in the SEC Reports. The Company's certifying officers have evaluated the effectiveness of the disclosure controls and procedures of the Company and the Subsidiaries as of the end of the period covered by the most recently filed periodic report under the Exchange Act (such date, the "**Evaluation Date**"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no changes in the internal control over financial reporting (as such term is defined in the Exchange Act) of the Company and its Subsidiaries that have materially affected, or is reasonably likely to materially affect, the internal control over financial reporting of the Company and its Subsidiaries.

(t) Certain Fees. Other than as set forth on Schedule 3.1(t), no brokerage or finder's fees or commissions are or will be payable by the Company or any Subsidiary to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. The Purchasers shall have no obligation with respect to any fees or with respect to any claims made by or on behalf of other Persons for fees of a type contemplated in this Section 3.1(t) that may be due in connection with the transactions contemplated by the Transaction Documents.

(u) Investment Company. The Company is not, and is not an Affiliate of, and immediately after receipt of payment for the Securities, will not be or be an Affiliate of, an “investment company” within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become an “investment company” subject to registration under the Investment Company Act of 1940, as amended.

(v) Registration Rights. Other than as required pursuant to this Agreement and as set forth in the SEC Reports, no Person has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary. The Company shall not file any other resale registration statement prior to filing the registration statement required hereunder.

(w) Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the SEC is contemplating terminating such registration. Except as otherwise disclosed in the SEC Reports to date, the Company has not, in the 12 months preceding the date hereof, received notice from any Principal Market on which the Common Stock is or has been listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Principal Market. The Common Stock is currently eligible for electronic transfer through the Depository Trust Company (“DTC”) or another established clearing corporation and the Company is current in payment of the fees to the DTC (or such other established clearing corporation) in connection with such electronic transfer. The Company is not subject to any “chill” issued by the DTC.

(x) Application of Takeover Protections. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company’s Charter (or similar charter documents) or the Laws of its state of incorporation that is or could become applicable to the Purchasers as a result of the Purchasers and the Company fulfilling their obligations or exercising their rights under the Transaction Documents, including without limitation as a result of the Company’s issuance of the Securities and the Purchasers’ ownership of the Securities, the Shares, the Pre-Funded Warrants and the Warrant Shares.

(y) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company confirms that neither it nor any other Person acting on its behalf has provided any of the Purchasers or their agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the SEC Reports. The Company understands and confirms that the Purchasers will rely on the foregoing representation in effecting transactions in securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Purchasers regarding the Company and its Subsidiaries, their respective businesses and the transactions contemplated hereby, including the Disclosure Schedules to this Agreement, is true and correct and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. The press releases disseminated by the Company during the 12 months preceding the date of this Agreement do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made and when made, not misleading. The Company acknowledges and agrees that no Purchaser makes or has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3.2 hereof.

(z) No Integrated Offering. Assuming the accuracy of the Purchasers’ representations and warranties set forth in Section 3.2, neither the Company, nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of any applicable shareholder approval provisions of any Principal Market on which any of the securities of the Company are listed or designated.

(aa) Indebtedness. Solvency. Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder (i) the fair saleable value of the Company's assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year from the Closing Date. The SEC Reports set forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. For the purposes of this Agreement, "**Indebtedness**" means (x) any liabilities for borrowed money or amounts owed in excess of \$100,000 (other than trade accounts payable incurred in the ordinary course of business), (y) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company's consolidated balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (z) the present value of any lease payments in excess of \$200,000 due under leases required to be capitalized in accordance with GAAP. Except as set forth in the SEC Reports, neither the Company nor any Subsidiary is in default with respect to any Indebtedness.

(bb) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, the Company and its Subsidiaries each (i) has made or filed all United States federal, state and local income and all foreign income and franchise tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim.

(cc) Foreign Corrupt Practices. Neither the Company nor any Subsidiary, nor to the knowledge of the Company or any Subsidiary, any agent or other person acting on behalf of the Company or any Subsidiary, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company or any Subsidiary (or made by any person acting on its behalf of which the Company is aware) which is in violation of Law, or (iv) violated any provision of FCPA.

(dd) Accountants. The Company's accounting firm is set forth in the SEC Reports. To the knowledge and belief of the Company, such accounting firm is a registered public accounting firm as required by the Exchange Act and the rules of the Public Company Accounting Oversight Board ("PCAOB"), and is in good standing with the PCAOB. Such firm has expressed its opinion with respect to the financial statements included in the Company's most recently filed Annual Report on Form 10-K and, to the knowledge of the Company, is expected to express its opinion with respect to the financial statements to be included in the Company's Annual Report for the fiscal year ending December 31, 2025. The Company has not had any disagreements (as that term is defined in Item 304 of Regulation S-K) with its independent registered public accounting firm during the periods covered by the financial statements included in the SEC Reports or any subsequent interim period. To the Company's knowledge, such firm has not resigned or been dismissed as the Company's independent auditors as a result of or in connection with any disagreement relating to accounting principles, financial statement disclosures, or auditing scope or procedures.

(ee) Acknowledgment Regarding Purchasers' Purchase of Securities. The Company acknowledges and agrees that each of the Purchasers is acting solely in the capacity of an arm's length purchaser with respect to the Transaction Documents and the transactions contemplated thereby. The Company further acknowledges that no Purchaser is acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated thereby and any advice given by any Purchaser or any of their respective representatives or agents in connection with the Transaction Documents and the transactions contemplated thereby is merely incidental to the Purchasers' purchase of the Securities. The Company further represents to each Purchaser that the Company's decision to enter into this Agreement and the other Transaction Documents has been based solely on the independent evaluation of the transactions contemplated hereby by the Company and its representatives.

(ff) Acknowledgement Regarding Purchaser's Trading Activity. Notwithstanding anything in this Agreement or elsewhere to the contrary (except for Sections 3.2(f) and 4.12 hereof), it is understood and acknowledged by the Company that: (i) no Purchaser has been asked by the Company to agree, nor has any Purchaser agreed, to desist from purchasing or selling, long and/or short, securities of the Company, or "derivative" securities based on securities issued by the Company or to hold the Securities for any specified term; (ii) past or future open market or other transactions by any Purchaser, specifically including, without limitation, Short Sales or "derivative" transactions, before or after the closing of this or future private placement transactions, may negatively impact the market price of the Company's publicly-traded securities; (iii) any Purchaser, and counter-parties in "derivative" transactions to which any such Purchaser is a party, directly or indirectly, presently may have a "short" position in the Common Stock, and (iv) each Purchaser shall not be deemed to have any affiliation with or control over any arm's length counter-party in any "derivative" transaction. The Company further understands and acknowledges that (y) one or more Purchasers may engage in hedging activities at various times during the period that the Securities are outstanding, and (z) such hedging activities (if any) could reduce the value of the existing shareholders' equity interests in the Company at and after the time that the hedging activities are being conducted. The Company acknowledges that such aforementioned hedging activities do not constitute a breach of any of the Transaction Documents.

(gg) Regulation M Compliance. The Company has not, and to its knowledge no one acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of the Common Stock to facilitate the sale of the Securities, (ii) sold, bid for, purchased, or, paid any compensation for soliciting purchases of, any of the Securities, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any of the Securities.

(hh) Stock Option Plans. Each stock option granted by the Company under the Company's stock option plan was granted (i) in accordance with the terms of the Company's stock option plan and (ii) with an exercise price at least equal to the fair market value of the Common Stock on the date such stock option would be considered granted under GAAP and applicable law. No stock option granted under the Company's stock option plan has been backdated. The Company has not knowingly granted, and there is no and has been no Company policy or practice to knowingly grant, stock options prior to, or otherwise knowingly coordinate the grant of stock options with, the release or other public announcement of material information regarding the Company or its Subsidiaries or their financial results or prospects.

(ii) Cybersecurity. Except as would not reasonably be expected to result in a Material Adverse Effect, (i) there has been no material security breach of or relating to any of the Company's or its Subsidiaries' information technology and computer systems, networks, hardware, software, data (including the data of its respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of it), equipment or technology (collectively, "IT Systems and Data"), (ii) the Company and the Subsidiaries have not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any material security breach to its IT Systems and Data, (iii) the Company and its Subsidiaries are presently in compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, individually or in the aggregate, have a Material Adverse Effect, (iv) the Company and its Subsidiaries have implemented and maintained commercially reasonable safeguards to maintain and protect their material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and Data, and (v) the Company and its Subsidiaries have implemented commercially reasonable backup and disaster recovery technology.

(jj) Private Placement. Assuming the accuracy of each Purchaser's representations and warranties set forth in Section 3.2, no registration under the Securities Act is required for the offer and sale of the Securities by the Company to the Purchasers as contemplated hereby.

(kk) No General Solicitation. Neither the Company nor any person acting on behalf of the Company has offered or sold any of the Securities by any form of general solicitation or general advertising. The Company has offered the Securities for sale only to the Purchasers and certain other "accredited investors" within the meaning of Rule 501 under the Securities Act.

(ll) No Disqualification Events. With respect to the Securities to be offered and sold hereunder in reliance on Rule 506(b) under the Securities Act, none of the Company, any of its predecessors, any affiliated issuer, any director, executive officer, other officer of the Company participating in the offering hereunder, any beneficial owner of 20% or more of the Company's outstanding voting equity securities, calculated on the basis of voting power, nor any promoter (as that term is defined in Rule 405 under the Securities Act) connected with the Company in any capacity at the time of sale, nor any Person, including a placement agent, who will receive a commission or fees for soliciting purchasers (each, an "**Issuer Covered Person**" and, together, "**Issuer Covered Persons**") is subject to any of the "Bad Actor" disqualifications described in Rule 506(d)(1)(i) to (viii) under the Securities Act (a "**Disqualification Event**"), except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3). The Company has exercised reasonable care to determine whether any Issuer Covered Person is subject to a Disqualification Event. The Company has complied, to the extent applicable, with its disclosure obligations under Rule 506(e), and has furnished to the Purchasers a copy of any disclosures provided thereunder.

(mm) Notice of Disqualification Events. The Company will notify the Purchasers in writing, prior to the Closing Date of (i) any Disqualification Event relating to any Issuer Covered Person and (ii) any event that would, with the passage of time, reasonably be expected to become a Disqualification Event relating to any Issuer Covered Person, in each case of which it is aware.

(nn) Office of Foreign Assets Control. Neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any Subsidiary is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department ("**OFAC**").

(oo) U.S. Real Property Holding Corporation. The Company is not and has never been a U.S. real property holding corporation within the meaning of Section 897 of the Internal Revenue Code of 1986, as amended, and the Company shall so certify upon Purchaser's request.

(pp) Bank Holding Company Act. Neither the Company nor any of its Subsidiaries or Affiliates is subject to the Bank Holding Company Act of 1956, as amended (the "**BHCA**") and to regulation by the Board of Governors of the Federal Reserve System (the "**Federal Reserve**"). Neither the Company nor any of its Subsidiaries or Affiliates owns or controls, directly or indirectly, 5% or more of the outstanding shares of any class of voting securities or twenty-five percent or more of the total equity of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve. Neither the Company nor any of its Subsidiaries or Affiliates exercises a controlling influence over the management or policies of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve.

(qq) Money Laundering. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record-keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, applicable money laundering statutes and applicable rules and regulations thereunder (collectively, the "**Money Laundering Laws**"), and no Action by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company or any Subsidiary, threatened.

(rr) Shell Company Status. The Company is not, and has not been for a period of at least one year from the date hereof, an issuer identified in Rule 144(i)(1) of the Securities Act. The Company has filed current “Form 10 information” (as defined in Rule 144(i)(3)) with the SEC reflecting its status as an entity that was no longer an issuer described in Rule 144(i)(1)(i) more than one year ago from the date hereof. The Company shall provide a legal opinion of counsel to the Company in a form reasonably acceptable to the Purchaser with respect to this representation.

3.2. Representations and Warranties of the Purchasers. Each Purchaser, for itself and for no other Purchaser, hereby represents and warrants to the Company as follows which representations and warranties shall be true and correct as of the date hereof and as of the Closing Date:

(a) Organization; Authority. Such Purchaser is either an individual or an entity duly incorporated or formed, validly existing and in good standing under the laws of the jurisdiction of its incorporation or formation with full right, corporate, partnership, limited liability company or similar power and authority to enter into and to consummate the transactions contemplated by this Agreement and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and performance by such Purchaser of the transactions contemplated by this Agreement have been duly authorized by all necessary corporate, partnership, limited liability company or similar action, as applicable, on the part of such Purchaser. Each Transaction Document to which it is a party has been duly executed by such Purchaser, and when delivered by such Purchaser in accordance with the terms hereof, will constitute the valid and legally binding obligation of such Purchaser, enforceable against it in accordance with its terms, except: (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors’ rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(b) Understandings or Arrangements. Such Purchaser is acquiring the Securities as principal for its own account and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities (this representation and warranty not limiting such Purchaser’s right to sell the Securities in compliance with applicable federal and state securities laws). Such Purchaser is acquiring the Securities hereunder in the ordinary course of its business. Such Purchaser understands that the Securities are “restricted securities” and have not been registered under the Securities Act or any applicable state securities law and is acquiring such Securities as principal for its own account and not with a view to or for distributing or reselling such Securities or any part thereof in violation of the Securities Act or any applicable state securities law, has no present intention of distributing any of such Securities in violation of the Securities Act or any applicable state securities law and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities in violation of the Securities Act or any applicable state securities law (this representation and warranty not limiting such Purchaser’s right to sell such Securities in compliance with applicable federal and state securities laws).

(c) Purchaser Status. At the time such Purchaser was offered the Securities, it was, and as of the date hereof it is, an “accredited investor” within the meaning of Rule 501 under Regulation D promulgated under the Securities Act or a “qualified institutional buyer” as defined in Rule 144A(a) promulgated under the Securities Act. No Purchaser is subject to any Disqualification Event, except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3).

(d) Experience of Such Purchaser. Such Purchaser, either alone or together with its representatives, has such knowledge, sophistication and experience in business and financial matters so as to be capable of evaluating the merits and risks of the prospective investment in the Securities, and has so evaluated the merits and risks of such investment. Such Purchaser is able to bear the economic risk of an investment in the Securities and, at the present time, is able to afford a complete loss of such investment.

(e) Access to Information. Such Purchaser acknowledges that it has had the opportunity to review the Transaction Documents (including all exhibits and schedules thereto) and the SEC Reports and has been afforded, subject to Regulation FD, (i) the opportunity to ask such questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the offering of the Securities and the merits and risks of investing in the Securities; (ii) access to information about the Company and its financial condition, results of operations, business, properties, management and prospects sufficient to enable it to evaluate its investment; and (iii) the opportunity to obtain such additional information that the Company possesses or can acquire without unreasonable effort or expense that is necessary to make an informed investment decision with respect to the investment. Such Purchaser acknowledges and agrees that neither the Company, nor its Affiliates or anyone else has provided such Purchaser with any information or advice with respect to the Securities nor is such information or advice necessary or desired.

(f) Certain Transactions and Confidentiality. Other than consummating the transactions contemplated hereunder, such Purchaser has not, nor has any Person acting on behalf of or pursuant to any understanding with such Purchaser, directly or indirectly executed any purchases or sales, including Short Sales, of the securities of the Company during the period commencing as of the time that such Purchaser first received a term sheet (written or oral) from the Company or any other Person representing the Company setting forth the material terms of the transactions contemplated hereunder and ending immediately prior to the execution hereof. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the representation set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement. Other than to other Persons party to this Agreement or to such Purchaser's representatives, including, without limitation, its officers, directors, partners, legal and other advisors, employees, agents and Affiliates, such Purchaser has maintained the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction). Notwithstanding the foregoing, for avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to the identification of the availability of, or securing of, available shares to borrow in order to effect Short Sales or similar transactions in the future.

The Company acknowledges and agrees that the representations contained in this Section 3.2 shall not modify, amend or affect such Purchaser's right to rely on the Company's representations and warranties contained in this Agreement or any representations and warranties contained in any other Transaction Document or any other document or instrument executed and/or delivered in connection with this Agreement or the consummation of the transaction contemplated hereby.

ARTICLE 4. OTHER AGREEMENTS OF THE PARTIES

4.1. Removal of Legends.

(a) The Shares, the Pre-Funded Warrants, the Common Warrants and the Warrant Shares may only be disposed of in compliance with state and federal securities laws. In connection with any transfer of the Shares or the Warrant Shares other than pursuant to an effective registration statement or Rule 144, to the Company or to an Affiliate of a Purchaser or in connection with a pledge as contemplated in Section 4.1(b), the Company may require the transferor to provide to the Company an opinion of counsel selected by the transferor and reasonably acceptable to the Company at the cost of 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 Shares, Pre-Funded Warrants or Warrant Shares under the Securities Act.

(b) Each Purchaser agrees to the imprinting, so long as is required by this Section 4.1, of a legend on any of the Shares, the Pre-Funded Warrants or the Warrant Shares in substantially the following form:

NEITHER THIS SECURITY NOR THE SECURITIES INTO 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. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT WITH A REGISTERED BROKER-DEALER OR OTHER LOAN WITH A FINANCIAL INSTITUTION THAT IS AN “ACCREDITED INVESTOR” AS DEFINED IN RULE 501(a) UNDER THE SECURITIES ACT OR OTHER LOAN SECURED BY SUCH SECURITIES.

The Company acknowledges and agrees that a Purchaser may from time to time pledge pursuant to a bona fide margin agreement with a registered broker-dealer or grant a security interest in some or all of the Shares, the Pre-Funded Warrants or the Warrant Shares to a financial institution that is an “accredited investor” as defined in Rule 501(a) under the Securities Act and who agrees to be bound by the provisions of this Agreement and, if required under the terms of such arrangement, such Purchaser may transfer pledged or secured Shares, Pre-Funded Warrants or the Warrant Shares to the pledgees or secured parties. Such a pledge or transfer would not be subject to approval of the Company and no legal opinion of legal counsel of the pledgee, secured party or pledgor shall be required in connection therewith. Further, no notice shall be required of such pledge. At the appropriate Purchaser’s expense, the Company will execute and deliver such reasonable documentation as a pledgee or secured party of the Shares, Pre-Funded Warrants, or the Warrant Shares may reasonably request in connection with a pledge or transfer of the Shares, Pre-Funded Warrants or the Warrant Shares.

(c) Certificates evidencing the Shares, the Pre-Funded Warrants and the Warrant Shares (or the Transfer Agent’s records if held in book entry form) shall not contain any legend (including the legend set forth in Section 4.1(b) hereof): (i) while a registration statement covering the resale of such securities is effective under the Securities Act (the “**Effective Date**”), (ii) following any sale of such Shares or Warrant Shares pursuant to Rule 144, (iii) if such Shares or Warrant Shares are eligible for sale under Rule 144, without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such Shares or Warrant Shares and without volume or manner-of-sale restrictions or (iv) if such legend is not required under applicable requirements of the Securities Act (including Sections 4(a)(1) and 4(a)(7) judicial interpretations and pronouncements issued by the staff of the SEC). The Company shall, at its expense, cause its counsel to issue a legal opinion to the Transfer Agent promptly after the Effective Date if required by the Transfer Agent to effect the removal of the legend hereunder. If any Pre-Funded Warrants are exercised at a time when there is an effective registration statement to cover the resale of the Warrant Shares, or if such Warrant Shares may be sold under Rule 144 and the Company is then in compliance with the current public information required under Rule 144, or if the Warrant Shares may be sold under Rule 144 without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such Warrant Shares and without volume or manner-of-sale restrictions or if such legend is not otherwise required under applicable requirements of the Securities Act (including Sections 4(a)(1) and 4(a)(7), judicial interpretations and pronouncements issued by the staff of the SEC) then such Warrant Shares shall be issued or reissued free of all legends. The Company agrees that following the effective date of any registration statement or at such time as such legend is no longer required under this Section 4.1(c), it will, no later than two Trading Days following the delivery by a Purchaser to the Company or the Transfer Agent of a certificate representing restricted Shares or Warrant Shares, as applicable, issued with a restrictive legend (such second Trading Day, the “**Legend Removal Date**”), deliver or cause to be delivered to such Purchaser a certificate representing such Shares or Warrant Shares that is free from all restrictive and other legends. The Company may not make any notation on its records or give instructions to the Transfer Agent that enlarge the restrictions on transfer set forth in this Section 4.1. Certificates for Shares or Warrant Shares subject to legend removal hereunder shall be transmitted by the Transfer Agent to the Purchaser by crediting the account of the Purchaser’s prime broker with the Depository Trust Company system as directed by such Purchaser. The Company shall be responsible for any delays caused by its Transfer Agent.

(d) In addition to such Purchaser's other available remedies, subject to Section 5.18(a), but not Section 5.18(b), (i) the Company shall pay to a Purchaser, in cash, as partial liquidated damages and not as a penalty, for each \$1,000 of the Shares or Warrant Shares subject to such request, \$10 per Trading Day for each Trading Day after the Legend Removal Date (increasing to \$20 per Trading Day after the fifth Trading Day) until such certificate is delivered without a legend. Nothing herein shall limit such Purchaser's right to pursue actual damages for the Company's failure to deliver certificates representing any Securities as required by the Transaction Documents, and such Purchaser shall have the right to pursue all remedies available to it at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief, and (ii) if after the Legend Removal Date such Purchaser purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by such Purchaser of all or any portion of the number of Shares or Warrant Shares, or a sale of a number of Shares or Warrant Shares equal to all or any portion of the number of Shares or Warrant Shares that such Purchaser anticipated receiving from the Company without any restrictive legend, then, the Company shall pay to such Purchaser, in cash, an amount equal to the excess of such Purchaser's total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased (including brokerage commissions and other out-of-pocket expenses, if any) over the product of (A) such number of Shares or Warrant Shares that the Company was required to deliver to such Purchaser by the Legend Removal Date multiplied by (B) the highest closing sale price of the Common Stock on any Trading Day during the period commencing on the date of the delivery by such Purchaser to the Company of the applicable Warrant Shares and ending on the date of such delivery and payment under this Section 4.1(d).

(e) In the event a Purchaser shall request delivery of unlegended shares as described in this Section 4.1 and the Company is required to deliver such unlegended shares, (i) it shall pay all fees and expenses associated with or required by the legend removal and/or transfer including but not limited to legal fees, Transfer Agent fees and overnight delivery charges and taxes, if any, imposed by any applicable government upon the issuance of Common Stock; and (ii) the Company may not refuse to deliver unlegended shares based on any claim that such Purchaser or anyone associated or affiliated with such Purchaser has not complied with Purchaser's obligations under the Transaction Documents, or for any other reason, unless, an injunction or temporary restraining order from a court, on notice, restraining and or enjoining delivery of such unlegended shares shall have been sought and obtained by the Company and the Company has posted a surety bond for the benefit of such Purchaser in the amount of the greater of (i) 150% of the amount of the aggregate purchase price of the applicable Shares or Warrant Shares, or (ii) the highest VWAP during the five (5) Trading Days before the issue date of the injunction multiplied by the number of unlegended shares to be subject to the injunction, which bond shall remain in effect until the completion of the litigation of the dispute and the proceeds of which shall be payable to such Purchaser to the extent Purchaser obtains judgment in Purchaser's favor.

(f) The Company shall (A) pay the reasonable legal fees of the Purchaser's choice (provided such counsel is reasonably acceptable to the Company) (in an amount not to exceed \$500 per legal opinion, and not more often than once per week per Purchaser) in connection with the issuance of Shares or the exercise of the Pre-Funded Warrants, and (B) cause its attorneys to promptly provide any opinion or reliance opinion to the Transfer Agent.

4.2. Furnishing of Information; Public Information.

(a) Until the earliest of the time that no Purchaser owns Securities, the Company covenants to use its reasonable best efforts to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the Exchange Act even if the Company is not then subject to the reporting requirements of the Exchange Act.

(b) At any time during the period commencing from the six (6) month anniversary of the Closing Date and ending at such time that all of the Securities may be sold without the requirement for the Company to be in compliance with Rule 144(c)(1) and otherwise without restriction or limitation pursuant to Rule 144, if the Company (i) shall fail for any reason to satisfy the current public information requirement under Rule 144(c) or (ii) has ever been an issuer described in Rule 144(i)(1)(i) or becomes an issuer in the future, and the Company shall fail to satisfy any condition set forth in Rule 144(i)(2) (a “**Public Information Failure**”), then, in addition to such Purchaser’s other available remedies, the Company shall pay to such Purchaser, in cash, as partial liquidated damages and not as a penalty, by reason of any such delay in or reduction of its ability to sell the applicable Securities, an amount in cash equal to one percent (1.0%) of the Applicable Amount on the day of a Public Information Failure and on every thirtieth (30th) day (pro rated for periods totaling less than thirty days) thereafter until the earlier of (a) the date such Public Information Failure is cured and (b) such time that such public information is no longer required for the Purchaser to transfer the Securities pursuant to Rule 144.

For purposes of this Section, the term “**Applicable Amount**” means the aggregate Purchase Price paid by such Purchaser for Securities on the day of a Public Information Failure and on every thirtieth (30th) day thereafter until the earlier of the cure of such Public Information Failure or such time that public information is no longer required under Rule 144 for transfer.

Public Information Failure payments shall be paid on the earlier of (i) the last day of the calendar month during which such payments are incurred and (ii) the third (3rd) Business Day after the event or failure giving rise to such payments is cured. In the event the Company fails to make Public Information Failure payments in a timely manner, such payments shall bear interest at the rate of 1.5% per month (pro rated for partial months) until paid in full.

Nothing herein shall limit the Purchaser’s right to pursue actual damages for the Public Information Failure, and the Purchaser shall have the right to pursue all remedies available to it at law or in equity, including, without limitation, a decree of specific performance and/or injunctive relief.

4.3. Integration. The Company shall not sell, offer for sale or solicit offers to buy or otherwise negotiate in respect of any security (as defined in Section 2(a)(1) of the Securities Act) that would be integrated with the offer or sale of the Securities for purposes of the rules and regulations of any Principal Market such that it would require shareholder approval prior to the closing of such other transaction unless shareholder approval is obtained before the closing of such subsequent transaction.

4.4. Securities Laws Disclosure; Publicity. The Company shall file a press release disclosing the material terms of this Agreement, prior to 9:00 AM (New York Time) on the first Trading Day after the date hereof. The Company shall file a Current Report on Form 8-K prior to its due date in accordance with the SEC’s rules. From and after the filing of the press release as provided in this Section 4.4, the Company represents to each Purchaser that it shall have publicly disclosed all material, non-public information delivered to each Purchaser by the Company or any of its Subsidiaries, or any of their respective officers, directors, employees or agents in connection with the transactions contemplated by the Transaction Documents. In addition, effective upon the issuance of such press release, the Company acknowledges and agrees that any and all confidentiality or similar obligations under any agreement, whether written or oral, between the Company, any of its Subsidiaries or any of their respective officers, directors, agents, employees or Affiliates on the one hand, and any of the Purchasers or any of their Affiliates on the other hand, shall terminate. The Company and each Purchaser shall consult with each other in issuing any press releases with respect to the transactions contemplated hereby, and neither the Company nor any Purchaser shall issue any such press release nor otherwise make any such public statement (other than the press release as provided in this Section 4.4, the Form 8-K approved by Purchaser, and the registration statement registering the resale of the Securities) without the prior consent of the Company, with respect to any press release of any Purchaser, or without the prior consent of each Purchaser, with respect to any press release of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law, in which case the disclosing party shall promptly provide the other party with prior notice of such public statement or communication. Notwithstanding the foregoing, the Company shall not publicly disclose the name of any Purchaser, or include the name of any Purchaser in any filing with the SEC or any regulatory agency or Principal Market, without the prior written consent of such Purchaser, except (a) as required by the staff of the SEC in connection with the filing of final Transaction Documents with the SEC and (b) to the extent such disclosure is required by law or Principal Market regulations, in which case the Company shall provide the Purchasers with prior notice of such disclosure permitted under this clause (b).

4.5. Shareholder Rights Plan. No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that any Purchaser is an “Acquiring Person” under any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or similar anti-takeover plan or arrangement in effect or hereafter adopted by the Company, or that any Purchaser could be deemed to trigger the provisions of any such plan or arrangement, by virtue of receiving Securities under the Transaction Documents or under any other agreement between the Company and any Purchaser.

4.6. Non-Public Information. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, which shall be disclosed pursuant to Section 4.4, the Company covenants and agrees that neither it, nor any other Person acting on its behalf will provide any Purchaser or its agents or counsel with any information that constitutes, or the Company reasonably believes constitutes, material non-public information, unless prior thereto such Purchaser shall have consented to the receipt of such information and agreed with the Company to keep such information confidential. To the extent that any notice provided pursuant to any Transaction Document or any other communications made by the Company, or information provided, to any Purchaser constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, and such information was provided without such Purchaser’s prior written consent, the Company shall simultaneously file material non-public information with the SEC pursuant to a Current Report on Form 8-K. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company. To the extent that the Company delivers any material, non-public information to a Purchaser without such Purchaser’s consent, the Company hereby covenants and agrees that such Purchaser shall not have any duty of confidentiality to the Company, any of its Subsidiaries, or any of their respective officers, directors, agents, employees or Affiliates, not to trade on the basis of, such material, non-public information, provided that the Purchaser shall remain subject to applicable law. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company. In addition to any other remedies provided by this Agreement or other Transaction Documents, if the Company provides any material, non-public information to the Purchasers without their prior written consent, and it fails to immediately (no later than the next Trading Day) file a Form 8-K disclosing this material, non-public information, it shall, subject to Section 5.18, pay each Purchaser as partial liquidated damages and not as a penalty a sum equal to \$500 per day for each \$100,000 of each Purchaser’s Subscription Amount beginning with the day the information is disclosed to the Purchaser and ending and including the day the Form 8-K disclosing this information is filed; provided that no such liquidated damages shall be owed to any Purchaser not then holding Securities.

4.7. Use of Proceeds. The Company shall use the net proceeds from the sale of Securities hereunder at the Initial Closing for working capital purposes and shall not use such proceeds: (a) for the satisfaction of any debt, (b) for the redemption of any Common Stock or Common Stock Equivalents, (c) for the settlement of any outstanding litigation, (d) in violation of FCPA or OFAC regulations, (e) to lend money, give credit, or make advances to any officers, directors, employees or affiliates of the Company or (f) for the purchase of real estate.

4.8. Indemnification of the Purchasers. Subject to the provisions of this Section 4.8, the Company will indemnify and hold the Purchaser and its directors, officers, shareholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls such Purchaser (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, shareholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling persons (each, a “**Purchaser Party**”) harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, costs and expenses, including all judgments, amounts paid in settlements, court costs and reasonable attorneys’ fees and costs of investigation (including local counsel, if retained) that any such Purchaser Party may suffer or incur as a result of or relating to (a) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents or (b) any action instituted against the Purchaser Parties in any capacity, or any of them or their respective Affiliates, by any shareholder of the Company who is not an Affiliate of such Purchaser Party, with respect to any of the transactions contemplated by the Transaction Documents (unless such action is based upon a breach of such Purchaser Party’s representations, warranties or covenants under the Transaction Documents or any agreements or understandings such Purchaser Party may have with any such shareholder or any conduct by such Purchaser Party which constitutes willful misconduct or gross negligence). If any action shall be brought against any Purchaser Party in respect of which indemnity may be sought pursuant to this Agreement, such Purchaser Party shall promptly notify the Company in writing, and the Company shall have the right to assume the defense thereof with counsel of its own choosing reasonably acceptable to the Purchaser Party. Any Purchaser Party shall have the right to employ separate counsel in any such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Purchaser Party except to the extent that (i) the employment thereof has been specifically authorized by the Company in writing, (ii) the Company has failed after a reasonable period of time to assume such defense and to employ counsel or (iii) in such action there is, in the reasonable opinion of counsel to the Purchaser Party, a material conflict on any material issue between the position of the Company and the position of such Purchaser Party, in which case the Company shall be responsible for the reasonable fees and expenses of no more than one such separate counsel for such Purchaser (in addition to local counsel, if retained). The Company will not be liable to any Purchaser Party under this Agreement (y) for any settlement by a Purchaser Party effected without the Company’s prior written consent, which shall not be unreasonably withheld or delayed; or (z) to the extent, but only to the extent that a loss, claim, damage or liability is attributable to any Purchaser Party’s breach of any of the representations, warranties, covenants or agreements made by such Purchaser Party in this Agreement or in the other Transaction Documents. The Purchaser Parties shall have the right to settle any action against any of them by the payment of money provided that they cannot agree to any equitable relief and the Company, its officers, directors and Affiliates receive unconditional releases in customary form. The indemnification required by this Section 4.8 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or are incurred. The indemnity agreements contained herein shall be in addition to any cause of action or similar right of any Purchaser Party against the Company or others and any liabilities the Company may be subject to pursuant to law.

4.9. Reservation of Common Stock. Immediately upon the Closing, the Company shall reserve from its duly authorized and unissued Common Stock a number of shares equal to the sum of (i) the number of shares of Common Stock then issuable upon exercise of all the Pre-Funded Warrants and (ii) the number of shares of Common Stock then issuable upon exercise of all the Common Warrants (the “**Reserved Amount**”). The Company shall execute, and shall cause its transfer agent to execute and deliver, a reservation letter in the form attached hereto as Exhibit D, and shall take all necessary action to ensure the Reserved Amount is maintained at all times until the Pre-Funded Warrants and the Common Warrants have been exercised in full.

4.10. Listing of Common Stock. The Company hereby agrees to use its reasonable best efforts to maintain the listing or quotation of the Common Stock on the Principal Market on which it is currently listed or quoted. The Company will then take all action necessary to continue the listing and trading of its Common Stock on a Principal Market and will comply in all respects with the Company’s reporting, filing and other obligations under the bylaws or rules of the Principal Market. The Company agrees to maintain the eligibility of the Common Stock for electronic transfer through the DTC or another established clearing corporation, including, without limitation, by timely payment of fees to the DTC or such other established clearing corporation in connection with such electronic transfer.

4.11. Equal Treatment of Purchasers. No consideration (including any modification of any Transaction Document) shall be offered or paid to any Person to amend or consent to a waiver or modification of any provision of the Transaction Documents unless the same consideration is also offered to all of the parties to the Transaction Documents. For clarification purposes, this provision constitutes a separate right granted to each Purchaser by the Company and negotiated separately by each Purchaser, and is intended for the Company to treat the Purchasers as a class and shall not in any way be construed as the Purchasers acting in concert or as a group with respect to the purchase, disposition or voting of Securities or otherwise.

4.12. Certain Transactions and Confidentiality. Each Purchaser, severally and not jointly with the other Purchasers, covenants that neither it nor any Affiliate acting on its behalf or pursuant to any understanding with it will execute any purchases or sales, including Short Sales of any of the Company's securities during the period commencing with the execution of this Agreement and ending at such time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company pursuant to the initial press release as described in Section 4.4, such Purchaser will maintain the confidentiality of the existence and terms of this transaction and the information included in the Disclosure Schedules. Notwithstanding the foregoing and notwithstanding anything contained in this Agreement to the contrary, the Company expressly acknowledges and agrees that (i) no Purchaser makes any representation, warranty or covenant hereby that it will not engage in effecting transactions in any securities of the Company after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4, (ii) no Purchaser shall be restricted or prohibited from effecting any transactions in any securities of the Company in accordance with applicable securities laws from and after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4 and (iii) no Purchaser shall have any duty of confidentiality or duty not to trade in the securities of the Company to the Company or its Subsidiaries after the issuance of the initial press release as described in Section 4.4. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the covenant set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement.

4.13. Preservation of Corporate Existence. The Company shall preserve and maintain its corporate existence, rights, privileges and franchises in the jurisdiction of its incorporation, and qualify and remain qualified, as a foreign corporation in each jurisdiction in which such qualification is necessary in view of its business or operations and where the failure to qualify or remain qualified might reasonably have a Material Adverse Effect upon the financial condition, business or operations of the Company taken as a whole.

4.17. No Registration of Securities. Except as disclosed on Schedule 4.18, while any Securities are outstanding, the Company will not file any registration statements to register sales of Common Stock, including shares underlying any derivative securities, unless a registration statement is then in effect for the resale by the Purchasers of the Shares and the Warrant Shares.

4.18. Form D; Blue Sky Filings. The Company shall take such actions as it reasonably determines are necessary to qualify the Securities for sale to the Purchasers, or to secure an exemption from such qualification, under applicable state securities or "Blue Sky" laws of the jurisdictions in which offers and sales of the Securities are made, and shall furnish evidence of such actions promptly upon request of any Purchaser. The Company shall file, or cause to be filed, a Form D with the SEC with respect to the Securities as required under Regulation D promulgated under the Securities Act, and shall provide a copy of such filing to the Purchasers upon request.

4.19. Prohibition on Variable Rate Transactions and ATM Offerings and other Equity Issuances. From the date hereof until the date that is sixty (60) days after the Effective Date (as defined in the Registration Rights Agreement) of the initial Registration Statement covering the resale of the Shares, the Pre-Funded Warrant Shares and the Common Warrant Shares, neither the Company nor any Subsidiary shall, directly or indirectly, effect or enter into any agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction, (b) any "at-the-market offering" (as defined in Rule 415(a)(4) under the Securities Act), equity line of credit, standby equity purchase agreement or other similar continuous offering arrangement of Common Stock or Common Stock Equivalents pursuant to which the Company may sell Common Stock or Common Stock Equivalents from time to time at a future-determined price, or (c) any other issuance of Common Stock or Common Stock Equivalents. Any agreement entered into in violation of this Section 4.19 shall be deemed null and void *ab initio* with respect to the Purchasers, and each Purchaser shall be entitled to obtain injunctive relief against the Company to preclude any such issuance, which remedy shall be in addition to any right to collect damages.

4.20. Lock-Up Agreements; Company Standstill. The Company shall cause each of its directors, executive officers, holders of five percent (5%) or more of the Company's outstanding Common Stock, and the other Persons set forth on Schedule B hereto to execute and deliver to the Purchasers the Lock-Up Agreements, pursuant to which each such Person shall agree not to, directly or indirectly, offer, sell, contract to sell, grant any option to purchase, or otherwise dispose of any shares of the Company's securities during the six (6) month period following the Closing Date, subject to customary exceptions. In addition, the Company hereby agrees that it shall not, directly or indirectly, offer, sell, contract to sell, issue, or otherwise dispose of any shares of the Company's securities during the sixty (60) day period following the Effective Date, subject to customary exceptions. The Company shall not amend, modify, waive or terminate any provision of any of the Lock-Up Agreements except to extend the term of the lock-up period and shall enforce the provisions of each Lock-Up Agreement in accordance with its terms. If any party to a Lock-Up Agreement breaches any provision of a Lock-Up Agreement, the Company shall promptly use its best efforts to seek specific performance of the terms of such Lock-Up Agreement.

4.21. Exercise Procedures. The form of Notice of Exercise included in the Pre-Funded Warrants and the Common Warrants sets forth the totality of the procedures required of the Purchasers in order to exercise the Pre-Funded Warrants and the Common Warrants. No additional legal opinion, other information or instructions shall be required of the Purchasers to exercise the Pre-Funded Warrants or the Common Warrants. Without limiting the preceding sentences, no ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise form be required in order to exercise the Pre-Funded Warrants or the Common Warrants. The Company shall honor exercises of the Pre-Funded Warrants and the Common Warrants and shall deliver Warrant Shares in accordance with the terms, conditions and time periods set forth in the Transaction Documents.

4.22. Stockholder Approval. The Company shall use commercially reasonable efforts to hold a special meeting of its stockholders on or prior to ninety (90) days after the Closing Date for the purpose of obtaining Stockholder Approval with respect to the issuance of the Common Warrants, with the recommendation of the Company's Board of Directors that such proposal be approved, and the Company shall solicit proxies from its stockholders in connection therewith in the same manner as all other management proposals in such proxy statement and all management-appointed proxyholders shall vote their proxies in favor of such proposal. If the Company does not obtain Stockholder Approval at such special meeting of the stockholders, the Company shall seek such Stockholder Approval at the next meeting of stockholders at which the Company is seeking approval of other business matters or, if earlier, at the Company's next annual meeting of stockholders, and if the Company does not obtain Stockholder Approval at such meeting, the Company shall call a special meeting every sixty (60) days thereafter to seek such Stockholder Approval until the date on which Stockholder Approval is obtained or the date that is five and one-half (5.5) years after the Closing Date.

ARTICLE 5. MISCELLANEOUS

5.1. Termination. This Agreement may be terminated by any Purchaser, as to such Purchaser's obligations hereunder only and without any effect whatsoever on the obligations between the Company and the other Purchasers, by written notice to the other parties, if the Closing has not been consummated on or before July 29, 2026; provided, however, that no such termination will affect the right of any party to sue for any breach by any other party (or parties).

5.2. Fees and Expenses. Except as expressly set forth in this Section 5.2 and in the Transaction Documents to the contrary, each party shall pay the fees and expenses of its advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party incident to the negotiation, preparation, execution, delivery and performance of this Agreement. The Company shall pay all Transfer Agent fees (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company and any exercise notice delivered by a Purchaser), stamp taxes and other taxes and duties levied in connection with the delivery of any Securities to the Purchasers.

5.3. Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules.

5.4. Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of: (a) the date of transmission, if such notice or communication is delivered via facsimile or email attachment at the facsimile number or email address as set forth on the signature pages attached hereto at or prior to 5:30 p.m. (New York City time) on a Trading Day, (b) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile or email attachment at the facsimile number or email address as set forth on the signature pages attached hereto on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (c) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as set forth on the signature pages attached hereto.

5.5. Amendments; Waivers. Except as provided in the last sentence of this Section 5.5, no provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and the Purchaser's which hold at least 50.1% in interest in the Securities at the time of such amendment or waiver or, in the case of a waiver, by the party against whom enforcement of any such waived provision is sought; provided, that if any amendment, modification or waiver disproportionately and adversely impacts a Purchaser (or group of Purchasers), the consent of such disproportionately impacted Purchaser (or group of Purchasers) shall also be required. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right. Any proposed amendment or waiver that disproportionately, materially and adversely affects the rights and obligations of any Purchaser relative to the comparable rights and obligations of the other Purchasers shall require the prior written consent of such adversely affected Purchaser. Any amendment effected in accordance with accordance with this Section 5.5 shall be binding upon each Purchaser and holder of Securities and the Company.

5.6. Headings. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof.

5.7. Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns. The Company may not assign this Agreement or any rights or obligations hereunder without the prior written consent of each Purchaser (other than by merger). Any Purchaser may assign any or all of its rights under this Agreement to any Person to whom such Purchaser assigns or transfers any Securities, provided that such transferee agrees in writing to be bound, with respect to the transferred Securities, by the provisions of the Transaction Documents that apply to the Purchasers.

5.8. No Third-Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person, except as otherwise set forth in Section 4.8 and this Section 5.8.

5.9. Governing Law; Exclusive Jurisdiction; Attorneys' Fees. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflicts of law thereof. Each party agrees that all Actions concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Document (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts in New York County, New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in New York County, New York for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Action, any claim that it is not personally subject to the jurisdiction of any such court, that such Action is improper or is an inconvenient venue for such Action. Each party hereby irrevocably waives personal service of process and consents to process being served in any such Action 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 Agreement 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. If any party shall commence an Action to enforce any provisions of the Transaction Documents, then, in addition to the obligations of the Company elsewhere in this Agreement, the prevailing party in such Action shall be reimbursed by the non-prevailing party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such Action.

5.10. Survival. The representations and warranties contained herein shall survive the Closing and the delivery of the Securities.

5.11. Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to each other party, it being understood that the parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a “.pdf” format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or “.pdf” signature page were an original thereof.

5.12. Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

5.13. Rescission and Withdrawal Right. Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) any of the other Transaction Documents, whenever any Purchaser exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Purchaser may rescind or withdraw, in its sole discretion from time to time upon written notice to the Company, any relevant notice, demand or election in whole or in part without prejudice to its future actions and rights; provided, however, that in the case of a rescission of an exercise of a Warrant, the applicable Purchaser shall be required to return any shares of Common Stock subject to any such rescinded exercise notice concurrently with the return to such Purchaser of the aggregate exercise price paid to the Company for such shares and the restoration of such Purchaser’s right to acquire such shares pursuant to such Purchaser’s Warrant (including issuance of a replacement warrant certificate evidencing such restored right).

5.14. Replacement of Securities. If any certificate or instrument evidencing any Securities is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof (in the case of mutilation), or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction without requiring the posting of any bond.

5.15. Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Purchasers and the Company will be entitled to specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations contained in the Transaction Documents and hereby agree to waive and not to assert in any Action for specific performance of any such obligation the defense that a remedy at law would be adequate.

5.16. Payment Set Aside. To the extent the Company makes a payment or payments to any Purchaser pursuant to any Transaction Document or a Purchaser enforces or exercises its rights thereunder, and such payment or payments or the proceeds of such enforcement or exercise or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside, recovered from, disgorged by or are required to be refunded, repaid or otherwise restored to the Company, a trustee, receiver or any other Person under any law (including, without limitation, any bankruptcy law, state or federal law, common law or equitable cause of action), then to the extent of any such restoration the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such enforcement or setoff had not occurred.

5.17. Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under any Transaction Document are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance or non-performance of the obligations of any other Purchaser under any Transaction Document. Nothing contained herein or in any other Transaction Document, and no action taken by any Purchaser pursuant hereto or thereto shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Purchaser shall be entitled to independently protect and enforce its rights including, without limitation, the rights arising out of this Agreement or out of the other Transaction Documents, and it shall not be necessary for any other Purchaser to be joined as an additional party in any Proceeding for such purpose. Each Purchaser has been represented by its own separate legal counsel in its review and negotiation of the Transaction Documents. The Company has elected to provide all Purchasers with the same terms and Transaction Documents for the convenience of the Company and not because it was required or requested to do so by any of the Purchasers. It is expressly understood and agreed that each provision contained in this Agreement and in each other Transaction Document is between the Company and a Purchaser, solely, and not between the Company and the Purchasers collectively and not between and among the Purchasers.

5.18. Liquidated Damages. The Company's obligations to pay any partial liquidated damages or other amounts owing under the Transaction Documents is a continuing obligation of the Company, and shall not terminate until all unpaid partial liquidated damages and other amounts have been paid notwithstanding the fact that the instrument or security pursuant to which such partial liquidated damages or other amounts are due and payable shall have been canceled.

5.19. Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then such action may be taken or such right may be exercised on the next succeeding Trading Day.

5.20. Construction. The parties agree that each of them and/or their respective counsel have reviewed and had an opportunity to revise the Transaction Documents and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of the Transaction Documents or any amendments thereto. In addition, each and every reference to share prices and shares of Common Stock in any Transaction Document shall be subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.

5.21. **WAIVER OF JURY TRIAL. IN ANY ACTION, SUIT, OR PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY, IRREVOCABLY AND EXPRESSLY WAIVE FOREVER TRIAL BY JURY.**

In addition, the parties hereto agree that any action, proceeding or claim arising out of or relating in any way to this Agreement or the other Transaction Documents shall be resolved through final and binding arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association.

5.22. Non-Circumvention. The Company hereby covenants and agrees that the Company will not, by amendment of its Charter, including any Certificates of Designation, or Bylaws or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issue or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Agreement, and will at all times in good faith carry out all of the provision of this Agreement and take all action as may be required to protect the rights of all holders of the Securities. Without limiting the generality of the foregoing or any other provision of this Agreement or the other Transaction Documents, the Company (a) shall not increase the par value of any shares of Common Stock receivable upon exercise of the Pre-Funded Warrants or the Common Warrants above the exercise price of the Pre-Funded Warrants or the Common Warrants, as applicable, then in effect and (b) shall take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of the Pre-Funded Warrants and the Common Warrants. Notwithstanding anything herein to the contrary, if after six months from the Initial Closing, a holder is not permitted to exercise the Pre-Funded Warrants or the Common Warrants, in full, for any reason, the Company shall use its best efforts to promptly remedy such failure, including, without limitation, obtaining such consent or approvals as necessary to permit such exercise.

(Signature Pages Follow)

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

HCW BIOLOGICS INC.

Address for Notice:

HCW Biologics Inc.
2929 N. Commerce Pkwy.
Miramar, FL 33025
Attn: Hing C. Wong, Ph.D.
Email: hingwong@hcwbiologics.com

By: _____
Name: Hing C. Wong, Ph.D.
Title: Chief Executive Officer

With a copy to (which shall not constitute notice):

Clark Hill PLC
130 E. Randolph, Suite 3900
Chicago, IL 60601
Attn: Jim Groth, Esq.
Email: jgroth@clarkhill.com

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK
SIGNATURE PAGE FOR PURCHASER FOLLOWS]

[Company Signature Page to Securities Purchase Agreement]

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

Name of Purchaser: _____

Signature of Authorized Signatory of Purchaser: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Email Address of Authorized Signatory: _____

Facsimile Number of Authorized Signatory: _____

Address for Notice to Purchaser: _____

Address for Delivery of Securities to Purchaser (if not same as address for notice):

Subscription Amount: \$ _____

Shares: _____ Pre-Funded Warrants (in lieu of Shares): _____

_____ Common Stock Purchase Warrants exercisable into _____ shares of Common Stock

Aggregate Purchase Price: \$ _____

EIN Number: _____

[Purchaser Signature Page to Securities Purchase Agreement]

EXHIBIT A

Form of Pre-Funded Warrant

[**]

Exhibit B

Form of Registration Rights Agreement

[**]

Exhibit C

Form of Common Warrant

[***]

Exhibit D

Form of Reservation Letter

[***]

Exhibit E

Form of Lockup Agreement

[***]

Schedule B

Lockup Parties

Disclosure Schedules

[**]

FORM OF REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this “Agreement”) is made and entered into as of July 29, 2026 between HCW Biologics Inc., a Delaware corporation (the “Company”), and each purchaser appearing on the signature page to the Purchase Agreement (as defined below) (each such purchaser, a “Purchaser” and, collectively, the “Purchasers”).

WHEREAS, the Company and the Purchasers are parties to that certain Securities Purchase Agreement, dated as of the date of this Agreement (the “Purchase Agreement”), pursuant to which the Purchasers are purchasing (i) shares of Common Stock (the “Shares”), (ii) Pre-Funded Warrants (the “Pre-Funded Warrants”) to purchase shares of Common Stock (the “Pre-Funded Warrant Shares”), and (iii) Common Stock Purchase Warrants (the “Common Warrants”) to purchase shares of Common Stock (the “Common Warrant Shares” and together with the Pre-Funded Warrant Shares, the “Warrant Shares”) of the Company; and

WHEREAS, in connection with the consummation of the transactions contemplated by the Purchase Agreement, and pursuant to the terms of the Purchase Agreement, the parties desire to enter into this Agreement in order to grant certain registration rights to the Purchasers as set forth below.

NOW, THEREFORE, in consideration of the foregoing and the mutual and dependent covenants hereinafter set forth, the parties agree as follows:

1. Defined Terms. As used in this Agreement, the following terms shall have the following meanings:

“Advice” shall have the meaning set forth in Section 6(d).

“Agreement” shall have the meaning set forth in the Preamble.

“CDI 612.09” means Section 612.09 of the Commission’s Compliance and Disclosure Interpretations.

“Closing” means the closing of the purchase and sale of the Shares, the Pre-Funded Warrants and the Common Warrants pursuant to the Purchase Agreement.

“Commission” means the U.S. Securities and Exchange Commission.

“Common Stock” means the Company’s common stock, par value \$0.0001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed into.

“Company” shall have the meaning set forth in the Preamble.

“Effectiveness Date” means, with respect to the Initial Registration Statement required to be filed hereunder or any other Registration Statement, sixty (60) days following the Closing; provided, however, that (x) in the event the Company is notified by the Commission that one or more of the Registration Statements will not be reviewed or is no longer subject to further review and comments, the Effectiveness Date as to such Registration Statement shall be the earlier of (A) the fifth Trading Day following the date on which the Company is so notified, and (B) the thirtieth (30th) Trading Day following the Closing.

“Effectiveness Period” shall have the meaning set forth in Section 2(a).

“Event” shall have the meaning set forth in Section 2(b).

“Event Date” shall have the meaning set forth in Section 2(b).

“Exchange Act” means the Securities Exchange Act of 1934.

“Filing Date” means, with respect to the Initial Registration Statement required hereunder, fifteen (15) Trading Days following the Closing, provided, however, that such 15-day period shall be extended on a day-for-day basis for each Trading Day during which the Holders are reviewing such Registration Statement pursuant to Section 3(a), and with respect to any additional Registration Statements which may be required pursuant to this Agreement, the earliest practical date on which the Company is permitted by SEC Guidance to file such additional Registration Statements related to the Registrable Securities.

“Holder” or “Holders” means the holder or holders, as the case may be, from time to time of Registrable Securities.

“Indemnified Party” shall have the meaning set forth in Section 5(b).

“Indemnifying Party” shall have the meaning set forth in Section 5(b).

“Initial Registration Statement” means the initial Registration Statement filed pursuant to this Agreement.

“Losses” shall have the meaning set forth in Section 5(b).

“Person” means an individual, corporation, partnership, joint venture, limited liability company, governmental authority, unincorporated organization, trust, association or other entity.

“Plan of Distribution” shall have the meaning set forth in Section 2(a).

“Pre-Funded Warrants” shall have the meaning ascribed to such term in the Purchase Agreement.

“Pre-Funded Warrant Shares” shall have the meaning ascribed to such term in the Recitals.

“Common Warrants” shall have the meaning ascribed to such term in the Recitals.

“Common Warrant Shares” shall have the meaning ascribed to such term in the Recitals.

“Proceeding” means any action, claim, suit, investigation or legal proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“Prospectus” means the prospectus included in a Registration Statement (including, without limitation, a prospectus that includes any information previously omitted from a prospectus filed as part of an effective registration statement in reliance upon Rule 430A promulgated by the Commission pursuant to the Securities Act), as amended or supplemented by any prospectus supplement, with respect to the terms of the offering of any portion of the Registrable Securities covered by a Registration Statement, and all other amendments and supplements to the Prospectus, including post-effective amendments, and all material incorporated by reference or deemed to be incorporated by reference in such Prospectus.

“Purchasers” shall have the meaning set forth in the Preamble.

“Purchase Agreement” shall have the meaning set forth in the Recitals.

“Registrable Securities” means (a) the Shares issued pursuant to the Purchase Agreement, (b) the Pre-Funded Warrant Shares issuable upon exercise of the Pre-Funded Warrants issued pursuant to the Purchase Agreement, (c) the Common Warrant Shares issuable upon exercise of the Common Warrants issued pursuant to the Purchase Agreement, and (d) any securities issued or issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect to the foregoing provided, however, that any such Registrable Securities shall cease to be Registrable Securities (and the Company shall not be required to maintain the effectiveness of any, or file another, Registration Statement hereunder with respect thereto) for so long as (a) a Registration Statement with respect to the sale of such Registrable Securities is declared effective by the Commission under the Securities Act and such Registrable Securities have been disposed of by the Holder in accordance with such effective Registration Statement, (b) such Registrable Securities have been previously sold in accordance with Rule 144, or (c) such securities become eligible for resale without volume or manner-of-sale restrictions and without current public information pursuant to Rule 144.

“Registration Statement” means any registration statement required to be filed hereunder pursuant to Section 2(a) and any additional registration statements contemplated by Section 3(b), including (in each case) the Prospectus, amendments and supplements to any such registration statement or Prospectus, including pre- and post-effective amendments, all exhibits thereto, and all material incorporated by reference or deemed to be incorporated by reference in any such registration statement.

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“Rule 415” means Rule 415 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Rule 424” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“SEC Guidance” means (i) any publicly-available written or oral guidance (including CDI 612.09), comments, requirements or requests of the Commission staff and (ii) the Securities Act.

“Securities Act” means the Securities Act of 1933.

“Selling Stockholder Questionnaire” shall have the meaning set forth in Section 3(a). “Shares” shall have the meaning ascribed to such term in the Purchase Agreement.

“Trading Day” means a day on which the New York Stock Exchange is open for trading.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange or the OTC Markets (or any successors to any of the foregoing).

“Transaction Documents” means this Agreement, the Purchase Agreement, all schedules and exhibits thereto and hereto, and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means Equiniti Trust Company, LLC, and any successor transfer agent of the Company.

“Warrant Shares” shall have the meaning ascribed to such term in the Purchase Agreement.

2. Resale Registration.

On or prior to each Filing Date, the Company shall prepare and file with the Commission a Registration Statement covering the resale of all of the Registrable Securities that are not then registered on an effective Registration Statement for an offering to be made on a continuous basis pursuant to Rule 415. Each Registration Statement filed hereunder shall be on Form S-1 (or Form S-3 if eligible) and shall contain a description of the Holders' planned distribution (unless otherwise directed by at least an 85% majority in interest of the Holders) substantially in the form of "Plan of Distribution" attached hereto as Annex A. The Company shall respond to any comments from the staff of the Commission within seven days of the receipt of such comments. In the event the amount of Registrable Securities which may be included in the Registration Statement is limited due to SEC Guidance (provided that, the Company shall use diligent efforts to advocate with the Commission for the registration of all of the Registrable Securities in accordance with the SEC Guidance, including without limitation, the CDI 612.09) the Company shall use its reasonable best efforts to register such maximum portion of the Registrable Securities as permitted by SEC Guidance. Subject to the terms of this Agreement, the Company shall use its reasonable best efforts to cause a Registration Statement to be declared effective under the Securities Act prior to the applicable Effectiveness Date, and shall use its reasonable best efforts to keep such Registration Statement continuously effective under the Securities Act until all Registrable Securities covered by such Registration Statement have been sold, or may be sold pursuant to Rule 144 without the volume or other limitations of such rule, or not required to be registered in reliance upon the exemption in Section 4(a)(1) or 4(a)(7) under the Securities Act, in either case as determined by the counsel to the Company pursuant to a written opinion letter to such effect, addressed and acceptable to the Transfer Agent and the affected Holders (the "Effectiveness Period"); provided, however, that during any period of time that the Company's financial statements contained in a prospectus do not meet the requirements of Securities Act Section 10(a)(3) and the remaining period until ten (10) days after the date its Form 10-K is required to be filed (excluding any extended period of time permitted by rule of the SEC) does not exceed thirty (30) days, the Company shall be excused from amending or supplementing its prospectus for the remaining period until the date its Form 10-K is required to be filed (including any extended period of time permitted by rule of the SEC). The Company shall telephonically request effectiveness of a Registration Statement as of 5:00 p.m. New York City time on a Trading Day. The Company shall promptly notify the Holders via facsimile or by e-mail of the effectiveness of a Registration Statement on the same Trading Day that the Company telephonically confirms effectiveness with the Commission, which shall be the date requested for effectiveness of such Registration Statement. The Company shall file a final Prospectus with the Commission as required by Rule 424. Notwithstanding any other provision of this Agreement, if any SEC Guidance sets forth a limitation on the number of Registrable Securities permitted to be registered on a particular Registration Statement (and notwithstanding that the Company used diligent efforts to advocate with the Commission for the registration of all or a greater portion of Registrable Securities), unless otherwise directed in writing by a Holder as to its Registrable Securities, the number of Registrable Securities to be registered on such Registration Statement will be reduced as follows: (1) first, the Company shall reduce or eliminate any securities to be included other than Registrable Securities; and (2) second, the Company shall reduce Registrable Securities on a pro rata basis based on the total number of unregistered Registrable Securities purchased by the Purchasers pursuant to the Purchase Agreement. In the event of a cutback hereunder, the Company shall give the Holder at least five Trading Days prior written notice along with the calculations as to such Holder's allotment.

(b) If a Registration Statement registering for resale all of the Registrable Securities (i) is not declared effective by the Commission by the Effectiveness Date of the Initial Registration Statement or any other Registration Statement (unless the sole reason for such non-registration of all or any portion of the Registrable Securities is solely as a result of SEC Guidance under Rule 415 or similar rule and CDI 612.09 which limits the number of Registrable Securities which may be included in a registration statement with respect to the Holders), or (ii) after the effective date of a Registration Statement, such Registration Statement ceases for any reason to remain continuously effective as to all Registrable Securities included in such Registration Statement, or the Holders are otherwise not permitted to utilize the Prospectus therein to resell such Registrable Securities, for more than fifteen (15) calendar days during any 12-month period (any such failure or breach being referred to as an "Event", and the date on which such Event occurs, being referred to as "Event Date"), then, in addition to any other rights the Holders may have hereunder or under applicable law, on each such Event Date and on each monthly anniversary of each such Event Date (if the applicable Event shall not have been cured by such date) until the applicable Event is cured, the Company shall pay to each Holder an amount in cash, as partial liquidated damages and not as a penalty, equal to 1.15% of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement for the Securities then held by such Holder, during which such Event continues uncured; provided, however, that in no event shall the aggregate amount of partial liquidated damages payable to any Holder pursuant to this Section 2(b) exceed fifteen percent (15%) of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement. If the Company fails to pay any partial liquidated damages pursuant to this Section in full within seven days after the date payable, the Company will pay interest thereon at a rate of 15% per annum (or such lesser maximum amount that is permitted to be paid by applicable law) to the Purchaser, accruing daily from the date such partial liquidated damages are due until such amounts, plus all such interest thereon, are paid in full. The partial liquidated damages pursuant to the terms hereof shall apply on a daily pro rata basis for any portion of a month prior to the cure of an Event. Provided, however, the foregoing liquidated damages shall not accrue or be otherwise charged during any period in which the Investor is eligible to sell the Shares on any given day under Rule 144 without the volume or other limitations of such rule, or in reliance upon the exemption in Section 4(a)(1) under the Securities Act, or after such Investor has publicly sold its Registrable Securities. Provided, further, notwithstanding anything to the contrary herein, with respect to any individual Holder, liquidated damages shall not accrue or be payable to such Holder with respect to any Event under clause (i) above solely during the period in which, and solely to the extent that, such Event results directly and solely from such Holder's failure to deliver information specifically required of such Holder under Item 507 of Regulation S-K within five (5) Business Days after the Company's written request to such Holder identifying with reasonable specificity the information required; liquidated damages shall resume accruing as to such Holder upon delivery of the requested information, and the foregoing shall in no event affect the accrual or payment of liquidated damages with respect to any other Holder.

3. Registration Procedures.

In connection with the Company's registration obligations hereunder, the Company shall:

(a) (i) Not less than three Trading Days prior to the filing of each Registration Statement and not less than one Trading Day prior to the filing of any related Prospectus or any amendment or supplement thereto (including any document that would be incorporated or deemed to be incorporated therein by reference), furnish to the Holders copies of all such documents proposed to be filed, which documents (other than those incorporated or deemed to be incorporated by reference) will be subject to the review of the Holders or counsel for the Holders, and (ii) cause its officers and directors, counsel and independent registered public accountants to respond to such inquiries as shall be necessary to conduct a reasonable investigation within the meaning of the Securities Act. The Company shall not file a Registration Statement or any such Prospectus or any amendments or supplements thereto to which the Holders of a majority of the Registrable Securities shall reasonably object in good faith with respect to disclosures relating to such Holders or the Plan of Distribution, provided that, the Company is notified of such objection in writing no later than two Trading Days after the Holders have been so furnished copies of a Registration Statement or two Trading Days after the Holders have been so furnished copies of any related Prospectus or amendments or supplements thereto. Each Holder agrees to furnish to the Company a completed questionnaire in the form attached to this Agreement as Annex B (a "Selling Stockholder Questionnaire") on a date that is not less than two Trading Days prior to the Filing Date or by the end of the fourth Trading Day following the date on which such Holder receives draft materials in accordance with this Section.

(b) The Company shall:

(i) prepare and file with the Commission such amendments, including post-effective amendments, to a Registration Statement and the Prospectus used in connection therewith as may be necessary to keep a Registration Statement continuously effective as to the applicable Registrable Securities for the Effectiveness Period and prepare and file with the Commission such additional Registration Statements in order to register for resale under the Securities Act all of the Registrable Securities,

(ii) cause the related Prospectus to be amended or supplemented by any required Prospectus supplement (subject to the terms of this Agreement), and, as so supplemented or amended, to be filed pursuant to Rule 424,

(iii) use its reasonable best efforts to respond to any comments received from the Commission with respect to a Registration Statement or any amendment thereto within seven days of the receipt of such comments, and provide as promptly as reasonably possible to the Holders true and complete copies of all correspondence from and to the Commission relating to a Registration Statement (provided that, the Company may excise any information contained therein which would constitute material non-public information as to any Holder which has not executed a confidentiality agreement with the Company), and

(iv) comply with the provisions of the Securities Act and the Exchange Act with respect to the disposition of all Registrable Securities covered by a Registration Statement during the applicable period in accordance (subject to the terms of this Agreement) with the intended methods of disposition by the Holders thereof set forth in such Registration Statement as so amended or in such Prospectus as so supplemented.

(c) The Company shall notify the Holders of Registrable Securities to be sold (which notice shall, pursuant to clauses (iii) through (vi) hereof, be accompanied by an instruction to suspend the use of the Prospectus until the requisite changes have been made) as promptly as reasonably possible (and, in the case of (i)(A) below, not less than one Trading Day prior to such filing) and (if requested by any such Person) confirm such notice in writing no later than one Trading Day following the day (i)(A) when a Prospectus or any Prospectus supplement or post-effective amendment to a Registration Statement is proposed to be filed, (B) when the Commission notifies the Company whether there will be a “review” of such Registration Statement and whenever the Commission comments in writing on such Registration Statement, and (C) with respect to a Registration Statement or any post-effective amendment, when the same has become effective, (ii) of any request by the Commission or any other federal or state governmental authority for amendments or supplements to a Registration Statement or Prospectus or for additional information, (iii) of the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of a Registration Statement covering any or all of the Registrable Securities or the initiation of any Proceedings for that purpose; (iv) of the receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Registrable Securities for sale in any jurisdiction, or the initiation or threatening of any Proceeding for such purpose, (v) of the occurrence of any event or passage of time that makes the financial statements included in a Registration Statement ineligible for inclusion therein or any statement made in a Registration Statement or Prospectus or any document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires any revisions to a Registration Statement, Prospectus or other documents so that, in the case of a Registration Statement or the Prospectus, as the case may be, it will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading and (vi) of the occurrence or existence of any pending corporate development with respect to the Company that the Company believes may be material and that, in the determination of the Company, makes it not in the best interest of the Company to allow continued availability of a Registration Statement or Prospectus, provided that, any and all of such information shall remain confidential to each Holder until such information otherwise becomes public, unless disclosure by a Holder is required by law; provided, further, that notwithstanding each Holder’s acknowledgement to keep such information confidential, each such Holder makes no acknowledgement that any such information is material, non-public information.

(d) The Company shall use its best efforts to avoid the issuance of, or, if issued, obtain the withdrawal of (i) any order stopping or suspending the effectiveness of a Registration Statement, or (ii) any suspension of the qualification (or exemption from qualification) of any of the Registrable Securities for sale in any jurisdiction, at the earliest practicable moment.

(e) The Company shall furnish to each Holder, without charge, at least one conformed copy of each such Registration Statement and each amendment thereto, including financial statements and schedules, all documents incorporated or deemed to be incorporated therein by reference to the extent requested by such Person, and all exhibits to the extent requested by such Person (including those previously furnished or incorporated by reference) promptly after the filing of such documents with the Commission; provided, that any such item which is available on the EDGAR system need not be furnished in physical form, and such number of copies of the current Prospectus as each Holder may reasonably request.

(f) Subject to the terms of this Agreement, the Company hereby consents to the use of such Prospectus and each amendment or supplement thereto by each of the selling Holders in connection with the offering and sale of the Registrable Securities covered by such Prospectus and any amendment or supplement thereto, except after the giving of any notice pursuant to Section 3(c).

(g) Intentionally Omitted.

(h) Prior to any resale of Registrable Securities by a Holder, the Company shall use its commercially reasonable efforts to register or qualify or cooperate with the selling Holders in connection with the registration or qualification (or exemption from the Registration or qualification) of such Registrable Securities for the resale by the Holder under the securities or Blue Sky laws of such jurisdictions within the United States as any Holder reasonably requests in writing, to keep each registration or qualification (or exemption therefrom) effective during the Effectiveness Period and to do any and all other acts or things reasonably necessary to enable the disposition in such jurisdictions of the Registrable Securities covered by each Registration Statement; provided, that, the Company shall not be required to qualify generally to do business in any jurisdiction where it is not then so qualified, subject the Company to any material tax in any such jurisdiction where it is not then so subject or file a general consent to service of process in any such jurisdiction.

(i) If requested by a Holder, the Company shall cooperate with such Holders to facilitate the timely preparation and delivery of certificates representing Registrable Securities to be delivered to a transferee pursuant to a Registration Statement, which certificates shall be free, to the extent permitted by the Purchase Agreement, of all restrictive legends, and to enable such Registrable Securities to be in such denominations and registered in such names as any such Holder may request.

(j) If the Company notifies the Holders in accordance with clauses (iii) through (vi) of Section 3(c) above to suspend the use of any Prospectus until the requisite changes to such Prospectus have been made, then the Holders shall suspend use of such Prospectus. The Company will use its reasonable best efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable.

(k) The Company shall comply with all applicable rules and regulations of the Commission.

(l) The Company may require each selling Holder to furnish to the Company a certified statement as to the number of shares of Common Stock beneficially owned by such Holder and, if required by the Commission, the natural persons thereof that have voting and dispositive control over the shares. The Company shall not be liable for any damages during any periods that the Company is unable to meet its obligations hereunder with respect to the registration of the Registrable Securities solely because any Holder fails to furnish such information within three Trading Days of the Company's request and any liquidated damages that are accruing at such time as to such Holder only shall be tolled and any Event that may otherwise occur solely because of such delay shall be suspended as to such Holder only, until such information is delivered to the Company.

4. Registration Expenses. All fees and expenses incident to the performance of or compliance with this Agreement by the Company shall be borne by the Company whether or not any Registrable Securities are sold pursuant to a Registration Statement. The fees and expenses referred to in the foregoing sentence shall include, without limitation, (i) all registration and filing fees (including, without limitation, fees and expenses of the Company's counsel, independent registered public accountants and transfer agent) (A) with respect to filings made with the Commission, (B) with respect to filings required to be made with any Trading Market on which the Common Stock is then listed for trading, (C) in compliance with applicable state securities or Blue Sky laws reasonably agreed to by the Company in writing (including, without limitation, fees and disbursements of counsel for the Company in connection with Blue Sky qualifications or exemptions of the Registrable Securities) and (D) (i) printing expenses (including, without limitation, expenses of printing certificates for Registrable Securities), and (ii) messenger, telephone and delivery expenses, (iii) fees and disbursements of counsel for the Company. In addition, the Company shall be responsible for all of its internal expenses incurred in connection with the consummation of the transactions contemplated by this Agreement (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties), the expense of any annual audit and the fees and expenses incurred in connection with the listing of the Registrable Securities on any Trading Market as required hereunder. In no event shall the Company be responsible for any broker-dealer or similar commissions of any Holder or, except to the extent provided for in the Transaction Documents, any legal fees or other costs of the Holders.

5. Indemnification.

(a) Indemnification by the Company. The Company shall, notwithstanding any termination of this Agreement, indemnify and hold harmless each Holder, the officers, directors, members, partners, agents and employees (and any other Persons with a functionally equivalent role of a Person holding such titles, notwithstanding a lack of such title or any other title) of each of them, each Person who controls any such Holder (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act) and the officers, directors, members, stockholders, partners, agents and employees (and any other Persons with a functionally equivalent role of a Person holding such titles, notwithstanding a lack of such title or any other title) of each such controlling Person, to the fullest extent permitted by applicable law, from and against any and all losses, claims, damages, liabilities, costs (including, without limitation, reasonable attorneys' fees and costs of investigation and preparation) and expenses (collectively, "Losses"), as incurred, arising out of or relating to (1) any untrue or alleged untrue statement of a material fact contained in a Registration Statement, any Prospectus or any form of prospectus or in any amendment or supplement thereto or in any preliminary prospectus, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading or (2) any violation or alleged violation by the Company of the Securities Act, the Exchange Act or any state securities law, or any rule or regulation thereunder, in connection with the performance of its obligations under this Agreement, except to the extent that (i) such untrue statements or omissions are based upon information regarding such Holder furnished in writing to the Company by such Holder expressly for use therein, or to the extent that such information relates to such Holder or such Holder's proposed method of distribution of Registrable Securities and was reviewed and expressly approved in writing by such Holder expressly for use in a Registration Statement, such Prospectus or in any amendment or supplement thereto (it being understood that the Holder has approved Annex A hereto for this purpose) or (ii) in the case of an occurrence of an event of the type specified in Section 3(c)(iii)-(vi), the use by such Holder of an outdated or defective Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated or defective and prior to the receipt by such Holder of the Advice contemplated in Section 6(d). The Company shall notify the Holders promptly of the institution, threat or assertion of any Proceeding arising from or in connection with the transactions contemplated by this Agreement of which the Company is aware.

(b) Indemnification by Holders. Each Holder shall, severally and not jointly, indemnify and hold harmless the Company, each director of the Company, each officer of the Company who shall sign such Registration Statement, each underwriter, broker or other Person acting on behalf of the holders of Registrable Securities and each Person who controls any of the foregoing Persons within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, to the fullest extent permitted by applicable law, from and against all Losses, as incurred, to the extent arising out of or based solely upon: (x) such Holder's failure to comply with the prospectus delivery requirements of the Securities Act or (y) any untrue or alleged untrue statement of a material fact contained in any Registration Statement, any Prospectus, or in any amendment or supplement thereto or in any preliminary prospectus, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein not misleading (i) to the extent, but only to the extent, that such untrue statement or omission is contained in any information so furnished in writing by such Holder to the Company specifically for inclusion in such Registration Statement or such Prospectus or (ii) to the extent that such information relates to such Holder's proposed method of distribution of Registrable Securities and was reviewed and expressly approved in writing by such Holder expressly for use in a Registration Statement (it being understood that the Holder has approved Annex A hereto for this purpose), such Prospectus or in any amendment or supplement thereto or (ii) in the case of an occurrence of an event of the type specified in Section 3(c)(iii)-(vi), the use by such Holder of an outdated or defective Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated or defective and prior to the receipt by such Holder of the Advice contemplated in Section 6(d). In no event shall the liability of any selling Holder hereunder be greater in amount than the dollar amount of the net proceeds (after underwriting fees, commissions, or discounts) actually received by such Holder upon the sale of the Registrable Securities giving rise to such indemnification obligation.

(c) Conduct of Indemnification Proceedings. If any Proceeding shall be brought or asserted against any Person entitled to indemnity hereunder (an "Indemnified Party"), such Indemnified Party shall promptly notify the Person from whom indemnity is sought (the "Indemnifying Party") in writing, and the Indemnifying Party shall have the right to assume the defense thereof, including the employment of one law firm reasonably satisfactory to the Indemnified Party and the payment of all fees and expenses incurred in connection with defense thereof except as otherwise provided in this Section 5(c); provided, that, the failure of any Indemnified Party to give such notice shall not relieve the Indemnifying Party of its obligations or liabilities pursuant to this Agreement, except (and only) to the extent that it shall be finally determined by a court of competent jurisdiction (which determination is not subject to appeal or further review) that such failure shall have materially prejudiced the Indemnifying Party.

An Indemnified Party shall have the right to employ separate counsel in any such Proceeding and to participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party or Parties unless: (1) the Indemnifying Party has agreed in writing to pay such fees and expenses, (2) the Indemnifying Party shall have failed promptly to assume the defense of such Proceeding and to employ counsel reasonably satisfactory to such Indemnified Party in any such Proceeding, or (3) the named parties to any such Proceeding (including any impleaded parties) include both such Indemnified Party and the Indemnifying Party, and counsel to the Indemnified Party shall reasonably believe that a material conflict of interest is likely to exist if the same counsel were to represent such Indemnified Party and the Indemnifying Party (in which case, if such Indemnified Party notifies the Indemnifying Party in writing that it elects to employ separate counsel at the expense of the Indemnifying Party, the Indemnifying Party shall not have the right to assume the defense thereof and the reasonable fees and expenses of no more than one separate counsel shall be at the expense of the Indemnifying Party). The Indemnifying Party shall not be liable for any settlement of any such Proceeding effected without its written consent, which consent shall not be unreasonably withheld or delayed. No Indemnifying Party shall, without the prior written consent of the Indemnified Party, effect any settlement of any pending Proceeding in respect of which any Indemnified Party is a party, unless such settlement includes an unconditional release of such Indemnified Party from all liability on claims that are the subject matter of such Proceeding.

Subject to the terms of this Agreement, all reasonable fees and expenses of the Indemnified Party (including reasonable fees and expenses to the extent incurred in connection with investigating or preparing to defend such Proceeding in a manner not inconsistent with this Section) shall be paid to the Indemnified Party, as incurred, within 10 Trading Days of written notice thereof to the Indemnifying Party; provided, that, the Indemnified Party shall promptly reimburse the Indemnifying Party for that portion of such fees and expenses applicable to such actions for which such Indemnified Party is judicially determined not to be entitled to indemnification hereunder.

(d) Contribution. If the indemnification under Section 5(a) or 5(b) is unavailable to an Indemnified Party or insufficient to hold an Indemnified Party harmless for any Losses, then each Indemnifying Party shall contribute to the amount paid or payable by such Indemnified Party, in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party and Indemnified Party in connection with the actions, statements or omissions that resulted in such Losses as well as any other relevant equitable considerations. The relative fault of such Indemnifying Party and Indemnified Party shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission of a material fact, has been taken or made by, or relates to information supplied by, such Indemnifying Party or Indemnified Party, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such action, statement or omission. The amount paid or payable by a party as a result of any Losses shall be deemed to include, subject to the limitations set forth in this Agreement, any reasonable attorneys' or other fees or expenses incurred by such party in connection with any Proceeding to the extent such party would have been indemnified for such fees or expenses if the indemnification provided for in this Section was available to such party in accordance with its terms.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 5(d) were determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to in the immediately preceding paragraph. Notwithstanding the provisions of this Section 5(d), no Holder shall be required to contribute, in the aggregate, any amount in excess of the amount by which the net proceeds actually received by such Holder from the sale of the Registrable Securities subject to the Proceeding exceeds the amount of any damages that such Holder has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission.

The indemnity and contribution agreements contained in this Section are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties.

6. Miscellaneous.

(a) Remedies. In the event of a breach by the Company or by a Holder of any of their respective obligations under this Agreement, each Holder or the Company, as the case may be, in addition to being entitled to exercise all rights granted by law and under this Agreement, including recovery of damages, shall be entitled to specific performance of its rights under this Agreement. The Company and each Holder agree that monetary damages would not provide adequate compensation for any Losses incurred by reason of a breach by it of any of the provisions of this Agreement and hereby further agrees that, in the event of any action for specific performance in respect of such breach, it shall not assert or shall waive the defense that a remedy at law would be adequate.

(b) Prohibition on Filing Other Registration Statements. Neither the Company nor any of its security holders (other than the Holders in such capacity pursuant hereto) may include securities of the Company in any Registration Statements other than the Registrable Securities and shares issued in connection with the Equity Investment (as defined in the Purchase Agreement). The Company shall not file any other resale registration statements until all Registrable Securities are registered pursuant to a Registration Statement that is declared effective by the Commission, provided that this Section 6(b) shall not prohibit the Company from filing amendments to registration statements filed prior to the date of this Agreement or a Form S-8 or Form S-4. If the staff of the Commission or applicable SEC Guidance prevents the inclusion of all of the Registrable Securities requested to be included in a Registration Statement due to limitations on the use of Rule 415 under the Securities Act or other applicable rules, then the Company shall include in such Registration Statement the maximum number of Registrable Securities that may be included without exceeding such limitations. The securities to be included in such Registration Statement shall be allocated as follows: (i) First, the Company shall include all securities that are not Registrable Securities but have been previously registered on an effective registration statement of the Company as of the date of this Agreement and for which the Company is contractually obligated to include; (ii) Second, the Company shall include Registrable Securities on a pro rata basis among the Holders based on the aggregate principal amount or Stated Value of the securities purchased by each Holder under the Purchase Agreement, relative to the total aggregate principal amount or Stated Value of all securities purchased by all Holders under the Purchase Agreement; (iii) Third, any securities requested to be included by other security holders with registration rights shall be included only after the full inclusion of all Registrable Securities. In the event the Commission or SEC Guidance subsequently allows the inclusion of additional Registrable Securities, the Company shall promptly amend the Registration Statement or file a new Registration Statement to include such additional Registrable Securities that were previously cut back, on a pro rata basis as set forth above.

(c) Compliance. Each Holder covenants and agrees that it will comply with the prospectus delivery requirements of the Securities Act as applicable to it in connection with sales of Registrable Securities pursuant to a Registration Statement.

(d) Discontinued Disposition. By its acquisition of Registrable Securities, each Holder agrees that, upon receipt of a notice from the Company of the occurrence of any event of the kind described in Section 3(c)(iii) through (vi), such Holder will immediately discontinue disposition of such Registrable Securities under a Registration Statement until it is advised in writing (the "Advice") by the Company that the use of the applicable Prospectus (as it may have been supplemented or amended) may be resumed. The Company will use its best efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable.

(e) Amendments and Waivers. The provisions of this Agreement, including the provisions of this sentence, may not be amended, modified or supplemented, and waivers or consents to departures from the provisions hereof may not be given, unless the same shall be in writing and signed by the Company and the Holders of more than 50% of the Registrable Securities. If a Registration Statement does not register all of the Registrable Securities pursuant to a waiver or amendment done in compliance with the previous sentence, then the number of Registrable Securities to be registered for each Holder shall be reduced pro rata among all Holders and each Holder shall have the right to designate which of its Registrable Securities shall be omitted from such Registration Statement. Notwithstanding the foregoing, a waiver or consent to depart from the provisions hereof with respect to a matter that relates exclusively to the rights of a Holder or some Holders and that does not directly or indirectly affect the rights of other Holders may be given by such Holder or Holders of all of the Registrable Securities to which such waiver or consent relates; provided, however, that the provisions of this sentence may not be amended, modified, or supplemented except in accordance with the provisions of the first sentence of this Section 6(e).

(f) Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be delivered as set forth in the Purchase Agreement.

(g) Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of each of the parties and shall inure to the benefit of each Holder. The Company may not assign (except by merger) its rights or obligations hereunder without the prior written consent of all of the Holders of the then outstanding Registrable Securities. Each Holder may assign their respective rights hereunder in the manner and to the Persons as permitted under the Purchase Agreement.

(h) No Inconsistent Agreements. Neither the Company nor any of its Subsidiaries has entered, as of the date hereof, nor shall the Company or any of its Subsidiaries, on or after the date of this Agreement, enter into any agreement with respect to its securities, that would have the effect of impairing the rights granted to the Holders in this Agreement or otherwise conflicts with the provisions hereof. Neither the Company nor any of its Subsidiaries has previously entered into any agreement granting any registration rights with respect to any of its securities to any Person that have not been satisfied in full.

(i) Execution and Counterparts. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a “.pdf” format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or “.pdf” signature page were an original thereof.

(j) Governing Law. All questions concerning the choice of law and venue, construction, validity, enforcement and interpretation of this Agreement shall be determined in accordance with the provisions of the Purchase Agreement.

(k) Cumulative Remedies. The remedies provided herein are cumulative and not exclusive of any other remedies provided by law.

(l) Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

(m) Headings. The headings in this Agreement are for convenience only, do not constitute a part of the Agreement and shall not be deemed to limit or affect any of the provisions hereof.

(n) Independent Nature of Holders' Obligations and Rights. The obligations of each Holder hereunder are several and not joint with the obligations of any other Holder hereunder, and no Holder shall be responsible in any way for the performance of the obligations of any other Holder hereunder. Nothing contained herein or in any other agreement or document delivered at any closing, and no action taken by any Holder pursuant hereto or thereto, shall be deemed to constitute the Holders as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Holders are in any way acting in concert with respect to such obligations or the transactions contemplated by this Agreement. Each Holder shall be entitled to protect and enforce its rights, including without limitation the rights arising out of this Agreement, and it shall not be necessary for any other Holder to be joined as an additional party in any proceeding for such purpose.

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

COMPANY:

HCW BIOLOGICS INC.

By: _____

Name: Hing C. Wong, Ph.D.

Title: Chief Executive Officer

PURCHASER:

By: _____

Name: _____

Title: _____

Annex A
Plan of Distribution

Each Selling Stockholder (the “Selling Stockholders”) of the Common Stock and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their shares of Common Stock on the Trading Market or any other stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. A Selling Stockholder may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the Selling Stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The Selling Stockholders may also sell shares under Rule 144 under the Securities Act of 1933, as amended (the “Securities Act”), if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholders may arrange for other brokers or dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2121 or NASD Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with NASD IM-2440.

In connection with the sale of the Common Stock or interests therein, the Selling Stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the Common Stock in the course of hedging the positions they assume. The Selling Stockholders may also sell shares of the Common Stock short and deliver these securities to close out their short positions, or loan or pledge the Common Stock to broker-dealers that in turn may sell these securities.

The Selling Stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholders and any broker-dealers or agents that are involved in selling the shares may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the Common Stock. In no event shall any broker-dealer receive fees, commissions and markups which, in the aggregate, would exceed eight percent.

The Company is required to pay certain fees and expenses incurred by the Company incident to the registration of the shares. The Company has agreed to indemnify the Selling Stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

Because Selling Stockholders may be deemed to be “underwriters” within the meaning of the Securities Act, they will be subject to the prospectus delivery requirements of the Securities Act including Rule 172 thereunder. In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than under this prospectus. There is no underwriter or coordinating broker acting in connection with the proposed sale of the resale shares by the Selling Stockholders.

The shares will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the shares may not simultaneously engage in market making activities with respect to the Common Stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of shares of the Common Stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

Annex B

Selling Stockholder Notice and Questionnaire

The undersigned beneficial owner of common stock, par value \$0.0001 per share (including shares issuable upon exercise of Pre-Funded Warrants and Common Warrants) (the “Registrable Securities”) of HCW Biologics Inc., a Delaware corporation (the “Company”), understands that the Company has filed or intends to file with the U.S. Securities and Exchange Commission (the “Commission”) a registration statement (the “Registration Statement”) for the registration and resale under Rule 415 of the Securities Act of 1933 (the “Securities Act”), of the Registrable Securities, in accordance with the terms of the Registration Rights Agreement (the “Registration Rights Agreement”) to which this document is annexed. A copy of the Registration Rights Agreement is available from the Company upon request at the address set forth below. All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Registration Rights Agreement.

Certain legal consequences arise from being named as a selling stockholder in the Registration Statement and the related prospectus. Accordingly, holders and beneficial owners of Registrable Securities are advised to consult their own securities law counsel regarding the consequences of being named or not being named as a selling stockholder in the Registration Statement and the related prospectus.

NOTICE

The undersigned beneficial owner (the “Selling Stockholder”) of Registrable Securities hereby elects to include the Registrable Securities owned by it in the Registration Statement.

The undersigned hereby provides the following information to the Company and represents and warrants that such information is accurate:

QUESTIONNAIRE

1. Name.

(a) Full Legal Name of Selling Stockholder:

(b) Full Legal Name of Registered Holder (if not the same as (a) above) through which Registrable Securities are held:

(c) Full Legal Name of Natural Control Person (which means a natural person who directly or indirectly alone or with others has power to vote or dispose of the securities covered by this Questionnaire):

2. Address for Notices to Selling Stockholder:

Telephone: _____
Fax: _____
Contact Person: _____

3. Broker-Dealer Status:

(a) Are you a broker-dealer?

☐ Yes ☐ No

(b) If “yes” to Section 3(a), did you receive your Registrable Securities as compensation for investment banking services to the Company?

☐ Yes ☐ No

***Note:** If “no” to Section 3(b), the Commission’s staff has indicated that you should be identified as an underwriter in the Registration Statement.*

(c) Are you an affiliate of a broker-dealer?

☐ Yes ☐ No

(d) If you are an affiliate of a broker-dealer, do you certify that you purchased the Registrable Securities in the ordinary course of business, and at the time of the purchase of the Registrable Securities to be resold, you had no agreements or understandings, directly or indirectly, with any person to distribute the Registrable Securities?

☐ Yes ☐ No

***Note:** If “no” to Section 3(d), the Commission’s staff has indicated that you should be identified as an underwriter in the Registration Statement.*

4. Beneficial Ownership of Securities of the Company Owned by the Selling Stockholder.

Except as set forth below in this Item 4, the undersigned is not the beneficial or registered owner of any securities of the Company other than the securities issuable pursuant to the Purchase Agreement.

(a) Type and amount of other securities beneficially owned by the Selling Stockholder:

5. Relationships with the Company:

Except as set forth below, neither the undersigned nor any of its affiliates, officers, directors or principal equity holders (owners of 5% or more of the equity securities of the undersigned) has held any position or office or has had any other material relationship with the Company (or its predecessors or affiliates) during the past three years.

State any exceptions here:

The undersigned agrees to promptly notify the Company of any inaccuracies or changes in the information provided herein that may occur subsequent to the date hereof at any time while the Registration Statement remains effective.

By signing below, the undersigned consents to the disclosure of the information contained herein in its answers to Items 1 through 5 and the inclusion of such information in the Registration Statement and the related prospectus and any amendments or supplements thereto. The undersigned understands that such information will be relied upon by the Company in connection with the preparation or amendment of the Registration Statement and the related prospectus.

IN WITNESS WHEREOF the undersigned, by authority duly given, has caused this Notice and Questionnaire to be executed and delivered either in person or by its duly authorized agent.
Dated: _____

Beneficial Owner:

By: _____
Name:
Title:

TO:

EXHIBIT A

Name and Address of Purchaser	Amount of Securities to be Purchased	Shares of Common Stock and/or Pre-Funded Warrants



HCW Biologics Inc. Announces Pricing of \$1.6 Million Private Placement Offering

MIRAMAR, Fla., July 29, 2026 (GLOBE NEWSWIRE) — HCW Biologics Inc. (the “Company” or “HCW Biologics”), (NASDAQ: HCWB), a clinical-stage biopharmaceutical company developing transformative fusion immunotherapeutics to treat autoimmune diseases, cancer and senescence-associated dysplasia, today announced the pricing of its \$1.6 million private placement offering (the “Offering”) with a group of investors, including officers, directors and an existing stockholder of the Company, (each, an “Investor” and collectively, the “Investors”). Pursuant to a securities purchase agreement entered into with the Investors (the “Purchase Agreement”), the Company agreed to issue and sell an aggregate of 618,682 units (the “Units”), with each Unit consisting of (i) one share of the Company’s common stock, par value \$0.0001 per share (“Common Stock”), or, in lieu thereof, one pre-funded warrant to purchase one share of Common Stock (a “Pre-Funded Warrant”), and (ii) the right to receive one common stock purchase warrant (a “Common Warrant”) to purchase one share of Common Stock upon, and subject to, stockholder approval of the issuance thereof.

In connection with the Offering, the Company will issue 218,682 shares of Common Stock and 400,000 Pre-Funded Warrants. Subject to stockholder approval, which the Company is obligated to seek pursuant to the terms of the Purchase Agreement, the Investors will also be entitled to receive Common Warrants to purchase up to an aggregate of 618,682 shares of Common Stock.

Hing C. Wong, Ph.D., the Company’s Founder and Chief Executive Officer, Scott Garrett, a member and the Chairman of the Company’s Board of Directors, and Lee Flowers, the Company’s Senior Vice President of Business Development, participated in the Offering on the same terms and conditions as the other Investor. The closing of the Offering is expected to occur on or about July 29, 2026, subject to the satisfaction of customary closing conditions.

The combined purchase price for each Unit consisting of one share of Common Stock and the right to receive one Common Warrant upon, and subject to, stockholder approval of the issuance thereof, was \$2.585 per Unit. The combined purchase price for a Pre-Funded Warrant and the right to receive one Common Warrant upon, and subject to, stockholder approval of the issuance thereof, was \$2.5849 per Unit. The Pre-Funded Warrants have an exercise price of \$0.0001 per share of Common Stock, are exercisable immediately and will not expire until exercised in full. The Common Warrants will have an exercise price of \$2.585 per share and will expire on the five and one half (5.5) year anniversary of their issuance. Under Nasdaq Listing Rule 5635(d), the Company is required to obtain stockholder approval before issuing the Common Warrants because the potential issuance of shares upon exercise of the Common Warrants could exceed the thresholds set forth in such rule. Following receipt of stockholder approval, the Company will issue the Common Warrants to the Investors in accordance with the Purchase Agreement.

The Company intends to use the net proceeds from this Offering to continue clinical trials for HCW9302, advance its IND-enabling studies for its T-Cell Engager, HCW11-018b, and its second-generation immune checkpoint inhibitor, HCW11-040, and for general corporate purposes.

On July 29, 2026, the Company also entered into a registration rights agreement with the Investors, pursuant to which the Company agreed to submit to the U.S. Securities and Exchange Commission (the “SEC”) a registration statement on Form S-1 within 15 trading days of the closing of the Offering covering the resale of the shares of Common Stock sold in the Offering, the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants and the shares of Common Stock issuable upon exercise of the Common Warrants. The Company also agreed to use commercially reasonable efforts to cause the registration statement to be declared effective by the SEC within 60 days following the closing of the Offering.

The number of shares of Common Stock the Company that may be held by an Investor, including those shares issued at closing and upon the exercise of Pre-Funded Warrants from time to time in the Offering, may not exceed 9.99% of the number of shares of the Company’s Common Stock outstanding immediately after giving effect to such issuances.

This press release shall not constitute an offer to sell or a solicitation of an offer to buy any of the securities described herein, nor shall there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such state or other jurisdiction.

About HCW Biologics:

HCW Biologics Inc. (the “Company”) (NASDAQ: HCWB) is a clinical-stage biopharmaceutical company developing transformative fusion immunotherapeutics to treat diseases promoted by chronic inflammation, including autoimmune diseases, cancer, and senescence-associated dysplasia. The Company’s immunotherapeutics represent a new class of drugs that it believes have the potential to fundamentally change the treatment of proinflammatory and senescence-associated diseases and conditions that are promoted by chronic inflammation —and in doing so, improve patients’ quality of life and possibly extend longevity. A key aspect of the Company’s clinical development and financing strategy is to focus on its business development programs. See the Company Pipeline at <https://hcwbiologics.com/pipeline/>

Forward Looking Statements:

Statements in this press release contain “forward-looking statements” that are subject to substantial risks and uncertainties. These statements are made under the “safe harbor” provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements contained in this press release may be identified by the use of words such as “anticipate,” “expect,” “believe,” “will,” “may,” “should,” “estimate,” “project,” “outlook,” “forecast” or other similar words and include, without limitation, statements regarding the completion of the Offering and the satisfaction of customary closing conditions; the anticipated use of proceeds from the Offering; the Company’s ability to obtain stockholder approval for the issuance of the Common Warrants; the anticipated issuance of the Common Warrants following receipt of stockholder approval; the anticipated filing and effectiveness of registration statements covering the shares of Common Stock issued in the Offering; and the prospective efficacy and success of the Company’s immunotherapeutic candidates and development programs. Further, certain forward-looking statements are based on assumptions as to future events that may not prove to be accurate. Factors that could cause actual results to differ include, but are not limited to, the risks and uncertainties that are described in the section titled “Risk Factors” in the annual report on Form 10-K filed with the SEC on March 31, 2026, and in other filings filed from time to time with the SEC.

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