

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(D)
of the Securities Exchange Act of 1934

Date of report (Date of earliest event reported): April 10, 2024

Leap Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-37990
(Commission
File Number)

27-4412575
(IRS Employer
Identification No.)

47 Thorndike Street, Suite B1-1
Cambridge, MA
(Address of principal executive offices)

02141
(Zip Code)

Registrant's telephone number, including area code: (617) 714-0360

N/A
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K 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 \$0.001	LPTX	Nasdaq Capital Market

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.

Securities Purchase Agreement

On April 10, 2024, Leap Therapeutics, Inc. (the “Company”) entered into a Securities Purchase Agreement (the “Securities Purchase Agreement”) with certain institutional investors (collectively, the “Purchasers,” and each, a “Purchaser”) providing for a private placement exempt from the registration requirements of the Securities Act of 1933, as amended (the “Securities Act”), pursuant to which the Company expects to issue and sell to the Purchasers an aggregate of (a) 12,660,993 shares (the “Shares”) of the Company’s common stock, par value \$0.001 per share (the “Common Stock”), at a purchase price per Share equal to \$2.82, and (b) pre-funded warrants, in the form attached to the Securities Purchase Agreement as Exhibit B (the “Pre-Funded Warrants”), to purchase 1,523,404 shares of Common Stock (such shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, the “Warrant Shares”), at a purchase price per Pre-Funded Warrant equal to (i) \$2.819 (which is equal to the price per share for the Shares less the \$0.001 exercise price per Warrant Share) multiplied by (ii) the number of Pre-Funded Warrant Shares underlying such Pre-Funded Warrant, for aggregate gross proceeds to the Company of approximately \$40 million (the “Transaction”). The Transaction is expected to close on April 15, 2024, subject to satisfaction of customary closing conditions.

The Company intends to use the net proceeds from the Transaction to fund the continued development of its lead monoclonal antibody program, DKN-01, by expanding the randomized controlled Part B of the DeFianCe Study in patients with second-line colorectal cancer from 130 to 180 patients, by enabling data to mature in the randomized controlled Part C of the DisTinGuish study in patients with first-line gastric cancer, and by manufacturing clinical trial material to permit Phase 3 readiness, and for working capital and general corporate purposes.

The Pre-Funded Warrants are exercisable at any time after the date of issuance. In addition, the Pre-Funded Warrants contain a “blocker” provision providing that a holder (together with its affiliates) may not exercise any portion of a Pre-Funded Warrant to the extent that the holder (together with its affiliates) would beneficially own more than 4.99% of the shares of Common Stock of the Company outstanding immediately after giving effect to such exercise. A holder of Pre-Funded Warrants may increase or decrease this percentage not in excess of 19.99% by providing at least 61 days’ prior notice to the Company.

The Securities Purchase Agreement contains customary agreements, covenants, representations and warranties of the Company and the Purchasers, and customary indemnification rights and obligations of the parties.

The Shares, the Pre-Funded Warrants, and the Warrant Shares issuable upon the exercise of the Pre-Funded Warrants have not been registered under the Securities Act and were offered pursuant to the exemption from registration provided in Section 4(a)(2) under the Securities Act.

Pursuant to the Securities Purchase Agreement, the Company granted to the Purchasers certain registration rights, pursuant to which, among other things, the Company will (a) file with the Securities and Exchange Commission (the “SEC”) a registration statement on Form S-3 to register for resale the Shares and the Warrant Shares issuable upon exercise of the Pre-Funded Warrants, as soon as practicable, but in no event later than 30 calendar days following the closing, and (b) use its commercially reasonable efforts to have the registration statement declared effective as soon as practicable, and in any event no later than 90 days following the closing date (or 120 days following the closing date if the registration statement is reviewed by the SEC). The registration rights covenants are subject to customary terms and conditions for a transaction of this type, including certain customary cash penalties on the Company for its failure to satisfy specified filing and effectiveness time periods.

The foregoing description of the material terms of the Securities Purchase Agreement and the Pre-Funded Warrants is not complete and is qualified in its entirety by reference to the full text of the Securities Purchase Agreement and the form of Pre-Funded Warrant, which are filed as Exhibits 10.1 and 4.1, respectively, to this Current Report on Form 8-K and are incorporated herein by reference.

The representations, warranties and covenants contained in the Securities Purchase Agreement were made solely for the benefit of the parties to the Securities Purchase Agreement and may be subject to limitations agreed upon by the contracting parties. Accordingly, the Securities Purchase Agreement is incorporated herein by reference only to provide investors with information regarding the terms of the Securities Purchase Agreement and not to provide investors with any other factual information regarding the Company or its business, and should be read in conjunction with the disclosures in the Company’s periodic reports and other filings with the SEC.

Item 3.02. Unregistered Sales of Equity Securities.

The information contained in Item 1.01 of this Current Report on Form 8-K related to the Shares, the Pre-Funded Warrants, and the Warrant Shares issuable upon the exercise of the Pre-Funded Warrants is incorporated herein by reference.

Item 8.01. Other Events.

On April 11, 2024, the Company issued a press release announcing the Transaction. A copy of the press release is filed as Exhibit 99.1 hereto, and is incorporated herein by reference.

On April 11, 2024, the Company posted an updated corporate presentation on its website, www.leaptx.com. A copy of the corporate presentation is filed as Exhibit 99.2 hereto, and is incorporated herein by reference. The information contained on, or that can be accessed from, the Company's website is not incorporated into, and does not constitute a part of, this Current Report on Form 8-K.

Cautions About Forward-Looking Statements

This Current Report on Form 8-K contains forward looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, and that involve risks and uncertainties, including statements regarding the expected gross proceeds from the Transaction, the expected use of proceeds from the Transaction, the expected timing of the closing of the Transaction, the prospect that the Pre-Funded Warrants will be exercised, and other statements identified by words such as "could," "expects," "intends," "may," "plans," "potential," "should," "will," "would," or similar expressions and the negatives of those terms. Forward-looking statements are not promises or guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, and which could cause actual results to differ materially from those contemplated in such forward-looking statements, including, but not limited to, the risks as may be detailed from time to time in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q and other reports we file with the SEC. Our actual results could differ materially from the results described in or implied by such forward-looking statements. Forward-looking statements speak only as of the date hereof, and, except as required by law, we undertake no obligation to update or revise these forward-looking statements.

Item 9.01. Financial Statements and Exhibits.**(d) Exhibits.**

Exhibit Number	Description
4.1	Form of Pre-Funded Warrant
10.1	Form of Securities Purchase Agreement by and among the Company and the purchasers named therein
99.1	Press Release dated April 11, 2024
99.2	Corporate Presentation
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.

LEAP THERAPEUTICS, INC.

Dated: April 11, 2024

By: /s/ Douglas E. Onsi
Name: Douglas E. Onsi
Title: Chief Executive Officer and President

LEAP THERAPEUTICS, INC.

FORM OF PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK

Number of Shares: [●]
(subject to adjustment)Warrant No. [●]
Original Issue Date: April [●], 2024

Leap Therapeutics, Inc., a Delaware corporation (the “Company”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [●] or its permitted registered assigns (the “Holder”), is entitled, subject to the terms set forth below, to purchase from the Company up to a total of [●] shares of common stock, \$0.001 par value per share (the “Common Stock”), of the Company (each such share, a “Warrant Share” and all such shares, the “Warrant Shares”), at an exercise price per share equal to \$0.001 per share (as adjusted from time to time as provided in Section 9 herein, the “Exercise Price”), upon surrender of this *Pre-Funded Warrant to Purchase Common Stock* (including any *Pre-Funded Warrants to Purchase Common Stock* issued in exchange, transfer or replacement hereof, the “Warrant”) at any time and from time to time on or after the date hereof (the “Original Issue Date”), subject to the following terms and conditions:

1. **Definitions.** For purposes of this Warrant, the following terms shall have the following meanings:

(a) “**Affiliate**” means any Person directly or indirectly controlled by, controlling or under common control with, a Holder, but only for so long as such control shall continue. For purposes of this definition, “**control**” (including, with correlative meanings, “controlled by”, “controlling” and “under common control with”) means, with respect to a Person, possession, direct or indirect, of (a) the power to direct or cause direction of the management and policies of such Person (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise), or (b) voting securities or other comparable equity interests of such Person that represent at least 50% of the voting power of all outstanding voting securities of the Company.

(b) “**Commission**” means the United States Securities and Exchange Commission.

(c) “**Closing Sale Price**” means, for any security as of any date, the last trade price for such security on the Principal Trading Market for such security, as reported by Bloomberg Financial Markets, or, if such Principal Trading Market begins to operate on an extended hours basis and does not designate the last trade price, then the last trade price of such security prior to 4:00 P.M., New York City time, as reported by Bloomberg Financial Markets, or if the foregoing do not apply, the last trade price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg Financial Markets, or, if no last trade price is reported for such security by Bloomberg Financial Markets, the average of the bid and ask prices, of any market makers for such security as reported in the “pink sheets” by Pink Sheets LLC. If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then the Board of Directors of the Company shall use its good faith judgment to determine the fair market value. The Board of Directors’ determination shall be binding upon all parties absent demonstrable error. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

(d) **“Principal Trading Market”** means the national securities exchange or other trading market on which the Common Stock is primarily listed on and quoted for trading, which, as of the Original Issue Date, shall be the Nasdaq Capital Market.

(e) **“Securities Act”** means the Securities Act of 1933, as amended.

(f) **“Trading Day”** means any weekday on which the Principal Trading Market is open for trading.

(g) **“Transfer Agent”** means Continental Stock Transfer & Trust Company, the Company’s transfer agent and registrar for the Common Stock, and any successor appointed in such capacity.

2. **Issuance of Securities; Registration of Warrant.** The Company shall register ownership of this Warrant, upon records to be maintained by the Company for that purpose (the **“Warrant Register”**), in the name of the record Holder (which shall include the initial Holder or, as the case may be, any assignee to which this Warrant is assigned hereunder) 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.

3. **Registration of Transfers.** Subject to compliance with all applicable securities laws, the Company shall, or will cause its Transfer Agent to, register the transfer of all or any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, and payment of all applicable transfer taxes (if any). Upon any such registration or transfer, a new warrant to purchase Common Stock in substantially the form of this Warrant (any such new warrant, a **“New Warrant”**) evidencing the portion of this Warrant so transferred shall be issued to the transferee, and a New Warrant evidencing the remaining portion of this Warrant not so transferred, if any, shall be issued to the transferring Holder. The acceptance of the New Warrant by the transferee thereof shall be deemed the acceptance by such transferee of all of the rights and obligations in respect of the New Warrant that the Holder has in respect of this Warrant. The Company shall, or will cause its Transfer Agent to, prepare, issue and deliver at the Company’s own expense any New Warrant under this **Section 3**. Until due presentment for registration of transfer, the Company may treat the registered Holder hereof as the owner and holder for all purposes, and the Company shall not be affected by any notice to the contrary.

4. Exercise and Duration of Warrant.

(a) All or any part of this Warrant shall be exercisable by the registered Holder in any manner permitted by this Warrant at any time and from time to time on or after the Original Issue Date.

(b) The Holder may exercise this Warrant by delivering (as determined in accordance with the notice provisions hereof) to the Company an exercise notice, in the form attached as Schedule 1 hereto (the "Exercise Notice"), completed and duly signed. Within one (1) Trading Day following the date of delivery of the Exercise Notice, the Holder shall make payment of the Exercise Price for the number of Warrant Shares as to which this Warrant is being exercised (which may take the form of a "cashless exercise" if so indicated in the Exercise Notice pursuant to Section 10 below). The date on which the Exercise Notice is delivered to the Company (as determined in accordance with the notice provisions hereof) is an "Exercise Date"; provided, that if the Exercise Price is not delivered on or before one (1) Trading Day following the date of delivery of the Exercise Notice, the Exercise Date shall be deemed to be one (1) Trading Day following the date that the Exercise Price is delivered to the Company. No ink-original Exercise Notice shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Exercise Notice be required. The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder. Execution and delivery of the Exercise Notice shall have the same effect as cancellation of the original Warrant and issuance of a New Warrant evidencing the right to purchase the remaining number of Warrant Shares, if any. The aggregate exercise price of this Warrant, except for the Exercise Price, was pre-funded to the Company on or before the Original Issue Date, and consequently no additional consideration (other than the Exercise Price) shall be required by to be paid by the Holder 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-funded exercise price under any circumstance or for any reason whatsoever.

5. Delivery of Warrant Shares.

(a) Upon exercise of this Warrant, the Company shall promptly (but in no event later than two (2) Trading Days after the Exercise Date), upon the request of the Holder, credit such aggregate number of shares of Common Stock to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with The Depository Trust Company ("DTC") through its Deposit / Withdrawal At Custodian system, or if the Transfer Agent is not participating in the Fast Automated Securities Transfer Program (the "FAST Program"), or if the certificates (or notices of book-entry ownership registration) are required to bear a legend regarding restriction on transferability, issue and dispatch by overnight courier to the address as specified in the Exercise Notice, either a certificate, registered in the Company's share register in the name of the Holder or its designee, or a notice that evidences the book-entry registration in the Company's share ledger of the Holder as record holder, for the number of shares of Common Stock to which the Holder is entitled pursuant to such exercise. The Holder, or any natural person or legal entity (each, a "Person") so designated by the Holder to receive Warrant Shares, shall be deemed to have become the holder of record of such Warrant Shares as of the time of delivery of the Exercise Notice on the Exercise Date or, if later, the time of delivery of the Exercise Price, in either case irrespective of the date such Warrant Shares are credited to the Holder's DTC account or the date of delivery of the certificates (or notices of book-entry ownership registration) evidencing such Warrant Shares, as the case may be. While this Warrant remains outstanding, the Company shall maintain a transfer agent that participates in the FAST Program.

(b) If this Warrant is properly exercised in accordance with the provisions of Section 4(b) and by the close of the second (2nd) Trading Day after the Exercise Date, the Company fails to deliver to the Holder a certificate (or a notice of book-entry ownership registration) representing the required number of Warrant Shares in the manner required pursuant to Section 5(a) or fails to credit the Holder's balance account with DTC for such number of Warrant Shares to which the Holder is entitled, and if after such second (2nd) Trading Day and prior to the receipt of such Warrant Shares, the Holder purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall, within two (2) Trading Days after the Holder's request and in the Holder's sole and absolute discretion, either (1) pay in cash to the Holder an amount equal to the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased, at which point the Company's obligation to deliver such certificate or notice of book-entry ownership registration (and to issue such Warrant Shares) shall terminate or (2) promptly honor its obligation to deliver, or cause to be delivered, to the Holder a certificate or certificates or a notice or notices of book-entry ownership registration representing such Warrant Shares (or to credit, or cause to be credited, the Holder's balance account with DTC for such Warrant Shares) and pay cash to the Holder in an amount equal to the excess (if any) of Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased in the Buy-In over the product of (A) the number of shares of Common Stock purchased in the Buy-In, times (B) the Closing Sale Price of a share of Common Stock on the Exercise Date.

(c) To the extent permitted by law and subject to Section 5(b), the Company's obligations to issue and deliver Warrant Shares in accordance with and subject to the terms hereof (including the limitations set forth in Section 11 below) are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Holder or any other Person of any obligation to the Company or any violation or alleged violation of law by the Holder or any other Person, and irrespective of any other circumstance that might otherwise limit such obligation of the Company to the Holder in connection with the issuance of Warrant Shares. Subject to Section 5(b), nothing herein shall limit the Holder's right to pursue any other remedies available to it hereunder, at law or in equity including a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver certificates representing shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

6. Charges, Taxes and Expenses. Issuance and delivery of certificates for shares of Common Stock upon exercise of this Warrant shall be made without charge to the Holder for any issue or transfer tax, transfer agent fee or other incidental tax or expense (excluding any applicable stamp duties) in respect of the issuance of such certificates, all of which taxes and expenses shall be paid by the Company; *provided, however*, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of any Warrant Shares, any certificates therefor or the Warrant (or any portion thereof) in a name other than that of the Holder thereof. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. Replacement of Warrant. If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction (in such case) and, in each case, a customary and reasonable indemnity (but not the posting of any surety or other bond), if requested by the Company. Applicants for a New Warrant under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third party costs as the Company may prescribe. If a New Warrant is requested as a result of a mutilation of this Warrant, then the Holder shall deliver such mutilated Warrant to the Company as a condition precedent to the Company's obligation to issue the New Warrant.

8. Reservation of Warrant Shares. The Company covenants that it will, at all times while this Warrant is outstanding, reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares that are initially issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other contingent purchase rights of persons other than the Holder (taking into account the adjustments and restrictions of Section 9). The Company covenants that all Warrant Shares so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and non-assessable. The Company will take all such action as may be reasonably necessary to assure that such shares of Common Stock may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of any securities exchange or automated quotation system upon which the Common Stock may be listed. The Company further covenants that it will not, without the prior written consent of the Holder, take any actions to increase the par value of the Common Stock at any time while this Warrant is outstanding.

9. Certain Adjustments. The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant are subject to adjustment from time to time as set forth in this Section 9.

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock issued and outstanding on the Original Issue Date and in accordance with the terms of such stock on the Original Issue Date or as amended, that is payable in shares of Common Stock, (ii) subdivides its outstanding shares of Common Stock into a larger number of shares of Common Stock, (iii) combines its outstanding shares of Common Stock into a smaller number of shares of Common Stock or (iv) issues by reclassification of shares of capital stock any additional shares of Common Stock of the Company, then in each such case the Exercise Price shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately before such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, provided, however, that if such record date shall have been fixed and such dividend is not fully paid on the date fixed therefor, the Exercise Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Exercise Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends. Any adjustment pursuant to clause (ii), (iii) or (iv) of this paragraph shall become effective immediately after the effective date of such subdivision, combination or reclassification.

(b) **Pro Rata Distributions.** If the Company, at any time while this Warrant is outstanding, distributes to all holders of Common Stock for no consideration (i) evidences of its indebtedness, (ii) any security (other than a distribution of Common Stock covered by the preceding paragraph) or (iii) rights or warrants to subscribe for or purchase any security, or (iv) cash or any other asset (in each case, "**Distributed Property**"), then, upon any exercise of this Warrant that occurs after the record date fixed for determination of stockholders entitled to receive such distribution, the Holder shall be entitled to receive, in addition to the Warrant Shares otherwise issuable upon such exercise (if applicable), the Distributed Property that such Holder would have been entitled to receive in respect of such number of Warrant Shares had the Holder been the record holder of such Warrant Shares immediately prior to such record date without regard to any limitation on exercise contained therein. The Company covenants that it will, at all times while this Warrant is outstanding, reserve and keep available all Distributed Property that the Holder shall be entitled to receive hereunder, solely for the purpose of fulfilling its obligations pursuant to this Section 9(b).

(c) **Fundamental Transactions.** If, at any time while this Warrant is outstanding, (i) the Company effects any merger or consolidation of the Company with or into another Person, in which the Company is not the surviving entity and in which the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting power of the surviving entity immediately after such merger or consolidation, (ii) the Company effects any sale to another Person of all or substantially all of its assets in one transaction or a series of related transactions, (iii) pursuant to any tender offer or exchange offer (whether by the Company or another Person), holders of capital stock tender shares representing more than 50% of the voting power of the capital stock of the Company and the Company or such other Person, as applicable, accepts such tender for payment, (iv) the Company consummates a stock purchase agreement or other business combination (including a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than the 50% of the voting power of the capital stock of the Company (except for any such transaction in which the stockholders of the Company immediately prior to such transaction maintain, in substantially the same proportions, the voting power of such Person immediately after the transaction) or (v) the Company effects any reclassification 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 (other than as a result of a subdivision or combination of shares of Common Stock covered by Section 9(a) above) (in any such case, a "**Fundamental Transaction**"), then following such Fundamental Transaction the Holder shall have the right to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant without regard to any limitations on exercise contained herein (the "**Alternate Consideration**"). The Company shall not effect any Fundamental Transaction in which the Company is not the surviving entity or the Alternate Consideration includes securities of another Person unless (i) the Alternate Consideration is solely cash and the Company provides for the simultaneous "cashless exercise" of this Warrant pursuant to Section 10 below or (ii) prior to or simultaneously with the consummation thereof, any successor to the Company, surviving entity or other Person (including any purchaser of assets of the Company) shall assume the obligation to deliver to the Holder such Alternate Consideration as, in accordance with the foregoing provisions, the Holder may be entitled to receive, and the other obligations under this Warrant. The provisions of this paragraph (c) shall similarly apply to subsequent transactions analogous of a Fundamental Transaction type.

(d) Number of Warrant Shares. Simultaneously with any adjustment to the Exercise Price pursuant to paragraph (a) of this Section 9, the number of Warrant Shares that may be purchased upon exercise of this Warrant shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the increased or decreased number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment.

(e) Calculations. All calculations under this Section 9 shall be made to the nearest one-tenth of one cent or the nearest share, as applicable.

(f) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 9, the Company at its expense will, at the written request of the Holder, promptly compute such adjustment, in good faith, in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment, including a statement of the adjusted Exercise Price and adjusted number or type of Warrant Shares or other securities issuable upon exercise of this Warrant (as applicable), describing the transactions giving rise to such adjustments and showing in detail the facts upon which such adjustment is based. Upon written request, the Company will promptly deliver a copy of each such certificate to the Holder and to the Company's transfer agent.

(g) Notice of Corporate Events. If, while this Warrant is outstanding, the Company (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including any granting of rights or warrants to subscribe for or purchase any capital stock of the Company or any subsidiary, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Company, then, except if such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall deliver to the Holder a notice of such transaction at least ten (10) days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction; *provided, however*, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice. In the event such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall (on the same time frame set forth in the immediately prior sentence) offer the Holder the ability to sign a confidentiality agreement related thereto sufficient to allow the Holder to receive such notice, and the Company shall deliver such notice immediately upon execution of such confidentiality agreement. In addition, if while this Warrant is outstanding, the Company authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction contemplated by Section 9(c), other than a Fundamental Transaction under clause (iii) of Section 9(c), the Company shall deliver to the Holder a notice of such Fundamental Transaction at least thirty (30) days prior to the date such Fundamental Transaction is consummated. Holder agrees to maintain any information disclosed pursuant to this Section 9(g) in confidence until such information is publicly available, and shall comply with applicable law with respect to trading in the Company's securities following receipt any such information.

10. Payment of Exercise Price. Notwithstanding anything contained herein to the contrary, the Holder may, in its sole discretion, satisfy its obligation to pay the Exercise Price through a “cashless exercise”, in which event the Company shall issue to the Holder the number of Warrant Shares determined as follows:

$$X = Y [(A-B)/A]$$

where:

“X” equals the number of Warrant Shares to be issued to the Holder;

“Y” equals the total number of Warrant Shares with respect to which this Warrant is then being exercised;

“A” equals (i) the last Closing Sale Price of the shares of Common Stock (as reported by Bloomberg Financial Markets) on the Trading Day immediately preceding the Exercise Date if the Exercise Notice is delivered prior to market close on the Exercise Date, or (ii) the last Closing Sale Price of the shares of Common Stock (as reported by Bloomberg Financial Markets) on the Exercise Date if the Exercise Notice is delivered following market close on the Exercise Date; and

“B” equals the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

For purposes of Rule 144 promulgated under the Securities Act, it is intended, understood and acknowledged that the Warrant Shares issued in a “cashless exercise” transaction shall be deemed to have been acquired by the Holder, the Warrant Shares shall take on the registered characteristics of the Warrant being exercised, and the holding period for the Warrant Shares shall be deemed to have commenced, on the date this Warrant was originally issued (provided that the Commission continues to take the position that such treatment is proper at the time of such exercise). In the event that a registration statement registering the issuance of Warrant Shares is, for any reason, not effective at the time of exercise of this Warrant, then the Warrant may only be exercised through a cashless exercise, as set forth in this Section 10. Except as set forth in Section 5(b) (Buy-In remedy), Section 9(b) (Pro Rata Distributions), Section 9(c) (Fundamental Transactions) and Section 12 (payment of cash in lieu of fractional shares), in no event will the exercise of this Warrant be settled in cash.

11. Limitations on Exercise

(a) Notwithstanding anything to the contrary contained herein, the Company shall not effect any exercise of this Warrant, and the Holder shall not be entitled to exercise this Warrant for a number of Warrant Shares in excess of that number of Warrant Shares which, upon giving effect or immediately prior to such exercise, would cause (i) the aggregate number of shares of Common Stock beneficially owned by the Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act, to exceed 4.99% (the "**Maximum Percentage**") of the total number of issued and outstanding shares of Common Stock of the Company following such exercise, or (ii) the combined voting power of the securities of the Company beneficially owned by the Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act to exceed 4.99% of the combined voting power of all of the securities of the Company then outstanding following such exercise. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company's most recent Form 10-Q or Form 10-K, as the case may be, filed with the Commission prior to the date hereof, (y) a more recent public announcement by the Company or (z) any other notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written request of the Holder, the Company shall within three (3) Trading Days confirm in writing or by electronic mail 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 since the date as of which such number of outstanding shares of Common Stock was reported. By written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 19.99% specified in such notice; provided that any such increase will not be effective until the sixty-first (61st) day after such notice is delivered to the Company. For purposes of this Section 11(a), the aggregate number of shares of Common Stock or voting securities beneficially owned by the Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act shall include the shares of Common Stock issuable upon the 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 (x) exercise of the remaining unexercised and non-cancelled portion of this Warrant by the Holder and (y) exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the Company that do not have voting power (including any securities of the Company which would entitle the holder thereof to acquire at any time Common Stock, including 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), is subject to a limitation on conversion or exercise analogous to the limitation contained herein and is beneficially owned by the Holder or any of its Affiliates and other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act.

(b) This Section 11 shall not restrict the number of shares of Common Stock which a Holder may receive or beneficially own in order to determine the amount of securities or other consideration that such Holder may receive in the event of a Fundamental Transaction as contemplated in Section 9(c) of this Warrant.

12. No Fractional Shares. No fractional Warrant Shares will be issued in connection with any exercise of this Warrant. In lieu of any fractional shares that would otherwise be issuable, the number of Warrant Shares to be issued shall be rounded down to the next whole number and the Company shall pay the Holder in cash the fair market value (based on the Closing Sale Price) for any such fractional shares.

13. Notices. Any and all notices or other communications or deliveries hereunder (including any Exercise Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via facsimile or e-mail at the facsimile number or e-mail address specified in the books and records of the Transfer Agent prior to 5:30 P.M., New York City time, on a Trading Day so long as the sender of an e-mail has not received an automated notice of delivery failure from the proposed recipient's computer server, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile or e-mail at the facsimile number or e-mail address specified in the books and records of the Transfer Agent on a day that is not a Trading Day or later than 5:30 P.M., New York City time, on any Trading Day so long as the sender of an e-mail has not received an automated notice of delivery failure from the proposed recipient's computer server, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, or (iv) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery. To the extent that any notice provided hereunder constitutes, or contains, material non-public information regarding the Company or any subsidiaries, the Company, subject to the provisions of Section 9(g), if and to the extent applicable, shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

14. Warrant Agent. The Company shall initially serve as warrant agent under this Warrant. Upon thirty (30) days' notice to the Holder, the Company may appoint a new warrant agent. Any corporation into which the Company or any new warrant agent may be merged or any corporation resulting from any consolidation to which the Company or any new warrant agent shall be a party or any corporation to which the Company or any new warrant agent transfers substantially all of its corporate trust or shareholders services business shall be a successor warrant agent under this Warrant without any further act. Any such successor warrant agent shall promptly cause notice of its succession as warrant agent to be mailed (by first class mail, postage prepaid) to the Holder at the Holder's last address as shown on the Warrant Register. Notwithstanding anything to the contrary contained herein or in any warrant agency agreement that the Company may enter into in the future, the Holder shall be entitled to elect to receive, or continue to hold, this Warrant in certificated form, in which case the terms set forth in any such warrant agency agreement shall not apply to this Warrant.

15. Miscellaneous.

(a) No Rights as a Stockholder. The Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, amalgamation, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

(b) Authorized Shares.

(i) Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including amending its certificate or articles 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 (a) 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, (b) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable Warrant Shares upon the exercise of this Warrant, and (c) 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.

(ii) 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.

(c) Successors and Assigns. Subject to the restrictions on transfer set forth in this Warrant and compliance with applicable securities laws, this Warrant may be assigned by the Holder. This Warrant may not be assigned by the Company without the written consent of the Holder, except to a successor in the event of a Fundamental Transaction. This Warrant shall be binding on and inure to the benefit of the Company and the Holder and their respective successors and assigns. Subject to the preceding sentence, nothing in this Warrant shall be construed to give to any Person other than the Company and the Holder any legal or equitable right, remedy or cause of action under this Warrant. This Warrant may be amended only in writing signed by the Company and the Holder, or their successors and assigns.

(d) Amendment and Waiver. Except as otherwise provided herein, the provisions of the Warrant and the New Warrants, if any, may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of those registered holders of the Warrant and/or the New Warrants, if any, representing no less than a majority of the Warrant Shares obtainable upon exercise of the Warrant and the New Warrants then outstanding.

(e) Acceptance. Receipt of this Warrant by the Holder shall constitute acceptance of and agreement to all of the terms and conditions contained herein.

(f) Governing Law; Jurisdiction. ALL QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY, ENFORCEMENT AND INTERPRETATION OF THIS WARRANT SHALL BE GOVERNED BY AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAW THEREOF. EACH OF THE COMPANY AND THE HOLDER 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. EACH OF THE COMPANY AND THE HOLDER 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 PERSON AT THE ADDRESS IN EFFECT FOR NOTICES TO IT 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 MANNER PERMITTED BY LAW. EACH OF THE COMPANY AND THE HOLDER HEREBY WAIVES ALL RIGHTS TO A TRIAL BY JURY.

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

(h) Severability. In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby, and the Company and the Holder will attempt in good faith to agree upon a valid and enforceable provision which shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

(i) Interpretation. For purposes of this Warrant, (a) the words “include,” “includes” and “including” are deemed to be followed by the words “without limitation”; (b) the word “or” is not exclusive; and (c) the words “herein,” “hereof,” “hereby,” “hereto” and “hereunder” refer to this Warrant as a whole. Unless the context otherwise requires, references herein: (x) to sections and schedules mean the sections of, and schedules attached to, this Warrant; (y) to an agreement, instrument, or other document means such agreement, instrument, or other document (as amended, supplemented and modified from time to time to the extent permitted by the provisions thereof/without regard to subsequent amendments, supplements, and modifications thereto); and (z) to a statute means such statute (as amended from time to time and includes/enforced at the time and date of this Warrant becoming effective) and does not include any successor legislation thereto and any regulations promulgated thereunder. This Warrant shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted. The schedules referred to herein shall be construed with, and as an integral part of, this Warrant to the same extent as if they were set forth verbatim herein. All references to “\$” or “dollars” mean the lawful currency of the United States of America. Whenever the singular is used in this Warrant, the same shall include the plural, and whenever the plural is used herein, the same shall include the singular, where appropriate.

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

COMPANY:

LEAP THERAPEUTICS, INC.

By: _____

Name: Douglas E. Onsi

Title: Chief Executive Officer and President

SCHEDULE 1

FORM OF EXERCISE NOTICE

[To be executed by the Holder to purchase shares of Common Stock under the Warrant]

Ladies and Gentlemen:

- (1) The undersigned is the Holder of Warrant No. __ (the "**Warrant**") issued by Leap Therapeutics, Inc., a Delaware corporation (the "**Company**"). Capitalized terms used herein and not otherwise defined herein have the respective meanings set forth in the Warrant.
- (2) The undersigned hereby exercises its right to purchase Warrant Shares pursuant to the Warrant.
- (3) The Holder intends that payment of the Exercise Price shall be made as (check one):
 - Cash Exercise
 - "Cashless Exercise" under Section 1Q of the Warrant
- (4) If the Holder has elected a Cash Exercise, the Holder shall pay the sum of \$ _____ in immediately available funds to the Company in accordance with the terms of the Warrant.
- (5) Pursuant to this Exercise Notice, the Company shall deliver to the Holder Warrant Shares determined in accordance with the terms of the Warrant.
- (6) By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 11(a) of the Warrant to which this notice relates.

Dated: _____

Name of Holder: _____

Name: _____

Title: _____

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

SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this "*Agreement*") is dated as of April 10, 2024, among Leap Therapeutics, Inc., a Delaware corporation (the "*Company*"), and each purchaser whose name is set forth on **Exhibit A** (each a "*Purchaser*" and collectively the "*Purchasers*").

WHEREAS, the Company and the undersigned Purchasers are executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by Section 4(a)(2) of the Securities Act of 1933, as amended (the "*Securities Act*"); and

WHEREAS, on the terms and subject to the conditions set forth in this Agreement, the Company desires to sell and issue to each Purchaser, and each Purchaser, severally and not jointly, desires to purchase from the Company, shares of the Company's common stock, \$0.001 par value per share ("*Common Stock*"), and/or a pre-funded warrant to purchase shares of Common Stock in the form attached hereto as **Exhibit B** (each a "*Pre-Funded Warrant*").

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, severally and not jointly, agree as follows:

1. DEFINITIONS

1.1 Definitions. The following terms have the meanings set forth in this Section 1.1 or elsewhere in this Agreement as provided below in this Section 1.1:

"*Board of Directors*" means the board of directors of the Company.

"*Business Day*" means a day, other than a Saturday or Sunday, on which commercial banks in Boston, Massachusetts are open for the general transaction of business.

"*Closing*" means the closing of the sale and purchase of Purchased Shares and Purchased Pre-Funded Warrants pursuant to Section 2.1 of this Agreement.

"*Closing Date*" means the date on which the Closing is consummated pursuant to Section 2.1(c) hereof.

"*Commission*" means the United States Securities and Exchange Commission.

"*Company Deliverables*" has the meaning set forth in Section 2.3(a) hereof.

"*Engagement Letter*" means that certain Engagement Letter, dated April 3, 2024, by and between the Company and the Placement Agent.

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

"*GAAP*" means United States Generally Accepted Accounting Principles.

"*Investment Company Act*" means the Investment Company Act of 1940, as amended.

“**Majority Purchasers**” means (i) at any time prior to the Closing, those Purchasers that have the right to purchase a majority of the Purchased Shares and the Warrant Shares that all of the Purchasers have the right to purchase pursuant to this Agreement and the Purchased Pre-Funded Warrants (treating, solely for purposes of this clause (i), all Purchased Pre-Funded Warrants as if they were issued and outstanding at such time), and (ii) at any time after the Closing, those Purchasers (or the successors or permitted transferees thereof) that are the holders of a majority of the Purchased Shares and Warrant Shares then held by all of the Purchasers (or the successors or permitted transferees thereof), treating, solely for purposes of this clause (ii), all Warrant Shares underlying any then outstanding Purchased Pre-Funded Warrants as if such Warrant Shares were then issued and outstanding and held by the registered holders of such then outstanding Purchased Pre-Funded Warrants.

“**Material Adverse Effect**” means a circumstance that (i) could reasonably be expected to have a material adverse effect on the performance of this Agreement or the consummation of any of the transactions contemplated hereby, (ii) could reasonably be expected to have a material adverse effect on the condition (financial or otherwise), prospects, earnings, business or properties of the Company and the Subsidiaries taken as a whole, or (iii) the delisting or suspension of the Company’s Common Stock from Nasdaq; provided, however, that none of the following will be deemed in themselves, either alone or in combination, to constitute, and that none of the following will be taken into account in determining whether there has been or will be, a Material Adverse Effect: (a) any change generally affecting the economy, financial markets or political, economic or regulatory conditions in the United States or any other geographic region in which the Company conducts business, (b) general financial, credit or capital market conditions, including interest rates or exchange rates, or any changes therein, (c) any change that generally affects industries in which the Company conducts business; (d) changes in laws after the date hereof; (e) changes in GAAP; or (f) any change arising in connection with earthquakes, hostilities, acts of war, sabotage or terrorism or military actions or any escalation or material worsening of any such hostilities, acts of war, sabotage or terrorism or military actions.

“**Nasdaq**” means The Nasdaq Capital Market.

“**Placement Agent**” means J.P. Morgan Securities LLC.

“**Purchased Pre-Funded Warrants**” has the meaning set forth in Section 2.1(a) hereof.

“**Purchased Shares**” has the meaning set forth in Section 2.1(a) hereof.

“**Purchased Securities**” means, collectively, the Purchased Shares and the Purchased Pre-Funded Warrants.

“**Registrable Shares**” has the meaning set forth in Section 4.1 hereof.

“**Registration Statement**” has the meaning set forth in Section 4.2(a) hereof.

“**Regulation D**” means Regulation D as promulgated by the Commission under the Securities Act.

“**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.

“**SEC Reports**” means collectively all reports, schedules, forms, statements and other documents required to be filed by the Company under the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, since January 1, 2022 (including the exhibits thereto and documents incorporated by reference therein).

“**Short Sales**” means all “short sales” as defined in Rule 200 of Regulation SHO of the Exchange Act, and all types of direct and indirect stock pledges (other than pledges in the ordinary course of business as part of prime brokerage arrangements), forward sale contracts, options, puts, calls, swaps and similar arrangements.

“**Subsidiaries**” means, with respect to any person, entities in which such person directly or indirectly owns, beneficially or of record, (a) an amount of voting securities or other equity interests issued by such entities that is sufficient to enable such person to elect at least a majority of the members of such entity’s board of directors or other governing body, or (b) at least 50% of the outstanding voting securities or other equity interests in such entities.

“**Trading Day**” means a day on which Nasdaq is open for trading.

“**Transaction Documents**” means this Agreement, the Purchased Pre-Funded Warrants and any other documents or agreements executed and delivered to the Purchasers in connection with the transactions contemplated hereunder.

“**Warrant Shares**” means the shares of Common Stock issued or issuable upon exercise of the Purchased Pre-Funded Warrants.

2. PURCHASE AND SALE

2.1 Closing.

(a) Subject to and upon the terms and conditions set forth in this Agreement, the Company hereby agrees to sell and issue to each Purchaser, and each Purchaser hereby agrees, severally and not jointly, to purchase from the Company, at the Closing, (i) the number of shares of Common Stock set forth opposite such Purchaser’s name on **Exhibit A** hereto under the caption “Purchased Shares” (the “**Purchased Shares**”), at a purchase price per share equal to \$2.82, and/or (ii) a Pre-Funded Warrant to purchase the number of shares of Common Stock set forth opposite such Purchaser’s name on **Exhibit A** hereto under the caption “Warrant Shares underlying Purchased Pre-Funded Warrant” (such Pre-Funded Warrant, a “**Purchased Pre-Funded Warrant**”), at a purchase price for such Purchased Pre-Funded Warrant equal to the product of (1) \$2.819 multiplied by (2) the number of shares of Common Stock underlying such Purchased Pre-Funded Warrant as set forth on **Exhibit A** hereto.

(b) At the Closing, each Purchaser shall deliver to the Company via wire transfer of immediately available funds equal to the aggregate purchase price set forth opposite such Purchaser's name on **Exhibit A** hereto under the caption "Aggregate Purchase Price" and the Company shall deliver to each Purchaser, in accordance with Section 2.2 of this Agreement, the Purchased Shares and/or the Purchased Pre-Funded Warrant that such Purchaser has agreed to purchase pursuant to Section 2.1(a) above.

(c) Subject to and upon the terms and conditions set forth in this Agreement, the Closing shall take place remotely via the exchange of executed documents and funds at 10:00 a.m. (Boston Time) on the third (3rd) Business Day promptly following the satisfaction or waiver of the conditions set forth in Section 2.2(a) and Section 2.2(b) hereof (other than the conditions set forth in Section 2.2(a)(vi) and Section 2.2(b)(v) hereof which will be satisfied at the Closing, unless waived) or at such other time, date and location as the parties shall mutually agree.

2.2 Closing Conditions.

(a) The obligation of each Purchaser to acquire the Purchased Securities at the Closing is subject to the fulfillment, on or prior to the Closing Date, of each of the following conditions, any of which may be waived by such Purchaser (as to itself only):

(i) The representations and warranties of the Company contained in Section 3.1 of this Agreement shall be true and correct in all material respects as of the date of this Agreement, and as of the Closing Date as though made on and as of the Closing Date, except for those of such representations and warranties that are made as of a specific date, which shall be true and correct in all material respects as of such specific date; *provided, however*, any of the representations or warranties of the Company contained in Section 3.1 of this Agreement that are qualified as to materiality or Material Adverse Effect shall be true and correct in all respects;

(ii) The Company shall have performed, satisfied and complied in all material respects with the covenants, agreements and conditions required by this Agreement to be performed, satisfied or complied with by the Company at or prior to the Closing;

(iii) No statute, rule, regulation, executive order, decree, ruling, judgement or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction that prohibits or enjoins the consummation of any of the transactions contemplated by this Agreement;

(iv) No suspension or removal from listing of the Common Stock on Nasdaq, and no initiation or threatening of any proceedings for delisting the Common Stock from Nasdaq, shall have occurred. The Company shall have filed with Nasdaq a Listing of Additional Shares notification form for the listing of the Purchased Shares and the Warrant Shares. No objection shall have been raised by Nasdaq with respect to the consummation of the transactions contemplated by this Agreement;

(v) Since the date of this Agreement, there shall not have occurred a Material Adverse Effect; and

(vi) The Company shall have delivered the Company Deliverables in accordance with Section 2.3(a).

(b) The Company's obligation to sell and issue Purchased Shares to any Purchaser at the Closing is subject to the fulfillment, on or prior to the Closing Date, of the following conditions, any of which may be waived by the Company:

(i) The representations and warranties made by such Purchaser in Section 3.2 hereof shall be true and correct in all material respects (without giving effect to any materiality qualifications therein) as of the date of this Agreement, and as of the Closing Date as though made on and as of the Closing Date, except for those of such representations and warranties that are made as of a specific date, which shall be true and correct in all material respects as of such specific date;

(ii) Such Purchaser shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by this Agreement to be performed, satisfied or complied with by such Purchaser at or prior to the Closing;

(iii) No statute, rule, regulation, executive order, decree, ruling, judgement or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction that prohibits or enjoins the consummation of any of the transactions contemplated by this Agreement;

(iv) No suspension or removal from listing of the Common Stock on Nasdaq, and no initiation or threatening of any proceedings for delisting the Common Stock from Nasdaq, shall have occurred. No objection shall have been raised by Nasdaq with respect to the consummation of the transactions contemplated by this Agreement; and

(v) Such Purchaser shall have made payment of the aggregate purchase price payable by such Purchaser pursuant to, and in accordance with, Section 2.3(b).

2.3 Closing Deliveries.

(a) At the Closing, the Company shall deliver or cause to be delivered to each Purchaser the following (the "**Company Deliverables**"):

(i) a written notice or record of book-entry registration evidencing the registration under such Purchaser's name of the number of Purchased Shares, if any, purchased by such Purchaser at the Closing pursuant to Section 2.1 hereof;

(ii) a PDF copy (original to follow by overnight courier) of the Purchased Pre-Funded Warrant, if any, purchased by such Purchaser at the Closing pursuant to Section 2.1 hereof, registered in such Purchaser's name;

(iii) a certificate, in form and substance reasonably satisfactory to the Majority Purchasers, dated as of the Closing Date and signed by the Secretary of the Company certifying the resolutions adopted by the Board of Directors of the Company or a duly authorized committee thereof approving this Agreement and all of the transactions contemplated hereunder;

(iv) a certificate, in form and substance reasonably satisfactory to the Majority Purchasers, dated as of the Closing Date and signed by the Chief Executive Officer of the Company certifying as to the fulfillment of the conditions set forth in Sections 2.2(a)(i), 2.2(a)(ii), 2.2(a)(iii), 2.2(a)(iv) and 2.2(a)(v) hereof; and

(v) a legal opinion of Morgan, Lewis & Bockius LLP, counsel for the Company, dated as of the Closing Date, in a form reasonably satisfactory to the Majority Purchasers.

(b) At the Closing, each Purchaser shall make payment to the Company by wire transfer of immediately available funds in accordance with the Company's written wiring instructions of the aggregate purchase price for the Purchased Shares and/or the Purchased Pre-Funded Warrant, as applicable, purchased by such Purchaser pursuant to Section 2.1 hereof.

3. REPRESENTATIONS AND WARRANTIES

3.1 Representations and Warranties of the Company. Except as disclosed in any of the SEC Reports filed at least three Trading Days prior to the date of this Agreement, which disclosures serve to qualify these representations and warranties in their entirety, the Company hereby represents and warrants to each Purchaser and the Placement Agent that the following statements contained in this Section 3.1 are true and correct as of the date of this Agreement and as of the Closing Date (except for those of such statements that speak as of a specific date, which are true and correct as of such specific date):

(a) The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the State of Delaware, with full corporate power and authority to own, lease and operate its properties and conduct its business as currently conducted, to execute and deliver this Agreement and to issue, sell and deliver the Purchased Securities pursuant to this Agreement. The Company has no Subsidiaries except as set forth in any of the SEC Reports.

(b) Each of the Company's 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 corporate or other power and authority to own, lease and operate its properties and conduct its business as currently conducted.

(c) Each of the Company and its 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, would not, individually or in the aggregate, have a Material Adverse Effect.

(d) The authorized capital stock of the Company consists of 240,000,000 shares of Common Stock and 10,000,000 shares of preferred stock, \$0.001 par value per share ("**Preferred Stock**"). As of the date of this Agreement, there are 25,603,471 shares of Common Stock issued and outstanding, and there is one share of Preferred Stock issued and outstanding that is designated as Special Voting Stock of the Company. As of the date of this Agreement, there are no other shares of any other class or series of capital stock of the Company issued or outstanding. Except as disclosed in any of the SEC Reports and except for outstanding securities of the Company under the equity incentive plans of the Company (the "**Stock Plans**"), as of the date of this Agreement there are no outstanding options or warrants granted or issued by the Company and there are no outstanding securities or rights issued by the Company convertible into any shares of capital stock of the Company or any of its Subsidiaries.

(e) As of the date of this Agreement, (i) the Company owns all of the issued and outstanding capital stock or other equity interests of each Subsidiary and (ii) the Company does not own, directly or indirectly, any shares of stock or any other equity interests or long-term debt securities of any corporation, firm, partnership, joint venture, association or other entity, except for the issued and outstanding capital stock or other equity interests of each Subsidiary.

(f) Other than as disclosed in any of the SEC Reports and this Agreement, no person has any preemptive rights, rights of first refusal or other similar rights to purchase from the Company any shares of Common Stock or shares of any other capital stock or of other equity interests in the Company. No person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Purchased Securities other than as provided for in the Engagement Letter. No person has the right, contractual or otherwise, to cause the Company to register under the Securities Act any shares of Common Stock or shares of any other capital stock or of other equity interests in the Company, or to include any such shares or interests in the Registration Statement (as defined below) or the offering contemplated by this Agreement, except any such right that (i) has been granted pursuant to this Agreement, (ii) has been disclosed in any of the SEC Reports or (iii) has been validly waived in writing as of the date of this Agreement, copies of such waivers to have been made available to you.

(g) The Purchased Securities and the Warrant Shares are duly and validly authorized and, when issued and delivered against payment therefor as provided in this Agreement or the Purchased Pre-Funded Warrants, as applicable, will be (i) duly and validly issued, fully paid and non-assessable and free and clear of all encumbrances and restrictions, except for any encumbrances and restrictions created or imposed by the Purchasers and for restrictions on transfer set forth in the Transaction Documents or imposed by applicable securities laws, and (ii) free of any restriction upon the voting thereof pursuant to the Delaware General Corporation Law or the Company's charter or bylaws or any agreement or other instrument to which the Company is a party.

(h) This Agreement has been duly authorized, executed and delivered by the Company and constitutes the lawful, valid and legally binding obligation of the Company, enforceable in accordance with its terms, except as enforceability may be limited by bankruptcy, insolvency or similar laws affecting the rights of creditors generally and general equitable principles.

(i) Neither the Company nor any of its Subsidiaries is in breach or violation of or in default under (nor has any event occurred which, with notice, lapse of time or both, would result in any breach or violation of, constitute a default under or give the holder of any indebtedness (or a person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a part of such indebtedness under) (i) its respective charter or bylaws, (ii) any indenture, mortgage, deed of trust, bank loan or credit agreement or other evidence of indebtedness, or any license, lease, contract or other agreement or instrument to which it is a party or by which it or any of its properties may be bound or affected, (iii) any applicable federal, state, local or foreign law, regulation or rule, (iv) any applicable rule or regulation of any self-regulatory organization or other non-governmental regulatory authority (including, without limitation, the rules and regulations of Nasdaq), or (v) any decree, judgment or order applicable to it or any of its properties, except, in the case of the foregoing clauses (ii), (iii), (iv) and (v), for any such breach, violation, default or event that would not, individually or in the aggregate, have a Material Adverse Effect.

(j) The Company is not, and, immediately after receipt of the aggregate purchase price for the Purchased Securities at the Closing will not be, an “investment company” or an entity “controlled” by an “investment company,” as such terms are defined in the Investment Company Act.

(k) The Company is not currently, and has never been, an Ineligible Issuer (as defined in Rule 405 of the Securities Act).

(l) The execution, delivery and performance of this Agreement, the issuance and sale of the Purchased Securities and the consummation of the transactions contemplated hereby will not conflict with, result in any breach or violation of or constitute a default under (nor constitute any event which, with notice, lapse of time or both, would result in any breach or violation of, constitute a default under or give the holder of any indebtedness (or a person acting on such holder’s behalf) the right to require the repurchase, redemption or repayment of all or a part of such indebtedness under) (or result in the creation or imposition of a lien, charge or encumbrance on any property or assets of the Company or its Subsidiaries pursuant to) (i) the charter or bylaws of the Company or its Subsidiaries, (ii) any indenture, mortgage, deed of trust, bank loan or credit agreement or other evidence of indebtedness, or any license, lease, contract or other agreement or instrument to which the Company or its Subsidiaries is a party or by which either of them or any of their respective properties may be bound or affected, (iii) any applicable federal, state, local or foreign law, regulation or rule, (iv) any applicable rule or regulation of any self-regulatory organization or other non-governmental regulatory authority (including, without limitation, the rules and regulations of Nasdaq), or (v) any decree, judgment or order applicable to the Company or its Subsidiaries or any of their respective properties, except, in the case of the foregoing clauses (ii), (iii), (iv) and (v), for any such conflict, breach, violation, default or event that would not, individually or in the aggregate, have a Material Adverse Effect.

(m) No approval, authorization, consent or order of or filing with any federal, state, local or foreign governmental or regulatory commission, board, body, authority or agency, or of or with any self-regulatory organization or other non-governmental regulatory authority (including, without limitation, Nasdaq) having jurisdiction over the Company, or approval or vote of the stockholders of the Company or any other person or entity, is required in connection with the issuance and sale of the Purchased Securities (or the purchase price thereof) or the consummation by the Company of the transactions contemplated hereby, other than (i) any necessary qualification under the securities or blue sky laws of the various jurisdictions in which the Purchased Securities are being offered, (ii) any listing applications and related consents or any notices required by Nasdaq in the ordinary course of the offering of the Purchased Securities, (iii) filings with the Commission under the Securities Act contemplated by this Agreement, or (iv) filings with the Commission on Form 8-K with respect to this Agreement.

(n) Each of the Company and its Subsidiaries has all necessary licenses, authorizations, consents and approvals and has made all necessary filings required under any applicable law, regulation or rule, and has obtained all necessary licenses, authorizations, consents and approvals from other persons, in order to conduct their respective businesses, except where failure to have, make or obtain the same would not, individually or in the aggregate, have a Material Adverse Effect. Neither the Company nor any of its Subsidiaries is in violation of, or in default under, or has received since January 1, 2022 notice of any proceedings relating to revocation or modification of, any such license, authorization, consent or approval or any federal, state, local or foreign law, regulation or rule or any decree, order or judgment applicable to the Company or its Subsidiaries, except where such violation, default, revocation or modification would not, individually or in the aggregate, have a Material Adverse Effect.

(o) The Company's Common Stock is registered under Section 12 of the Exchange Act. The Company has filed all SEC Reports on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied in all material respects with the requirements of the Exchange Act and, in each case, to the rules promulgated thereunder, 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 Company meets the registration and transaction requirements for use of Form S-3 for the registration of the Registrable Shares for resale by the Purchasers.

(p) The financial statements included in the SEC Reports, together with the related notes and schedules, present fairly the financial position of the Company as of the dates indicated and the results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified and have been prepared in compliance in all material respects with the requirements of the Securities Act and Exchange Act and in conformity with GAAP applied on a consistent basis during the periods involved, except as otherwise disclosed therein and, in the case of unaudited, interim financial statements, subject to normal year-end audit adjustments and the exclusion of certain footnotes. The interactive data in eXtensible Business Reporting Language included in the SEC Reports has been prepared in compliance in all material respects with the applicable rules and regulations promulgated by the Commission under the Securities Act and the Exchange Act.

(q) Other than as disclosed in any of the SEC Reports, there are no actions, suits, claims, investigations or proceedings pending to which the Company or its Subsidiaries or, to the Company's knowledge, any of their respective directors or officers is or would be a party or of which any of their respective properties is or would be subject at law or in equity, before or by any federal, state, local or foreign governmental or regulatory commission, board, body, authority or agency, or before or by any self-regulatory organization or other non-governmental regulatory authority (including, without limitation, Nasdaq), except any such action, suit, claim, investigation or proceeding which, if resolved adversely to the Company or its Subsidiaries, would not, individually or in the aggregate, have a Material Adverse Effect; and, to the Company's knowledge, no such actions, suits, claims, investigations or proceedings are threatened or contemplated.

(r) EisnerAmper LLP, who have certified certain financial statements of the Company and delivered their report with respect to the audited financial statements included in the SEC Reports, are independent public accountants with respect to the Company within the meaning of the Securities Act and the applicable published rules and regulations thereunder.

(s) Each stock option granted under any Stock Plan was granted with a per share exercise price no less than the fair market value per share of Common Stock on the grant date of such option, and no such grant involved any “back-dating” or similar practice with respect to the effective date of such grant. Except as would not, individually or in the aggregate, have a Material Adverse Effect, each such option (i) was granted in compliance with applicable law and with the applicable Stock Plan(s), (ii) was duly approved by the Board of Directors (or a duly authorized committee thereof or by an executive officer pursuant to Section 157(c) of the Delaware General Corporation Law) of the Company, and (iii) has been properly accounted for in the Company’s financial statements in accordance with U.S. generally accepted accounting principles and disclosed in the Company’s filings with the Commission.

(t) Each of the Company and its Subsidiaries has good title to all personal property described as owned by them in the latest financial statements set forth in the SEC Reports, free and clear of all liens, claims, security interests or other encumbrances, except (a) as disclosed in any of the SEC Reports, (b) as described in the financial statements included in any of the SEC Reports, or (c) for those liens, claims, security interests or other encumbrances that do not materially interfere with the use or proposed use of such personal property by the Company or its Subsidiaries, respectively, or as would not materially or adversely affect the value of such personal property. Neither the Company nor its Subsidiaries own any real property. All of the real property held under lease by the Company or its Subsidiaries is held thereby under valid, subsisting and enforceable leases, except as would not have a Material Adverse Effect.

(u) Except as disclosed in any of the SEC Reports and except as would not, individually or in the aggregate, have a Material Adverse Effect, (i) to the Company’s knowledge, the Company or its Subsidiaries owns the inventions, patent applications, patents, trademarks (both registered and unregistered), tradenames, service names, copyrights, trade secrets and other proprietary information (collectively, “*Intellectual Property*”) described in the SEC Reports as being owned by it and owns or has obtained valid and enforceable licenses for, or other rights to use, all Intellectual Property used in, or necessary for, the conduct of the businesses of the Company and its Subsidiaries as currently conducted or as proposed to be conducted (including the commercialization of products or services described in the SEC Reports) (collectively, “*Company Intellectual Property*”), except as enforceability may be limited by bankruptcy, insolvency or similar laws affecting the rights of creditors generally and general equitable principles, (ii) to the Company’s knowledge, there is no infringement, misappropriation or other violation by any third parties of any Company Intellectual Property owned by or exclusively licensed to the Company or its Subsidiaries, (iii) neither the Company nor its Subsidiaries has received since January 1, 2022 any notice from, and there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by, others challenging the Company’s or its Subsidiaries’ rights in or to any Company Intellectual Property, (iv) neither the Company nor its Subsidiaries has received since January 1, 2022 any notice from, and there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by, others challenging the validity, enforceability or scope of any Company Intellectual Property, (v) neither the Company nor its Subsidiaries has received since January 1, 2022 any notice from, and there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by, others that the Company or its Subsidiaries infringes, misappropriates or otherwise violates, or would, upon the commercialization of any product or service described in the SEC Reports as under development, infringe, misappropriate or violate, any Intellectual Property of others, (vi) each of the Company and its Subsidiaries has complied with the applicable terms of each agreement pursuant to which Company Intellectual Property has been licensed to such entity, and all such agreements are in full force and effect, and (vii) the Company has taken reasonable steps necessary to secure interests of each of the Company and its Subsidiaries in the Company Intellectual Property purported to be owned by such entity from the employees, consultants, agents and contractors of such entity.

(v) Except for matters which would not, individually or in the aggregate, have a Material Adverse Effect, (i) neither the Company nor its Subsidiaries is engaged in any unfair labor practice, (ii) there is (A) no unfair labor practice complaint pending or, to the Company's knowledge, threatened against the Company or its Subsidiaries before the National Labor Relations Board, and no grievance or arbitration proceeding arising out of or under collective bargaining agreements is pending or, to the Company's knowledge, threatened, (B) no strike, labor dispute, slowdown or stoppage pending or, to the Company's knowledge, threatened against the Company or its Subsidiaries, and (C) no union representation dispute currently existing concerning the employees of the Company or its Subsidiaries, (iii) to the Company's knowledge, no union organizing activities are currently taking place concerning the employees of the Company or its Subsidiaries, and (iv) there has been no violation of any federal, state, local or foreign law relating to discrimination in the hiring, promotion or pay of employees, any applicable wage or hour laws or any provision of the Employee Retirement Income Security Act of 1974, as amended, or the rules and regulations promulgated thereunder concerning the employees of the Company or its Subsidiaries.

(w) All tax returns required to be filed by the Company or its Subsidiaries have been timely filed, and all taxes and other assessments of a similar nature (whether imposed directly or through withholding) including any interest, additions to tax or penalties applicable thereto due or claimed to be due from such entities have been timely paid, other than those being contested in good faith and for which adequate reserves have been provided, except to the extent failure to file such return or make such payments would not, individually or in the aggregate, have a Material Adverse Effect.

(x) The Company maintains insurance covering the properties, operations, personnel and businesses of the Company and its Subsidiaries as the Company reasonably deems adequate to insure against such losses and risks in accordance with customary industry practice to protect the Company and Subsidiaries and their respective businesses. All such insurance is fully in force on the date of this Agreement and will be fully in force at the time of the Closing. The Company has no reason to believe that it will not be able to renew any such insurance as and when such insurance expires or obtain similar coverage at reasonable cost from similar insurers.

(y) The Company has established and maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorization, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain accountability for assets, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(z) The Company has established and maintains “disclosure controls and procedures” (as such term is defined in Rules 13a-15 and 15d-15 under the Exchange Act) that are designed to ensure that material information relating to the Company, including its Subsidiaries, is made known to the Company’s Chief Executive Officer and Chief Financial Officer by others within those entities, and such disclosure controls and procedures are effective to perform the functions for which they were established.

(aa) Neither the Company nor its Subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or its Subsidiaries has taken, directly or indirectly, without giving effect to activities by the Placement Agent, any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of the Common Stock or any “reference security” (as defined in Rule 100 of Regulation M under the Exchange Act) to facilitate the sale of the Registrable Shares.

(bb) Neither the Company nor its Subsidiaries (nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or its Subsidiaries or any other person, in each case if and to the extent acting for and on behalf of the Company or its Subsidiaries), (i) has used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expenses relating to political activity, (ii) has made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds, (iii) has taken any action, directly or indirectly, that would result in a violation of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (the “*Foreign Corrupt Practices Act*”), or (iv) has made any unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment to any foreign or domestic government official or employee.

(cc) The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance in all material respects with applicable financial recordkeeping and reporting requirements of the USA Patriot Act, the Bank Secrecy Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “*Money Laundering Laws*”). No action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator or non-governmental authority involving the Company or its Subsidiaries with respect to the Money Laundering Laws is pending or, to the Company’s knowledge, threatened.

(dd) Neither the Company nor its Subsidiaries nor, to the knowledge of the Company, any of their respective affiliates, directors, officers, agents or employees is subject to any sanctions administered or enforced by the Office of Foreign Assets Control (“*OFAC*”) of the U.S. Treasury Department, the U.S. Department of State, the United Nations Security Council, the European Union, His Majesty’s Treasury or any other relevant sanctions authority. The Company will not directly or indirectly use the proceeds of the offering of the Purchased Securities contemplated hereby, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity for the purpose of financing the activities of any person that is the target of sanctions administered or enforced by such authorities or in connection with any country or territory that is the target of country- or territory-wide OFAC sanctions (currently, Iran, Sudan, Syria, Cuba, North Korea, Crimea and the Donetsk People’s Republic and Luhansk People’s Republic regions of Ukraine).

(ee) The Company and its Subsidiaries are in compliance with all applicable laws of the jurisdictions in which they are conducting their business, including all applicable local, state and federal environmental laws (including laws relating to the use, disposal or release of hazardous or toxic substances or relating to the protection or restoration of the environment or human exposure to hazardous or toxic substances), and all applicable laws enforced by the United States Food and Drug Administration (the “*FDA*”) (including the Federal Food, Drug And Cosmetic Act, as amended (the “*FDCA*”), and the regulations promulgated thereunder) or any applicable laws enforced by equivalent governmental bodies outside the United States, except where failures to be so in compliance would not, individually or in the aggregate, have a Material Adverse Effect.

(ff) Any preclinical tests and studies or clinical trials conducted by, on behalf of, or sponsored by the Company or any of its Subsidiaries that are described in, or the results of which are referred to in, the SEC Reports (“*Studies*”), were conducted in all material respects, and, if still pending, are being conducted in all material respects, in accordance with all applicable laws and regulations and protocols governing the conduct of such Studies, the protocols, procedures and controls submitted to the FDA or any foreign governmental body exercising comparable authority (together with the FDA, the “*Regulatory Authorities*”), and any conditions of approval and policies imposed by any institutional review board, ethics review board or committee responsible for the oversight of such preclinical tests and studies and clinical trials. The descriptions of the Studies contained in the SEC Report are accurate in all material respects as of the date of the applicable SEC Report. To the Company’s knowledge, there are no other preclinical studies or clinical trials the results of which reasonably call into question in any material respect the Studies’ results described in the SEC Reports. Neither the Company nor any of its Subsidiaries has received since January 1, 2022 any written notice or correspondence from the FDA or any other Regulatory Authority or institutional review board exercising comparable authority requiring or threatening the termination, suspension, or clinical hold of any of the Studies, except where such termination, suspension or clinical hold would not, individually or in the aggregate, have a Material Adverse Effect.

(gg) Except for the Placement Agent, no broker or finder is entitled to any brokerage or finder’s fee or commission from the Company in connection with the sale of the Purchased Securities pursuant to this Agreement.

(hh) Neither the Company nor any person acting on its behalf has conducted any general solicitation or general advertising, including methods described in section 502(c) of Regulation D under the Securities Act, in connection with the offer or sale of the Purchased Securities, and neither the Company nor any person acting on its behalf has offered the Purchased Securities in a manner involving a public offering under, or in a distribution in violation of, the Securities Act.

(ii) The Company, including the Company's directors or officers, in their capacities as such, are in compliance in all material respects with all provisions of the Sarbanes-Oxley Act of 2002, as amended (the "*Sarbanes-Oxley Act*"), and the rules and regulations promulgated thereunder, which are applicable to it as of the date hereof. The principal executive officer and principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company, as applicable) have made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act.

(jj) Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.2 of this Agreement, no registration under the Securities Act is required for the offer and sale of the Purchased Securities by the Company to the Purchasers hereunder, and the offer and sale of the Purchased Securities by the Company to the Purchasers hereunder does not violate the rules and regulations of Nasdaq.

(kk) No consideration (including any modification of documents related hereto) shall be offered or paid to any person to amend or consent to a waiver or modification of any provision of this Agreement or any documents related hereto unless the same consideration is also offered to all Purchasers hereunder. 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 (subject to the proviso in the preceding sentence) and shall not in any way be construed as the Purchasers acting in concert or as a group (including a "group" within the meaning of Section 13(d)(3) of the Exchange Act) with respect to the purchase, disposition or voting of securities or otherwise. The Company does not have, and will not enter into, any agreement or understanding with any Purchaser that affords such Purchaser any rights or terms with respect to any of the Purchased Securities that are more beneficial to such Purchaser than those afforded to all other Purchasers hereunder.

(ll) The Company has no other agreements or understandings (including side letters) with any Purchaser or any other person with respect to any of the Purchased Securities other than as specified in this Agreement.

3.2 Representations, Warranties and Covenants of the Purchasers. Each Purchaser, for itself and for no other Purchaser, hereby represents, warrants and covenants to the Company and the Placement Agent as of the date of this Agreement and as of the Closing Date, as follows:

(a) (i) Such Purchaser has all requisite legal and corporate or other power and capacity and has taken all requisite corporate or other action to execute and deliver this Agreement, to purchase the Purchased Securities and to carry out and perform all of its obligations under this Agreement and (ii) this Agreement constitutes the legal, valid and binding obligation of such Purchaser, enforceable against such Purchaser in accordance with its terms, except (A) as limited by applicable bankruptcy, insolvency, reorganization or similar laws relating to or affecting the enforcement of creditors' rights generally and (B) as limited by equitable principles generally.

(b) Such Purchaser is either: (i) an “accredited investor” as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7) or (a)(8) under the Securities Act or (ii) a “qualified institutional buyer” as defined in Rule 144A(a) under the Securities Act, and is an “institutional account” as defined by FINRA Rule 4512(c). Such Purchaser is aware of the Company’s business affairs and financial condition and has had access to and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Purchased Securities. Such Purchaser has such business and financial experience as is required to give it the capacity to protect its own interests in connection with the purchase of the Purchased Securities. Such Purchaser acknowledges that it has had the opportunity to review the Company’s filings with the Commission and has been afforded (A) 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 Purchased Securities and the merits and risks of investing in the Purchased Securities and (B) 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.

(c) Such Purchaser is purchasing the Purchased Securities for its own account, for investment purposes only, and not with a present view to or for, resale, distribution or fractionalization thereof, in whole or in part (within the meaning of the Securities Act.) in violation of the Securities Act. Such Purchaser understands that its acquisition of the Purchased Securities has not been registered under the Securities Act or registered or qualified under any state securities law in reliance on specific exemptions therefrom, which exemptions may depend upon, among other things, the bona fide nature of such Purchaser’s investment intent as expressed herein. Such Purchaser will not, directly or indirectly, offer, sell, pledge, transfer or otherwise dispose of (or solicit any offers to buy, purchase or otherwise acquire or take a pledge of) the Purchased Securities except in compliance with the Securities Act and the rules and regulations promulgated thereunder.

(d) Such Purchaser represents and acknowledges that it has not been solicited to offer to purchase or to purchase any Purchased Securities by means of any general solicitation or advertising within the meaning of Regulation D under the Securities Act.

(e) No broker, finder or other financial consultant has acted on behalf of such Purchaser in connection with this Agreement or the transactions contemplated hereby (including the purchase of, any offer to purchase, or any solicitation of any offer to sell, Purchased Securities to such Purchaser pursuant to this Agreement) in such a way as to create any liability on the Company.

(f) Such Purchaser understands that the Purchased Securities being offered and sold to it in reliance on specific exemptions from the registration requirements of U.S. federal and state securities laws and that the Company is relying in part upon the truth and accuracy of, and such Purchaser’s compliance with, the representations, warranties, agreements, acknowledgements and understandings of such Purchaser set forth herein in order to determine the availability of such exemptions and the eligibility of such Purchaser to acquire the Purchased Securities. Such Purchaser further acknowledges and understands that the Purchased Securities may not be resold or otherwise transferred except in a transaction registered under the Securities Act or unless an exemption from such registration is available.

(g) Such Purchaser understands that nothing in this Agreement or any other materials presented to the Purchaser in connection with the purchase and sale of the Purchased Securities constitutes legal, tax or investment advice. Such Purchaser has consulted such legal, tax and investment advisors and made such investigations as such Purchaser, in its sole discretion, has deemed necessary or appropriate in connection with its purchase of the Purchased Securities. Such Purchaser understands that the Placement Agent have acted solely as the agents of the Company in this placement of the Purchased Securities and such Purchaser has not relied on the business, legal, tax or investment advice of the Placement Agent or any of its agents, counsel or affiliates in making its investment decision hereunder, and confirms that none of such persons has made any representations or warranties to such Purchaser in connection with the transactions contemplated herein.

(h) As of the date of this Agreement, such Purchaser has not directly or indirectly, nor has any person acting on behalf of or pursuant to any understanding with such Purchaser, engaged in any purchases or sales of the Company's securities (including, without limitation, any Short Sales involving the Company's securities) since the time that such Purchaser was first contacted by the Company, the Placement Agent or any other person regarding the transactions contemplated hereby. Such Purchaser covenants that neither it nor any person acting on its behalf or pursuant to any understanding with it will engage in any purchases or sales of the Company's securities (including, without limitation, any Short Sales involving the Company's securities) prior to the time that the transactions contemplated by this Agreement are publicly disclosed.

(i) Such Purchaser will hold in confidence all information concerning this Agreement and the sale and issuance of the Purchased Securities until the Company has made a public announcement concerning this Agreement and the sale and issuance of the Purchased Securities, which shall be made not later than 9:00 am (Boston Time) time on the first Trading Day immediately after the signing of this Agreement.

(j) Purchaser understands that no U.S. federal or state agency or any other government or governmental agency has passed upon or made any recommendation or endorsement of the Purchased Securities.

(k) **Legend.**

(i) Such Purchaser understands that the Purchased Securities shall bear a restrictive legend in substantially the following form (and a stop transfer order may be placed against transfer of the Purchased Securities):

"THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES OR IN ANY OTHER JURISDICTION. THE SECURITIES REPRESENTED HEREBY MAY NOT BE OFFERED, SOLD OR TRANSFERRED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER APPLICABLE SECURITIES LAWS UNLESS OFFERED, SOLD OR TRANSFERRED PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THOSE LAWS."

(ii) The Company shall, at its sole expense, upon appropriate notice from any Purchaser stating that Registrable Shares have been sold pursuant to an effective Registration Statement, timely prepare and deliver certificates or book-entry shares representing the Registrable Shares to be delivered to a transferee pursuant to the Registration Statement, which certificates or book-entry shares shall be free of any restrictive legends and in such denominations and registered in such names as such Purchaser may request. Further, while the Registration Statement is effective, the Company shall, at its sole expense, cause its legal counsel or other counsel satisfactory to the transfer agent (i) to issue to the transfer agent a “blanket” legal opinion to allow sales of Registrable Shares without restriction pursuant to such effective Registration Statement and (ii) provide all other opinions as may reasonably be required by the transfer agent in connection with the removal of legends applicable to any Registrable Shares sold pursuant to such effective Registration Statement. A Purchaser may submit a written request that the Company remove, and the Company agrees to authorize the removal of, any legend from any Registrable Shares: (A) following any sale of such Registrable Shares pursuant to Rule 144, (B) if such Registrable Shares are eligible for sale under Rule 144(b)(1), or (C) following the time that a Registration Statement is declared effective that registers under the Securities Act the resale of such Registrable Shares by such Purchaser; provided, however, that in the case of any request made by such Purchaser that the Company remove any legend from such Registrable Shares pursuant to either the foregoing clause (B) or the foregoing clause (C), the Company’s obligation to authorize or cause the removal of such legend may be conditioned upon such Purchaser providing such undertakings, representations and documentation (including broker representation letters) as the Company may request in order to ensure that the resale or transfer of such Registrable Shares following the removal of such legend will be effected in compliance with all of the requirements of applicable federal securities laws. It is understood and agreed that the Company will not be required to authorize or cause the removal of such legend and/or to deliver any such opinion, authorization, certificate, or direction to effect or facilitate the removal of such legend if the Company reasonably believes that removal of such legend could result in or facilitate transfers of securities in violation of applicable law. If the Company is required to implement or authorize a legend removal request pursuant to the foregoing provisions of this Section 3.2(k), the Company will, no later than three Trading Days following the delivery by a Purchaser to the Company or the Company’s transfer agent of (1) a written request for legend removal, (2) a legended certificate representing such Registrable Shares (except in the case of Registrable Shares issued in book-entry form, in which case such Purchaser shall deliver to the Company a written notice from the Company’s transfer agent reflecting such Purchaser’s book-entry ownership of such Registrable Shares and the legends to which such Registrable Shares are subject) and (3) such other undertakings, representations and documentation (including broker representation letters) as the Company may request pursuant to the foregoing provisions of this Section 3.2(k), deliver or cause to be delivered to such Purchaser a certificate representing such Registrable Shares that is free from all restrictive legends or an equivalent book-entry position, as requested by the Purchaser. Registrable Shares in book-entry form, free from all restrictive legends, may be transmitted by the Company’s transfer agent to the Purchasers by crediting the account of the Purchaser’s prime broker with the Depository Trust Company (“*DTC*”) as directed by such Purchaser.

(l) Such Purchaser hereby represents and warrants that such Purchaser, together with its affiliates and any other persons acting as a group together with such Purchaser and any of its affiliates, is on the date of this Agreement, and shall be immediately prior to the Closing, the beneficial owner of the number of shares of Common Stock set forth on such Purchaser's signature page to this Agreement.

(m) If such Purchaser is not a United States person (as defined by Section 7701(a)(30) of the Code), such Purchaser hereby represents that it has satisfied itself as to the full observance of the laws of its jurisdiction in connection with any invitation to subscribe for the Purchased Securities or any use of this Agreement, including (i) the legal requirements within its jurisdiction for the purchase of the Purchased Securities, (ii) any foreign exchange restrictions applicable to such purchase or acquisition, (iii) any government or other consents that may need to be obtained, and (iv) the income tax and other tax consequences, if any, that may be relevant to the purchase, holding, redemption, sale or transfer of the Purchased Securities. Such Purchaser's subscription and payment for and continued beneficial ownership of the Purchased Securities will not violate any applicable securities or other laws of such Purchaser's jurisdiction.

(n) Acknowledgements Regarding Placement Agent by each Purchaser.

(i) Such Purchaser acknowledges that the Placement Agent is (A) acting as Placement Agent on a "best efforts" basis for the Purchased Securities being offered hereby and will be compensated by the Company for acting in such capacity and (B) acting solely as Placement Agent in connection with the execution, delivery and performance of the Transaction Documents and is not acting as an underwriter or in any other capacity and are not and shall not be construed as a fiduciary for such Purchaser, the Company or any other person or entity in connection with the execution, delivery and performance of the Transaction Documents. Such Purchaser represents that: (a) it was contacted regarding the sale of the Purchased Securities by the Placement Agent or the Company (or an authorized agent or representative thereof) with whom such Purchaser entered into a verbal or written confidentiality agreement and (b) no Purchased Securities were offered or sold to it by means of any form of general solicitation or general advertising as such terms are used in Regulation D of the Securities Act.

(ii) Such Purchaser represents that it is making this investment based on the results of its own due diligence investigation of the Company and has not relied on any information or advice furnished by or on behalf of the Placement Agent in connection with the transactions contemplated hereby. Such Purchaser acknowledges that the Placement Agent has not made, and will not make, any representations and warranties with respect to the Company or the transactions contemplated hereby, and such Purchaser will not rely on any statements made by the Placement Agent, orally or in writing, to the contrary. No disclosure or offering document has been prepared by the Placement Agent or any of its affiliates in connection with the offer and sale of the Purchased Securities. Neither the Placement Agent nor any of its affiliates have made or make any representation as to the quality or value of the Purchased Securities and the Placement Agent and any of its affiliates may have acquired non-public information with respect to the Company which such Purchaser agrees need not be provided to it.

(o) **Exculpation of the Placement Agents.** Such Purchaser agrees for the express benefit of the Placement Agent, their affiliates and its representatives that neither the Placement Agent nor any of its affiliates or any of its representatives: (i) has any duties or obligations other than those specifically set forth in the Engagement Letter, (ii) shall be liable to such Purchaser for any improper payment made in accordance with the information provided by the Company, (iii) makes any representation or warranty, or has any responsibilities as to the validity, legality, enforceability, accuracy, value or genuineness of any information, certificates or documentation delivered by or on behalf of the Company pursuant to this Agreement or the other Transaction Documents or in connection with any of the transactions contemplated hereby and thereby, or (iv) will not have any liability or obligation (including, for or with respect to any losses, claims, damages, obligations, penalties, judgments, awards, liabilities, costs, expenses or disbursements incurred by such Purchaser, the Company or any other person or entity), whether in contract, tort or otherwise, to such Purchaser, or to any person claiming through it, in respect of the transactions contemplated by the Transaction Documents. The Placement Agent shall not be liable to any Purchaser for any action heretofore or hereafter taken or omitted to be taken by it in connection with any Purchaser's purchase of the Purchased Securities. No disclosure or offering document has been prepared by the Placement Agent or any of its affiliates in connection with the offer and sale of the Purchased Securities. Neither the Placement Agent nor any of its affiliates have made or make any representation as to the quality or value of Purchased Securities and the Placement Agent and any of its affiliates may have acquired non-public information with respect to the Company which such Purchaser agrees need not be provided to it.

4. REGISTRATION RIGHTS

4.1 Definitions. For the purpose of this Section 4, the term “*Registrable Shares*” means the Purchased Shares and the Warrant Shares, collectively; *provided, however*, that any shares of Common Stock that are Registrable Shares shall cease to be Registrable Shares for all purposes of this Agreement upon the earliest to occur of the following: (i) a Registration Statement filed pursuant to this Agreement for purposes of registering the resale of such shares of Common Stock under the Securities Act has been declared or becomes effective and such shares of Common Stock have been sold or otherwise transferred by the holder thereof pursuant to and in a manner contemplated by such effective Registration Statement, (ii) such shares of Common Stock are sold pursuant to Rule 144 under circumstances in which any legend borne by such security relating to restrictions on transferability thereof, under the Security Act or otherwise, is removed by the Company, (iii) such shares of Common Stock become eligible to be sold pursuant to Rule 144 without condition or restriction, including, without any limitation as to volume of sales, and without the Purchaser complying with any method of sale requirements or notice requirements under Rule 144, (iv) such security shall cease to be outstanding following its issuance, or (v) the third anniversary of the Closing Date.

4.2 Registration Procedures and Expenses. Subject to Section 4.3, Section 4.5 and Section 4.7 hereof, the Company shall:

(a) file a shelf resale registration statement (including any preliminary prospectus, final prospectus, exhibit or amendment included in or relating to such registration statement, a “*Registration Statement*”) with the Commission as soon as practicable, but in no event later than 30 days following the Closing (the “*Filing Date*”) to register on Form S-3 all of the Registrable Shares then issued or issuable upon exercise of the Purchased Pre-Funded Warrants issued at the Closing for resale pursuant to Rule 415 promulgated under the Securities Act. The Registration Statement shall not register for resale any securities other than the Registrable Shares. In the event that Form S-3 is not available for the registration of the Registrable Shares, the Company shall register the resale of the Registrable Shares on such other form as is available to the Company;

(b) use its commercially reasonable efforts to cause the Registration Statement to be declared effective as soon as practicable, and in any event within 90 days following the Closing Date (or, in the event the Staff (as defined below) reviews and has written comments to the Registration Statement, within 120 days following the Closing Date) (the earlier of the foregoing or the applicable date set forth in Section 4.2(g), the “**Effectiveness Deadline**”), such efforts to include, without limiting the generality of the foregoing, preparing and filing with the Commission any financial statements or other information that is required to be filed prior to the effectiveness of the Registration Statement;

(c) not less than five Trading Days prior to the filing of a Registration Statement or any related prospectus or any amendment or supplement thereto, furnish via email to those Purchasers who have supplied the Company with email addresses copies of all such documents proposed to be filed, which documents (other than any document that is incorporated or deemed to be incorporated by reference therein) will be subject to the review of such Purchasers. The Company shall reflect in each such document when so filed with the Commission such comments regarding the Purchasers and the plan of distribution as the Purchasers may reasonably and promptly propose no later than three Trading Days after the Purchasers have been so furnished with copies of such documents as aforesaid;

(d) promptly prepare and file with the Commission such amendments and supplements to such Registration Statements and the prospectus used in connection therewith as may be necessary to keep such Registration Statements continuously effective and free from any material misstatement or omission to state a material fact therein until termination of such obligation as provided in Section 4.8 below, subject to the Company’s right to suspend pursuant to Section 4.7;

(e) furnish to the Purchasers such number of copies of prospectuses in conformity with the requirements of the Securities Act and such other documents as the Purchasers may reasonably request, in order to facilitate the public sale or other disposition of all or any of the Registrable Shares by the Purchasers;

(f) file such documents as may be required of the Company for normal securities law clearance for the resale of the Registrable Shares in such states of the United States as may be reasonably requested by the Purchasers and use its commercially reasonable efforts to maintain such blue sky qualifications during the period the Company is required to maintain effectiveness of the Registration Statements; *provided, however*, that the Company shall not be required in connection with this Section 4.2(f) to qualify as a foreign corporation or execute a general consent to service of process in any jurisdiction in which it is not now so qualified or has not so consented;

(g) upon notification by the Commission that a Registration Statement will not be reviewed or is not subject to further review by the Commission, the Company shall within three Trading Days following the date of such notification request acceleration of such Registration Statement (with the requested effectiveness date to be not more than two Trading Days later);

(h) upon notification by the Commission that that the Registration Statement has been declared effective by the Commission, the Company shall file the final prospectus under Rule 424 of the Securities Act (“*Rule 424*”) within the applicable time period prescribed by Rule 424;

(i) advise the Purchasers promptly (and in any event within two Trading Days thereof):

(i) of the effectiveness of the Registration Statement or any post-effective amendments thereto;

(ii) of any request by the Commission for amendments to the Registration Statement or amendments to the prospectus or for additional information relating thereto;

(iii) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement under the Securities Act or of the suspension by any state securities commission of the qualification of the Registrable Shares for offering or sale in any jurisdiction, or the initiation of any proceeding for any of the preceding purposes; and

(iv) of the existence of any fact and the happening of any event that makes any statement of a material fact made in the Registration Statement, the prospectus and amendment or supplement thereto, or any document incorporated by reference therein, untrue, or that requires the making of any additions to or changes in the Registration Statement or the prospectus in order to make the statements therein not misleading;

(j) cause all Registrable Shares to be listed on each securities exchange, if any, on which equity securities by the Company are then listed; and

(k) bear all expenses in connection with the procedures in paragraphs (a) through this paragraph (k) of this Section 4.2 and the registration of the Registrable Shares on such Registration Statement and the satisfaction of the blue sky laws of such states.

4.3 Limitation on Company’s Obligation to Register Registrable Shares. Notwithstanding anything express or implied elsewhere in this Section 4 to the contrary, (i) the Company’s obligations to include the Registrable Shares in a Registration Statement pursuant to this Agreement or otherwise are subject to, and contingent upon, each Purchaser furnishing a completed and executed selling stockholder questionnaire in customary form to the Company that contains the information regarding such Purchaser, the securities of the Company held by such Purchaser and the intended method of disposition of the Registrable Shares of such Purchaser that is required by Commission rules to be included in such Registration Statement to effect the registration under the Securities Act of the resale of the Registrable Shares by the Purchasers, and (ii) each Purchaser shall be obligated to furnish such completed and executed selling stockholder questionnaire and to execute such other documents in connection with such registration as the Company may reasonably request that are customary of a selling stockholder in similar situations, including any document providing that the Company shall be entitled to postpone and suspend the effectiveness or use of such Registration Statement, if applicable, as permitted hereunder. It is understood and agreed that, in the event that any Purchaser does not comply with its obligations under this Section 4.3 on a timely basis, the Company may elect to include in a Registration Statement pursuant to this Agreement or otherwise only the Registrable Shares of those Purchasers that have complied on a timely basis with their respective obligations under this Section 4.3 and not be required to register under the Securities Act pursuant to the provisions of this Section 4 or otherwise the resale of the Registrable Shares of any Purchaser that does not comply on a timely basis with its obligations under this Section 4.3.

4.4 Effect of Failure to File and Obtain and Maintain Effectiveness of Registration Statement. Subject to Section 4.3, Section 4.5 and Section 4.7 hereof, if either: (i) a Registration Statement covering all of the Registrable Shares required to be covered thereby and required to be filed by the Company pursuant to this Agreement following the Closing is: (A) not filed with the Commission on or before a Filing Date (a "**Filing Failure**") or (B) not declared effective by the Commission on or before an Effectiveness Deadline (an "**Effectiveness Failure**") or (ii) on any day after effectiveness, sales of all of the Registrable Shares required to be included in such Registration Statement cannot be made (other than by virtue of the provisions of Section 4.7 hereof) pursuant to such Registration Statement (a "**Maintenance Failure**"), then, in satisfaction of the damages to any holder of Registrable Shares required to be included in such Registration Statement by reason of any such delay in or reduction of its ability to sell the applicable Registrable Shares, the Company shall pay to such holder of such Registrable Shares required to be included in such Registration Statement an amount in cash equal to 1.0% of the purchase price paid to the Company in connection with the original sale and issuance by the Company of such Registrable Shares on each of the following dates: (x) the day of a Filing Failure and on every thirtieth day (prorated for periods totaling less than 30 days) thereafter until such Filing Failure is cured, (y) the day of an Effectiveness Failure and on every thirtieth day (prorated for periods totaling less than 30 days) thereafter until such Effectiveness Failure is cured, and (z) the initial day of a Maintenance Failure and on every thirtieth day (prorated for periods totaling less than 30 days) thereafter until such Maintenance Failure is cured. The payments to which a holder shall be entitled pursuant to this Section 4.4 are referred to herein as "**Registration Delay Payments**"; provided that in no event shall the aggregate Registration Delay Payments accruing under this Section 4.4 with respect to any Registrable Shares exceed 10% of the purchase price paid to the Company in connection with the original sale and issuance by the Company of such Registrable Shares. The first such Registration Delay Payment shall be paid within three business days after the event or failure giving rise to such Registration Delay Payment occurred and all other Registration Delay Payments shall be paid on the earlier of (I) the last day of the calendar month during which such Registration Delay Payments are incurred and (II) the third business day after the event or failure giving rise to the Registration Delay Payments is cured.

4.5 Rule 415; Cutback. If at any time the staff of the Commission ("**Staff**") takes the position that the offering of some or all of the Registrable Shares in a Registration Statement is not eligible to be made on a delayed or continuous basis under the provisions of Rule 415 under the Securities Act or requires any Purchaser to be named as an "underwriter," the Company shall (in consultation with legal counsel to the Purchaser) use its commercially reasonable efforts to persuade the Commission that the offering contemplated by such Registration Statement is a valid secondary offering and not an offering "by or on behalf of the issuer" as defined in Rule 415 and that none of the Purchasers is an "underwriter." In the event that, despite the Company's commercially reasonable efforts (including incorporating comments from the Purchasers and their counsel on any response letters to Commissions comments, so long as such comments are provided without unreasonable delay) and compliance with the terms of this Section 4.5, the Staff refuses to alter its position, the Company shall (i) remove from the Registration Statement such portion of the Registrable Shares (the "**Cut Back Shares**") and/or (ii) agree to such restrictions and limitations on the registration and resale of the Registrable Shares as the Staff may require to assure the Company's compliance with the requirements of Rule 415 (collectively, the "**SEC Restrictions**"); provided, however, that the Company shall not agree to name any Purchaser as an "underwriter" in such Registration Statement without the prior written consent of such Purchaser. Any cutback imposed on the Purchasers pursuant to this Section 4.5 shall be allocated among the Purchasers on a pro rata basis, unless the SEC Restrictions otherwise require or provide or the Purchasers holding a majority of the Registrable Shares otherwise agree. No liquidated damages shall accrue under Section 4.4 as to any Cut Back Shares until such date as the Company is able to effect the registration of such Cut Back Shares in accordance with any SEC Restrictions (such date, the "**Restriction Termination Date**" of such Cut Back Shares). From and after the Restriction Termination Date applicable to any Cut Back Shares, all of the provisions of this Section 4 shall again be applicable to such Cut Back Shares; provided, however, that (x) the Filing Date for the Registration Statement including such Cut Back Shares shall be 30 days after such Restriction Termination Date and (y) the Effectiveness Deadline with respect to such Cut Back Shares shall be the 90th day immediately after the Restriction Termination Date or the 120th day if the Staff reviews such Registration Statement (but in any event no later than three Trading Days from the Staff indicating it has no further comments on such Registration Statement that includes such Cut Back Shares).

4.6 Indemnification.

(a) The Company agrees to indemnify and hold harmless each Purchaser and its affiliates, partners, members, officers, directors, agents and representatives, and each person, if any, who controls such Purchaser within the meaning of Section 15 of the Securities Act or Section 20 the Exchange Act (each, a “Purchaser Party” and collectively the “Purchaser Parties”), to the fullest extent permitted by applicable law, from and against any losses, claims, damages or liabilities (collectively, “Losses”) to which they may become subject insofar as such Losses (or actions or proceedings in respect thereof) arise out of, or are based upon, any untrue statement or alleged untrue statement of a material fact contained in a Registration Statement or any omission or alleged omission to state therein a 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, or arise out of any failure by the Company to fulfill any undertaking included in the Registration Statement, and the Company will, as incurred, reimburse the Purchaser Parties for any legal or other expenses reasonably incurred in investigating, defending or preparing to defend any such action, proceeding or claim; *provided, however*, that (i) that the indemnification contained in this Section 4.6(a) shall not apply to amounts paid in settlement of any Losses if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld, conditioned or delayed), and (ii) the Company shall not be liable for indemnification under this Section 4.6(a) with respect to any Loss to the extent that such Loss arises out of, or is based upon an untrue statement or omission or alleged untrue statement or omission made in such Registration Statement in reliance upon and in conformity with written information furnished to the Company by or on behalf of such Purchaser specifically for use in preparation of the Registration Statement, or an omission by such Purchaser of a material fact from such written information furnished to the Company; *provided further, however*, that the Company shall not be liable to any Purchaser Party (or any partner, member, officer, director or controlling person of the Purchasers) to the extent that any such Loss is caused by an untrue statement or omission or alleged untrue statement or omission made in any preliminary prospectus if either (A) (x) such Purchaser failed to send or deliver a copy of the final prospectus with or prior to, or such Purchaser failed to confirm that a final prospectus was deemed to be delivered prior to (in accordance with Rule 172 of the Securities Act), the delivery of written confirmation of the sale by such Purchaser to the person asserting the claim from which such Loss resulted and (y) the final prospectus corrected such untrue statement or omission, (B) (X) such untrue statement or omission is corrected in an amendment or supplement to the prospectus and (Y) having previously been furnished by or on behalf of the Company with copies of the prospectus as so amended or supplemented or notified by the Company that such amended or supplemented prospectus has been filed with the Commission, in accordance with Rule 172 of the Securities Act, such Purchaser thereafter fails to deliver such prospectus as so amended or supplemented, with or prior to or a Purchaser fails to confirm that the prospectus as so amended or supplemented was deemed to be delivered prior to (in accordance with Rule 172 of the Securities Act), the delivery of written confirmation of the sale by such Purchaser to the person asserting the claim from which such Loss resulted or (iii) such Purchaser sold Registrable Shares in violation of such Purchasers’ covenants contained in Section 3.2 of this Agreement.

(b) Each Purchaser agrees, severally and not jointly, to indemnify and hold harmless the Company and its officers, directors, affiliates, agents and representatives and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (each a “*Company Party*” and collectively the “*Company Parties*”), from and against any Losses to which the Company Parties may become subject insofar as such Losses (or actions or proceedings in respect thereof) arise out of, or are based upon, any untrue statement of a material fact contained in a Registration Statement (or any omission or alleged omission to state therein a 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), if, and only to the extent, such untrue statement or omission or alleged untrue statement or omission was made in reliance upon and in conformity with written information furnished by or on behalf of such Purchaser specifically for use in preparation of the Registration Statement, or as a result of an omission by such Purchaser of a material fact from such written information furnished to the Company, and each Purchaser, severally and not jointly, will reimburse each Company Party for any legal or other expenses reasonably incurred in investigating, defending or preparing to defend any such action, proceeding or claim; *provided, however*, that (i) that the indemnification contained in this Section 4.6(b), shall not apply to amounts paid in settlement of any Losses if such settlement is effected without the consent of the applicable indemnifying Purchaser (which consent shall not be unreasonably withheld, conditioned or delayed), and (ii) in no event shall any indemnity under this Section 4.6(b) be greater in amount than the dollar amount of the net proceeds received by the applicable indemnifying Purchaser upon its sale of the Registrable Shares included in the Registration Statement giving rise to such indemnification obligation.

(c) Promptly after receipt by any indemnified person of a notice of a claim or the beginning of any action in respect of which indemnity is to be sought against an indemnifying person pursuant to this Section 4.6, such indemnified person shall notify the indemnifying person in writing of such claim or of the commencement of such action, and, subject to the provisions hereinafter stated, in case any such action shall be brought against an indemnified person and such indemnifying person shall have been notified thereof, such indemnifying person shall be entitled to participate therein, and, to the extent that it shall wish, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified person. After notice from the indemnifying person to such indemnified person of its election to assume the defense thereof, such indemnifying person shall not be liable to such indemnified person for any legal expenses subsequently incurred by such indemnified person in connection with the defense thereof; *provided, however*, that if there exists or shall exist a conflict of interest that would make it inappropriate in the reasonable judgment of the indemnified person for the same counsel to represent both the indemnified person and such indemnifying person or any affiliate or associate thereof, the indemnified person shall be entitled to retain its own counsel at the expense of such indemnifying person; *provided, further*, that no indemnifying person shall be responsible for the fees and expense of more than one separate counsel for all indemnified parties. The indemnifying party shall not settle an action without the consent of the indemnified party, which consent shall not be unreasonably withheld.

(d) If the indemnification provided for in this Section 4.6 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any losses, claims, damages or liabilities referred to herein, the indemnifying party, in lieu of indemnifying such indemnified party thereunder, shall, to the extent permitted by applicable law, contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or liability in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other, as well as any other relevant equitable considerations; provided, that in no event shall any contribution by an indemnifying party hereunder be greater in amount than the dollar amount of the proceeds received by such indemnifying party upon the sale of such Registrable Shares.

4.7 Suspension Event. Notwithstanding anything to the contrary in this Agreement, the Company shall be entitled to delay or postpone the filing or effectiveness of any Registration Statement, and from time to time to require Subscriber not to sell under any Registration Statement or to suspend the effectiveness thereof, if the filing, effectiveness or continued use of such Registration Statement would require the Company to make any public disclosure of material non-public information, which disclosure, in the good faith determination of the Board of Directors, after consultation with counsel to the Company, (i) would be required to be made in such Registration Statement in order for the applicable Registration Statement not to contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements contained therein not misleading, and (ii) the Company has a bona fide business purpose for not making such information public (each such circumstance, a "Suspension Event"); provided, however, that the Company may not delay or suspend any Registration Statement on more than two occasions or for more than sixty (60) consecutive calendar days, or more than one hundred twenty (120) total calendar days, in each case, during any three hundred sixty (360) day period. Upon receipt of any written notice from the Company of the happening of any Suspension Event during the period that any Registration Statement is effective or if as a result of a Suspension Event any Registration Statement or related prospectus contains any untrue statement of a material fact or omits 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 (in the case of the prospectus) not misleading, each Purchaser agrees that it will immediately discontinue offers and sales of the Registrable Shares under such Registration Statement (excluding, for the avoidance of doubt, sales conducted pursuant to Rule 144) until such Purchaser receives copies of a supplemental or amended prospectus that corrects the misstatement(s) or omission(s) referred to above and receives notice by the Company that it may resume such offers and sales.

4.8 Termination of Obligations. The obligations of the Company pursuant to Section 4.2 hereof shall cease and terminate, with respect to any Registrable Shares, upon the earlier to occur of (i) such time such Registrable Shares have been resold or (ii) such time as such Registrable Shares no longer remain Registrable Shares pursuant to Section 4.1 hereof.

4.9 Reporting Requirements.

(a) With a view to making available the benefits of certain rules and regulations of the Commission that may at any time permit the sale of the Registrable Shares to the public without registration or pursuant to a registration statement on Form S-3, the Company agrees:

(i) to make and keep public information available, as those terms are understood and defined in Rule 144;

(ii) to file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act; and

(iii) so long as a Purchaser owns Registrable Shares, to furnish to such Purchaser upon request (A) a written statement by the Company as to whether it is in compliance with the reporting requirements of Rule 144, the Securities Act and the Exchange Act, or whether it is qualified as a registrant whose securities may be resold pursuant to Commission Form S-3, (B) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company, and (C) such other information as may be reasonably requested to permit the Purchaser to sell such securities pursuant to Rule 144.

4.10 Blue Sky. The Company shall obtain and maintain all necessary blue sky law permits and qualifications, or shall secure exemptions therefrom, required by any state for the offer and sale of Registrable Shares.

5. OTHER AGREEMENTS OF THE PARTIES

5.1 Securities Laws Disclosure; Publicity. The Company shall: (i) issue a press release disclosing the material terms of the transactions contemplated hereby no later than 9:00 a.m. (Boston Time) on the Trading Day immediately following the date of this Agreement (the "**Press Release**") and (ii) by 5:30 p.m. (Boston Time) on the fourth Trading Day following the date of this Agreement, file a Current Report on Form 8-K disclosing the material terms of the transactions contemplated hereby (the "**Form 8-K**"). Subject to the foregoing, neither the Company nor any Purchaser shall issue any press releases or any other public statements with respect to the transactions contemplated hereby except as may be reviewed and approved by the Company; *provided, however*, that the Company shall be entitled, without the prior approval of any Purchaser, to make any press release or other public disclosure as is required by applicable law and regulations.

5.2 Use of Proceeds. The Company will use the net proceeds received from the sale of the Purchased Securities to continue to advance its clinical programs and for working capital and general corporate purposes.

5.3 Reservation of Common Stock. The Company has reserved, and shall continue to reserve and keep available at all times prior to issuance, the number of Purchased Shares issuable pursuant to this Agreement and the number of shares of Common Stock issuable upon exercise of the Purchased Pre-Funded Warrants, in each case free of preemptive rights.

5.4 Nasdaq Listing. The Company shall prepare and file with Nasdaq a Notification of Listing of Additional Shares covering all of the Purchased Shares and all of the Warrant Shares.

6. MISCELLANEOUS

6.1 Termination. This Agreement may be terminated prior to the Closing (i) by mutual written agreement of all the parties hereto or (ii) by the Company, upon written notice of termination to the Purchasers, if the Closing has not been consummated within ten (10) calendar days from the date of this Agreement. The obligation of the Company to sell and issue to a particular Purchaser, and the obligation of such particular Purchaser to purchase from the Company, the applicable number of Purchased Securities pursuant to, and in accordance with, this Agreement may be terminated prior to the consummation of such sale and purchase (x) by mutual written agreement of such Purchaser and the Company, (y) by such Purchaser, upon written notice of termination to the Company and the other Purchasers, if such sale and purchase has not been consummated within ten (10) calendar days from the date of this Agreement for any reason other than such Purchaser's breach of any of such Purchaser's representations, warranties, covenants or agreements set forth in this Agreement, or (z) by the Company, upon written notice of termination to such Purchaser and the other Purchasers, if such sale and purchase has not been consummated within ten (10) calendar days from the date of this Agreement for any reason other than the Company's breach of any of the Company's representations, warranties, covenants or agreements set forth in this Agreement. Any termination pursuant to the provisions of the immediately preceding sentence of the respective obligations of the Company and a particular Purchaser to consummate the sale and purchase of the applicable number of Purchased Securities pursuant to, and in accordance with, this Agreement shall not have any effect whatsoever on the respective obligations of the Company and each of the other Purchasers to consummate the sale and purchase between the Company and each such other Purchaser of the applicable number of Purchased Securities pursuant to, and in accordance with, this Agreement. Any termination that is effected pursuant to any of the foregoing provisions of this Section 6.1 shall not terminate or affect the right of any party to this Agreement to sue for any breach of this Agreement by any other party to this Agreement.

6.2 Fees and Expenses. Except as expressly set forth 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.

6.3 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 subject matter, which the parties acknowledge have been merged into such documents, exhibits and schedules.

6.4 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 upon actual receipt via mail, courier or confirmed email 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.

6.5 Amendments; Waivers. No provision of this Agreement may be waived or amended except in a written instrument signed by the Company and the then Majority Purchasers, *provided, however*, that, notwithstanding the foregoing, this Agreement may not be amended and the observance of any term of this Agreement may not be waived with respect to any Purchaser without the written consent of such Purchaser unless such amendment or waiver applies to all Purchasers in the same fashion and provided that none of the conditions to Closing set forth in Section 2(a) hereof (or the requirement that any of such conditions be satisfied) may be waived with respect to any Purchaser unless such Purchaser consents or otherwise agrees in writing to such waiver. 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.

6.6 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.

6.7 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their permitted successors and 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). No Purchaser may assign this Agreement or any rights or obligations hereunder without the prior written consent of the Company (other than by merger).

6.8 Third-Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective permitted successors and 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 4.6. Notwithstanding the foregoing, the Placement Agent may rely on, but may not enforce, the representations and warranties of the Company in Section 3.1 hereof, and the representations, warranties and/or covenants of the Purchasers in Section 3.2 hereof. The Company agrees that the Placement Agent, its affiliates and representatives shall be entitled to (a) rely on, and shall be protected in acting upon, any certificate, instrument, opinion, notice, letter or any other document or security delivered to any Placement Agent or any Purchaser by or on behalf of the Company, and (b) be indemnified by the Company for acting as a Placement Agent in accordance with the indemnification provisions set forth in the Engagement Letter.

6.9 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Agreement 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 Agreement (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the State of Delaware. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Delaware 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 this Agreement), 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 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.

6.10 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. Counterparts may be delivered via facsimile, electronic mail (including any electronic signature covered by the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

6.11 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.

6.12 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 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.

6.13 Construction. The parties agree that each of them and/or their respective counsel has 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 hereto.

6.14 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 WAIVES FOREVER TRIAL BY JURY.

[Remainder of page intentionally left blank.]

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.

Leap Therapeutics, Inc.

Name: Douglas E. Onsi
Title: Chief Executive Officer

Address for Notice: Leap Therapeutics, Inc.
47 Thorndike Street
Cambridge, MA 02141
Email: donsi@leaptx.com
Attention: Douglas E. Onsi

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

Morgan, Lewis & Bockius LLP
One Federal Street
Boston, MA 02110
Attention: Julio E. Vega
Email: julio.vega@morganlewis.com

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.

PURCHASERS:

[NAME OF PURCHASER]:

By: _____

Name: _____

Title: _____

Address: _____

Shares Beneficially
Owned Prior to
the date of this
Agreement and
the Closing: _____

EIN: _____

Contact: _____

Email: _____

EXHIBIT A
PURCHASER SCHEDULE

[See attached.]

EXHIBIT B
FORM OF PREFUNDED WARRANT

[See attached.]



Leap Therapeutics Announces \$40 Million Private Placement

Net proceeds, along with existing cash, cash equivalents, and marketable securities are expected to extend cash runway into Q2 2026 and enable expansion of DKN-01 DeFianCe clinical trial and development program

Cambridge, MA – April 11, 2024 – Leap Therapeutics, Inc. (Nasdaq:LPTX), a biotechnology company focused on developing targeted and immuno-oncology therapeutics, today announced it has entered into a securities purchase agreement with a select group of institutional investors to issue and sell an aggregate of 12,660,993 shares of its common stock ("Common Stock") at a price of \$2.82 per share and pre-funded warrants to purchase 1,523,404 shares of Common Stock at a price of \$2.819 per share of Common Stock issuable upon exercise of the pre-funded warrants, in a private placement. Leap anticipates the gross proceeds from the private placement will be approximately \$40 million, before deducting any offering-related expenses. The financing is expected to close on April 15, 2024, subject to satisfaction of customary closing conditions.

The private placement investors included new and existing investors, including Gilead Sciences, Inc., a life sciences-focused investor, Samsara BioCapital, 683 Capital Partners, LP, Laurion Capital Management, and Rock Springs Capital.

J.P. Morgan acted as the exclusive placement agent for the transaction.

Leap intends to use the net proceeds from the financing to fund the continued development of its lead monoclonal antibody program, DKN-01, by expanding the randomized controlled Part B of the DeFianCe Study in patients with second-line colorectal cancer from 130 to 180 patients, by enabling data to mature in the randomized controlled Part C of the DisTinGuish study in patients with first-line gastric cancer, and by manufacturing clinical trial material to permit Phase 3 readiness, and for working capital and general corporate purposes. The net proceeds from this financing, combined with existing cash, cash equivalents and marketable securities, are expected to fund Leap's operating and capital expenditures into the second quarter of 2026.

The shares of Common Stock and the pre-funded warrants to be sold in this financing, as well as the shares of Common Stock issuable upon exercise of the pre-funded warrants, have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), or any state or other applicable jurisdiction's securities laws and may not be offered or sold in the United States absent registration or an applicable exemption from the registration requirements of the Securities Act and applicable state or other jurisdictions' securities laws. Pursuant to the securities purchase agreement, Leap has agreed to file a registration statement with the U.S. Securities and Exchange Commission (the "SEC") to register the resale by the investors of the shares of Common Stock and the shares of Common Stock issuable upon exercise of the pre-funded warrants sold in the private placement. Any offering of the Company's Common Stock under the resale registration statement will only be made by means of a prospectus.

This press release shall not constitute an offer to sell or a solicitation of an offer to buy Leap's Common Stock, pre-funded warrants, or any other security of Leap, nor shall there be any offer, solicitation, or sale of Leap's Common Stock, pre-funded warrants, or any other security of Leap in any jurisdiction in which such offer, solicitation or sale would be unlawful.

The private placement is being conducted in accordance with applicable Nasdaq rules and was priced to satisfy the "Minimum Price" requirement (as defined in the Nasdaq rules).

About Leap Therapeutics

Leap Therapeutics (Nasdaq: LPTX) is focused on developing targeted and immuno-oncology therapeutics. Leap's most advanced clinical candidate, DKN-01, is a humanized monoclonal antibody targeting the Dickkopf-1 (DKK1) protein. DKN-01 is being developed in patients with esophagogastric, gynecologic, and colorectal cancers. FL-301, is a humanized monoclonal antibody targeting Claudin18.2, being developed in patients with gastric and pancreatic cancer. Leap also has preclinical antibody programs targeting Claudin18.2/CD137 and GDF15. For more information about Leap Therapeutics, visit <http://www.leaptx.com> or view our public filings with the SEC that are available via EDGAR at <http://www.sec.gov> or via <https://investors.leaptx.com/>.

FORWARD-LOOKING STATEMENTS

This press release contains forward-looking statements within the meaning of the federal securities laws. Such statements are based upon current plans, estimates and expectations of the management of Leap that are subject to various risks and uncertainties that could cause actual results to differ materially from such statements. The inclusion of forward-looking statements should not be regarded as a representation that such plans, estimates and expectations will be achieved. Words such as "anticipate," "expect," "project," "intend," "believe," "may," "will," "should," "plan," "could," "continue," "target," "contemplate," "estimate," "forecast," "guidance," "predict," "possible," "potential," "pursue," "likely," and words and terms of similar substance used in connection with any discussion of future plans, actions or events identify forward-looking statements.

All statements, other than historical facts, including statements regarding the potential safety, efficacy, and regulatory and clinical progress of Leap's product candidates; the anticipated expansion of the DeFianCe study and timing for completion of clinical trials and release of clinical trial data and the expectations surrounding the outcomes thereof; Leap's future clinical or preclinical product development plans for any of Leap's product candidates; Leap's estimations of projected cash runway; the anticipated closing date of the private placement; the amount of proceeds to be received by Leap and Leap's intended use of proceeds from the private placement; and any assumptions underlying any of the foregoing, are forward-looking statements. Important factors that could cause actual results to differ materially from Leap's plans, estimates or expectations could include, but are not limited to: (i) Leap's ability to successfully execute its clinical trials and the timing of enrollment in and cost of such clinical trials; (ii) the results of Leap's clinical trials and pre-clinical studies; (iii) Leap's ability to successfully enter into new strategic partnerships for DKN-01 or any of its other programs and to maintain its ongoing collaborations with BeiGene, NovaRock and Adimab; (iv) whether any Leap clinical trials and products will receive approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies; (v) exposure to inflation, currency rate and interest rate fluctuations, as well as fluctuations in the market price of Leap's traded securities; and (vi) that the initiation, conduct, and completion of clinical trials, laboratory operations, manufacturing campaigns, and other studies may be delayed, adversely affected, or impacted by global conflict, or supply chain related issues. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. No representations or warranties (expressed or Implied) are made about the accuracy of any such forward-looking statements. Leap may not actually achieve the forecasts disclosed in such forward-looking statements, and you should not place undue reliance on such forward-looking statements. Such forward-looking statements are subject to a number of material risks and uncertainties including but not limited to those set forth under the caption "Risk Factors" in Leap's most recent Annual Report on Form 10-K filed with the SEC, as well as discussions of potential risks, uncertainties, and other important factors in its subsequent filings with the SEC. Any forward-looking statement speaks only as of the date on which it was made. Neither Leap, nor any of its affiliates, advisors or representatives, undertake any obligation to publicly update or revise any forward-looking statement, whether as result of new information, future events or otherwise, except as required by law. These forward-looking statements should not be relied upon as representing Leap's views as of any date subsequent to the date hereof.

CONTACT:

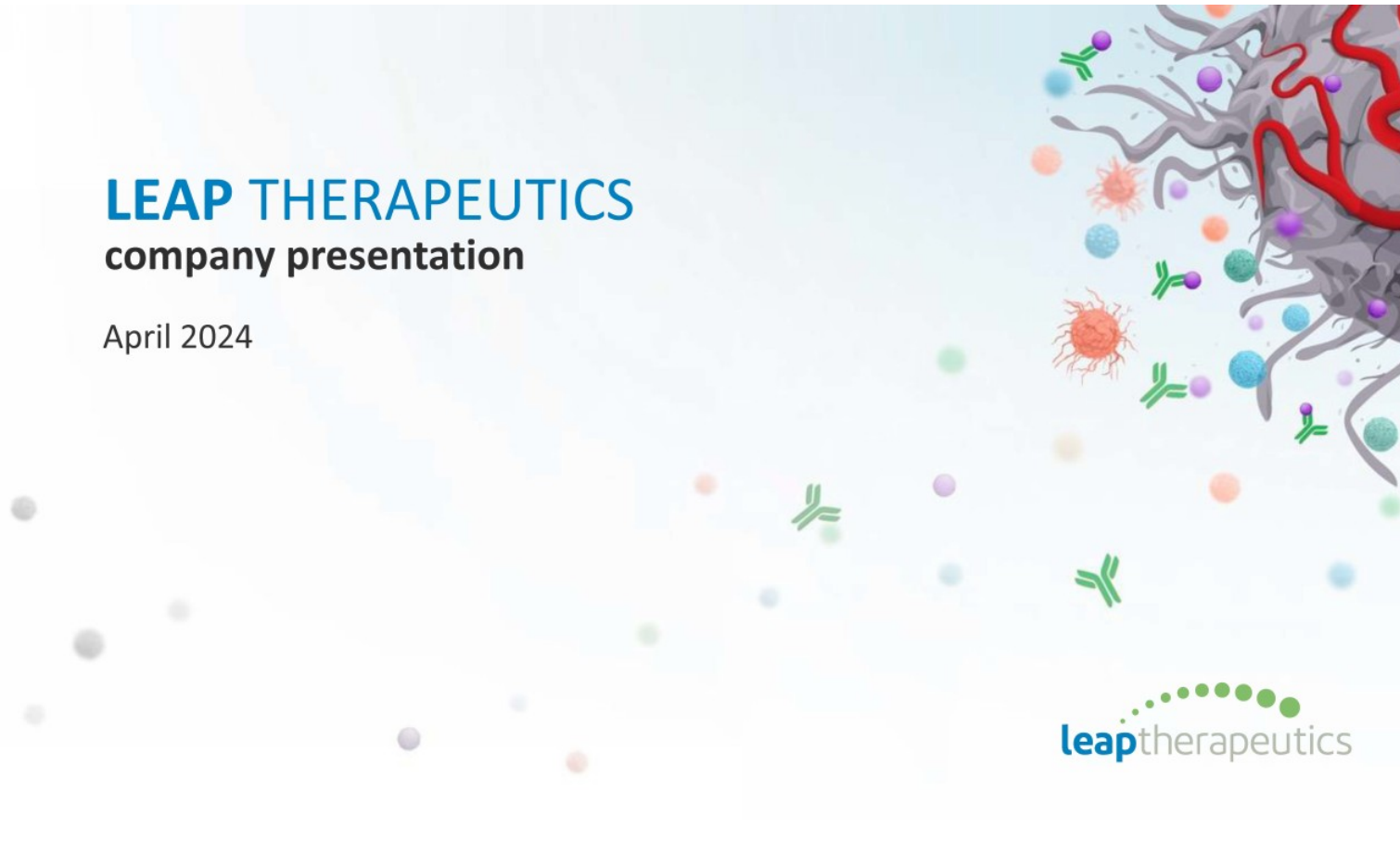
Douglas E. Onsi
President & Chief Executive Officer
Leap Therapeutics, Inc.
617-714-0360
donsi@leaptx.com

Matthew DeYoung
Investor Relations
Argot Partners
212-600-1902
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LEAP THERAPEUTICS

company presentation

April 2024



Forward looking statements

This presentation contains forward-looking statements that involve substantial risks and uncertainties.

All statements, other than statements of historical facts, contained in this presentation, including statements regarding our strategy, future operations, clinical trials, collaborations and partnerships, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements within the meaning of U.S. securities laws. The words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “target,” “potential,” “will,” “would,” “could,” “should,” “continue,” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions.

Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. These and other risk factors are listed from time to time in reports filed with the Securities and Exchange Commission, including, but not limited to, our Annual Reports on Form 10-K and our Quarterly Reports on Form 10-Q. We assume no obligation to update any forward-looking statements, except as required by applicable law.

This presentation does not constitute an offer to sell, or the solicitation of an offer to buy, any securities.

Developing biomarker-targeted antibody therapies for cancer patients



Two clinical stage antibody programs –
DKN-01 targeting DKK1
FL-301 targeting CLDN18.2



Upcoming multiple milestones from two randomized clinical trials

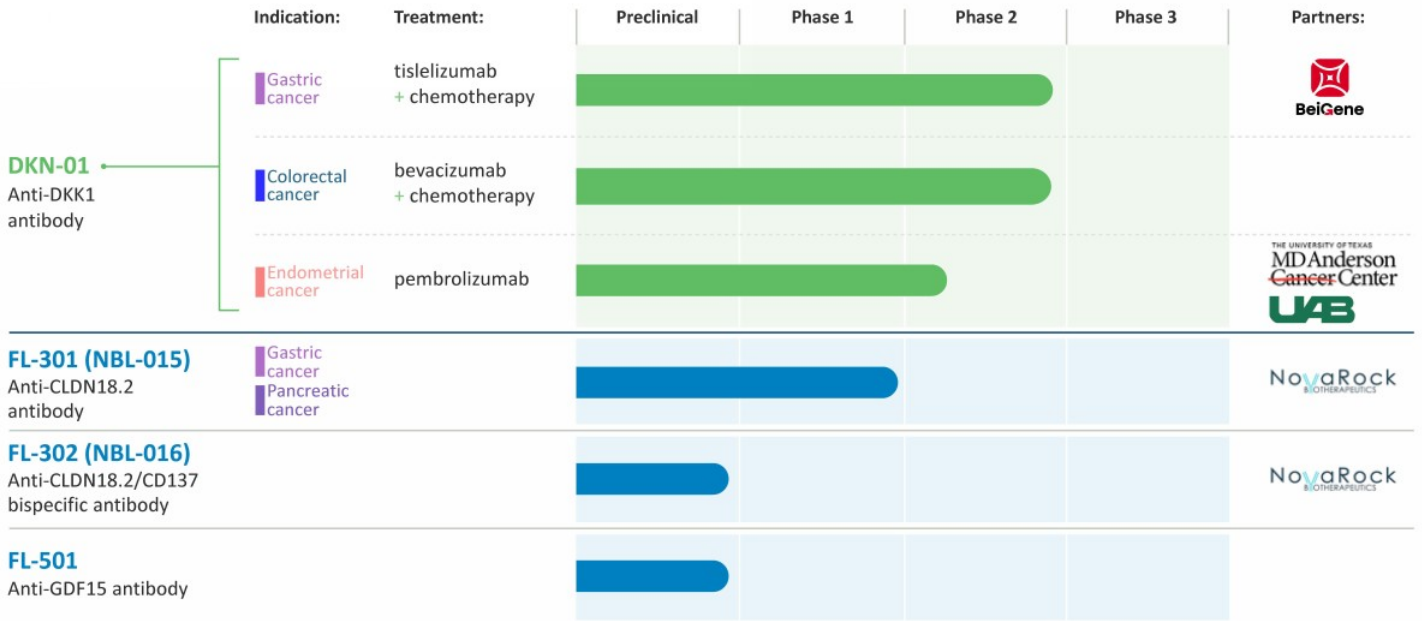


Biomarker strategy,
focus on GI cancers



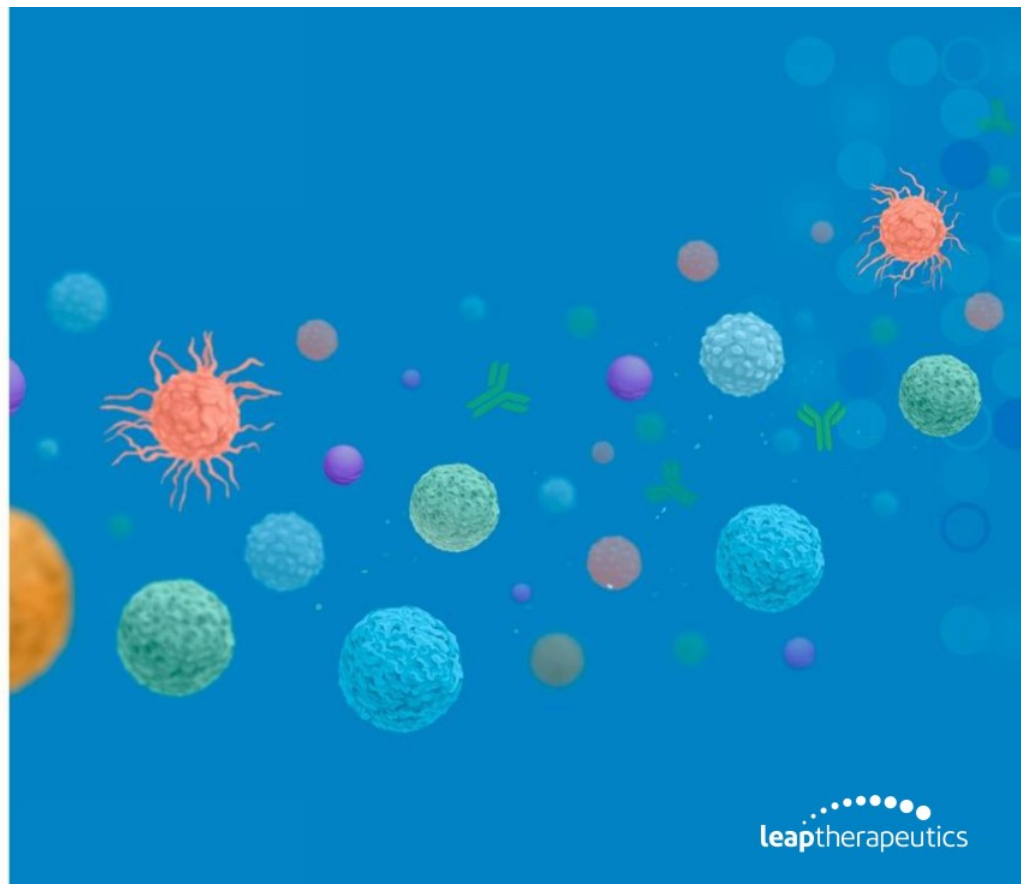
Cash runway to 2026 with \$70.6M at December 31, 2023

Pipeline

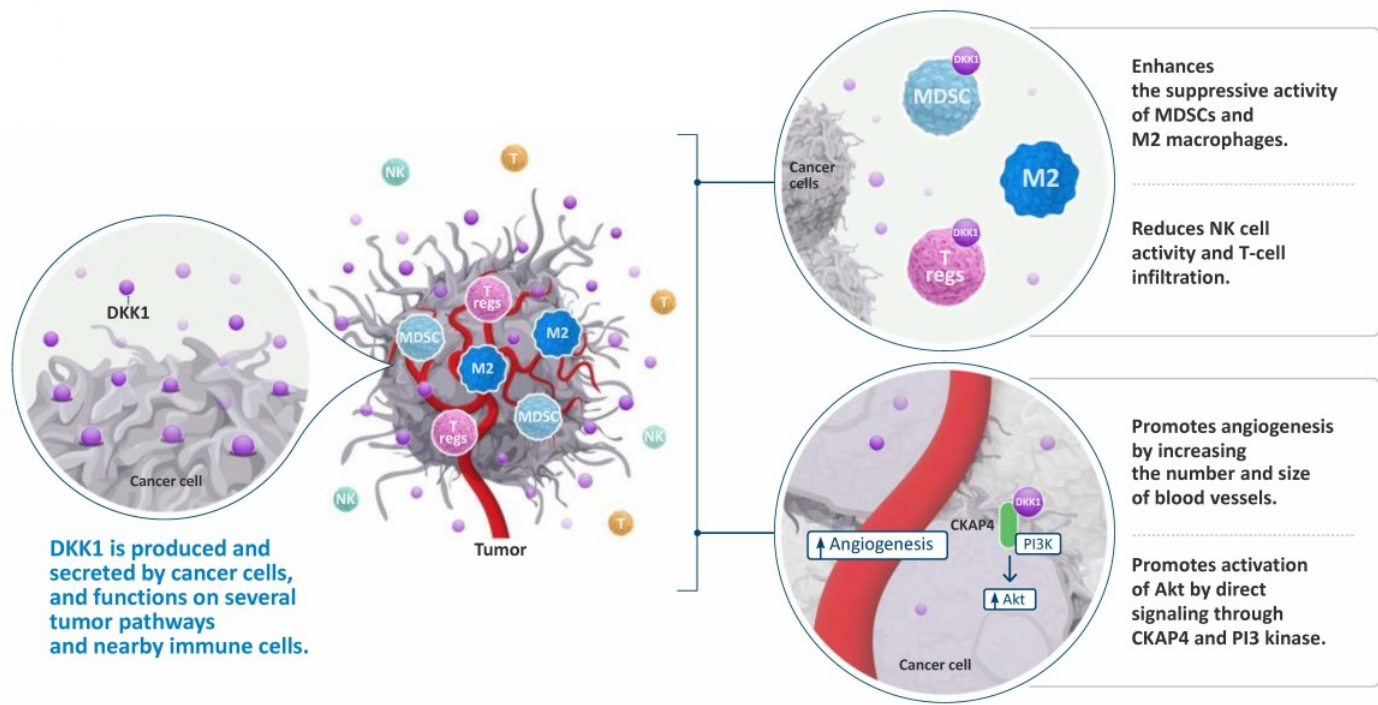


DKN-01

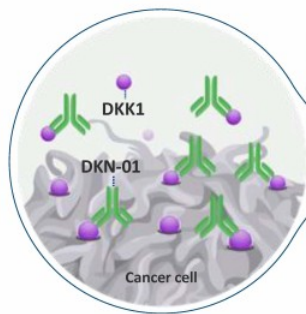
Anti-DKK1 monoclonal antibody



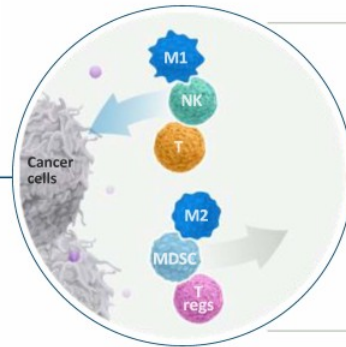
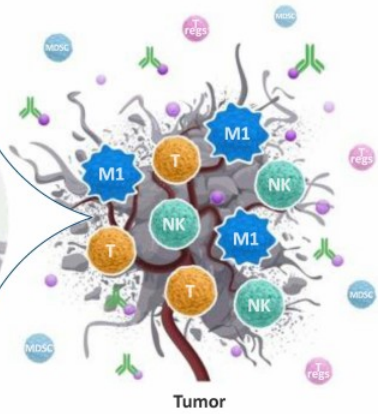
The role of DKK1 in cancer



Activity of DKN-01 to treat cancer

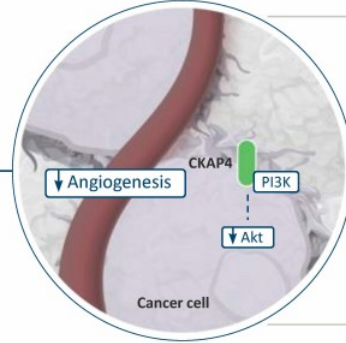


DKN-01 treatment neutralizes DKK1 and stimulates an immune mediated anti-tumor response.



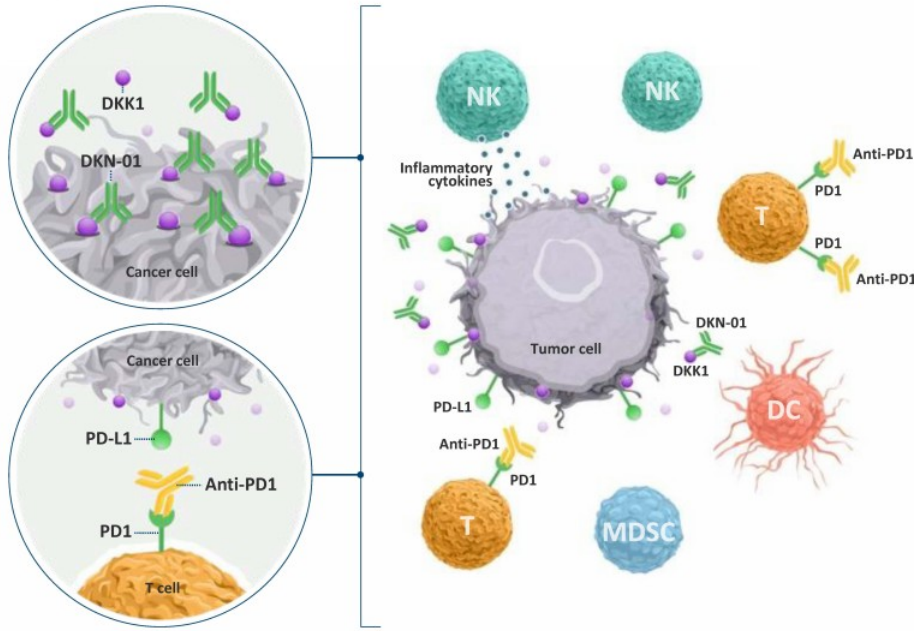
DKN-01 activates NK cells, reprograms macrophages into the tumor-attacking M1 subtype and promotes T cell infiltration.

DKN-01 reduces MDSCs and tumor suppressive M2 macrophages in the TME.



DKN-01 reduces angiogenesis and inhibits pro-oncogenic PI3K/AKT signaling.

DKN-01 and anti-PD-1 cooperativity



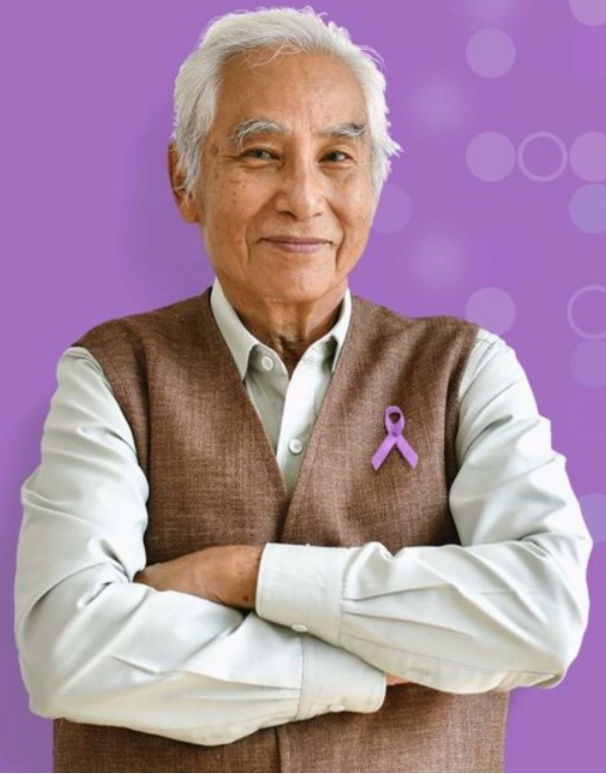
DKN-01 targets innate immunity by activating NK cells, reprogramming Macrophages and inhibiting MDSCs, thus setting the stage for an enhanced adaptive immune response by anti-PD-1.

Promotes a pro-inflammatory M1 macrophage phenotype.

DKN-01 sensitizes tumors to anti-PD-1 therapies through upregulation of PD-L1.

DKN-01

Gastric cancer development

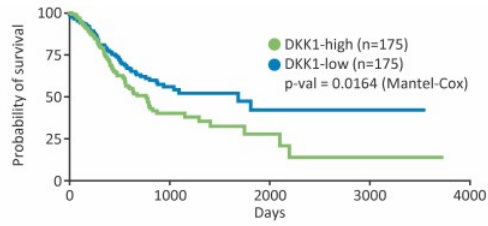


DKK1-high levels are associated with poor survival in gastric cancer

High levels of DKK1 correlate with shorter overall survival

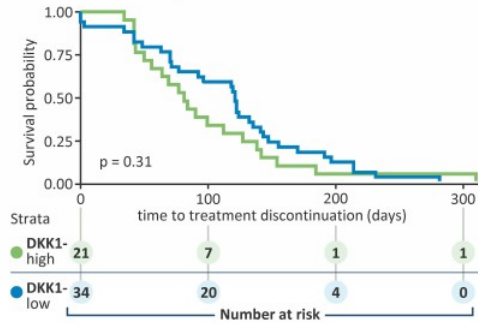
In gastric cancer

TCGA STAD dataset



DKK1-high is associated with poor response to first-line platinum + fluoropyrimidine based therapies in GEJ/gastric cancer patients

Collaboration with Tempus



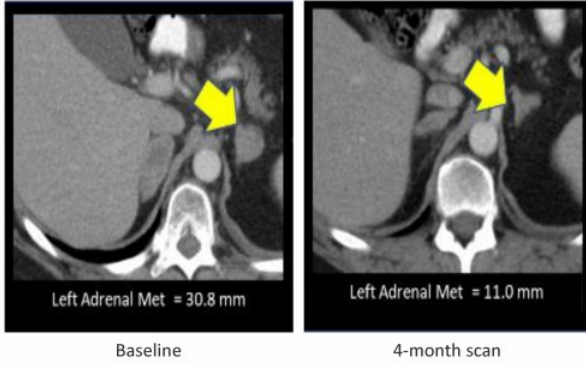
~2.5 years shorter OS in DKK1-high patients



DKN-01 single agent activity in heavily pretreated esophagogastric cancer patients

2L+ EGC
DKN-01

On Study 1 Year, Reduction -33.9%
Failed Prior anti-PD-L1 + IDOi



Best Overall Response
of 20 Evaluable Patients*

Partial Response	2
Stable Disease	6
Progressive Disease	12

2 Monotherapy PRs

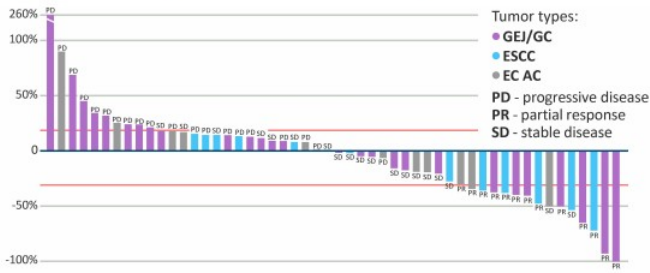
Clinical Benefit Rate
40%

leaptherapeutics

Clinical activity of DKN-01 plus paclitaxel or anti-PD-1 antibody

GEJ/GC
Historical data

DKN-01 + paclitaxel N=52
2L-8L esophagogastric pts



	Patients treated	Prior therapies	Overall response rate (ORR)	Disease control rate (DCR)
DKN-01 + paclitaxel	N=52	1-7	25%	60%

Strong broad activity in esophagogastric cancer in heavily pretreated patients

	Patients treated	PFS (months)	OS (months)	Overall response rate (ORR)	Disease control rate (DCR)
DKN-01 + paclitaxel	N=15	4.5	12.7	46.7%	73.3%

ORR in 2L patients is ~47%

DKN-01 + pembro N=31
2L+ GEJ/GC pts



location	Total (n)	PFS (mo)	OS (mo)	RE (n)	PR (n)	SD (n)	PD (n)	NE (n)	Overall response rate (ORR)	Disease control rate (DCR)
DKK1-high	n=11	5.1	7.3	10	5	3	2	1	5 (50%)	8 (80%)
DKK1-low	n=20	1.4	4	15	0	3	12	5	0 (0%)	3 (20%)

*DKK1-high ≥ upper tertile (35)

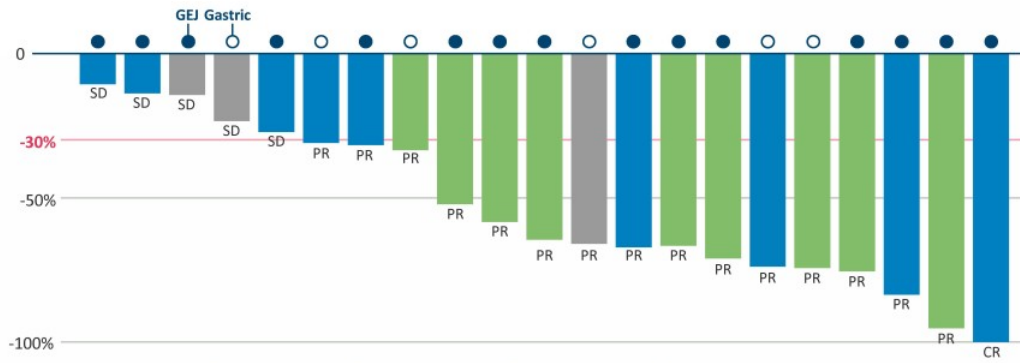
Achieved improved ORR, PFS, and OS in DKK1-high patients
Identified H-score threshold for DKK1 high/low expression



Response by DKK1 expression in first-line patients

1L GEJ/GC
 DKN-01
 + tislelizumab
 + chemotherapy

Best % change in sum of diameters



	mITT* population N=22	DKK1-high N=10	DKK1-low N=9	DKK1-unknown N=3	
CR - complete response	1 (5%)	0	1 (11%)	0	All 9 of the evaluable DKK1-high patients had a partial response
PR - partial response	15 (68%)	9 (90%)	5 (56%)	1 (33%)	
SD - stable disease	5 (23%)	0	3 (33%)	2 (67%)	1 PR went to curative surgery with pathological CR
PD - progressive disease	0	0	0	0	
NE - non-evaluable	1 (5%)	1 (10%)	0	0	

73%
 ORR
 in the mITT
 Population
 (1 CR; 15 PR)

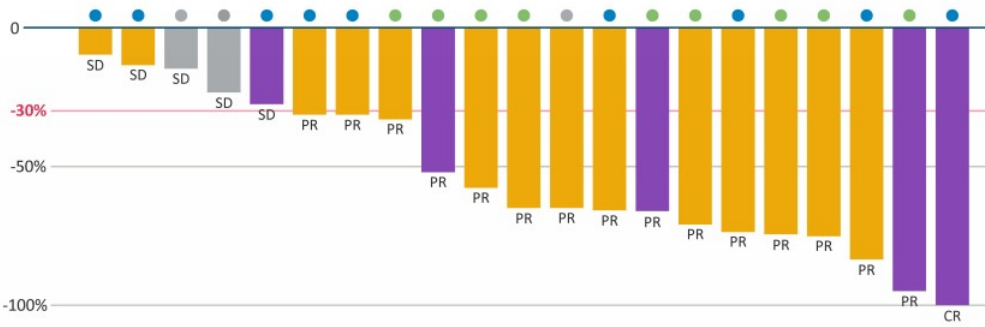


*mITT population includes all patients who received > 1 dose of DKN-01
 As presented at ASCO 2023

Response by PD-L1 expression

1L GEJ/GC
 DKN-01
 + tislelizumab
 + chemotherapy

Best % change in sum of diameters



	PD-L1 ↑ CPS ≥ 5		PD-L1 ↓ CPS < 5		
	DKK1-high N=4	DKK1-low N=2	DKK1-high N=6	DKK1-low N=7	DKK1-unknown N=1
CR - complete response	0	1 (50%)	0	0	0
PR - partial response	3 (75%)	0	6 (100%)	5 (71%)*	1 (100%)
SD - stable disease	0	1 (50%)	0	2 (29%)	0
PD - progressive disease	0	0	0	0	0
NE - non-evaluable	1 (25%)	0	0	0	0
	N=6 67% ORR		N=14 86% ORR		

vCPS: visually-estimated combined positive score; PD-L1: programmed death-ligand 1
 *Includes one pathologic CR
 As presented at ASCO 2023

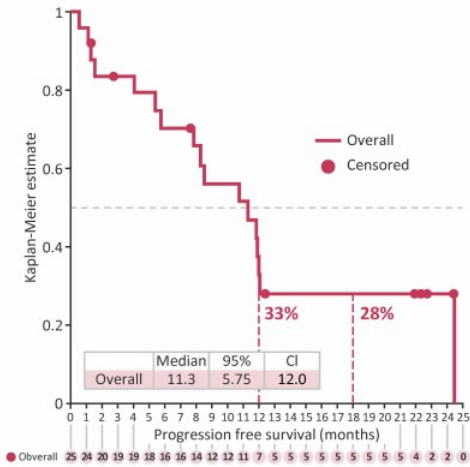
86%
 ORR in PD-L1
 low patients



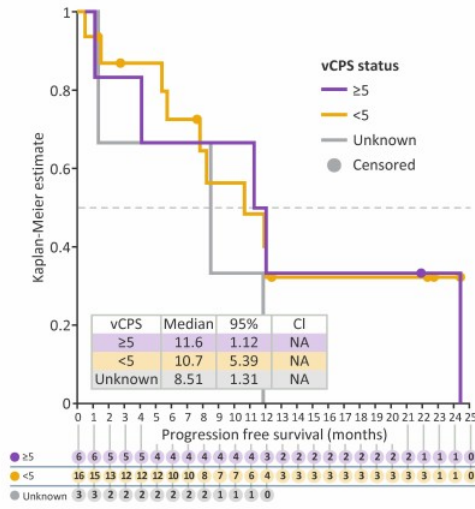
Progression-free survival

1L GEJ/GC
 DKN-01
 + tislelizumab
 + chemotherapy

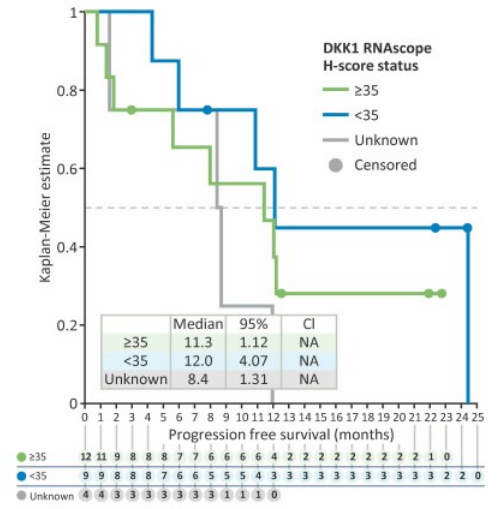
Overall Population



By PD-L1 Expression



By DKK1 Expression



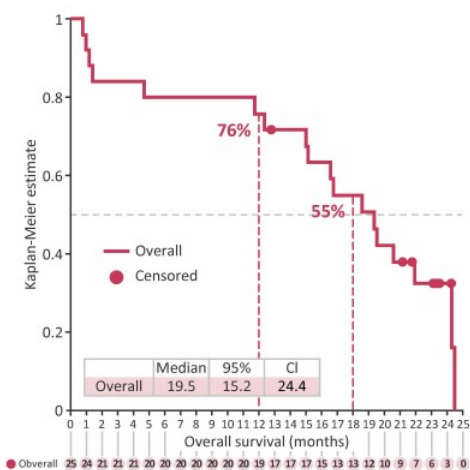
15 DKK1-high: H-score ≥35; | DKK1-low: H-score <35 | PD-L1: Programmed Death-Ligand 1 | vCPS: Visually-Estimated Combined Positive Score
 As presented at ASCO 2023



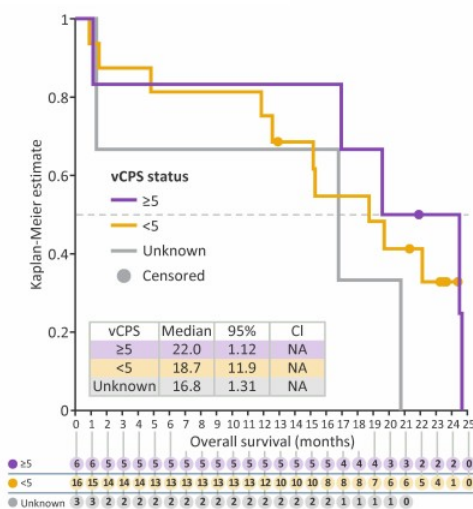
Overall survival

1L GEJ/GC
 DKN-01
 + tislelizumab
 + chemotherapy

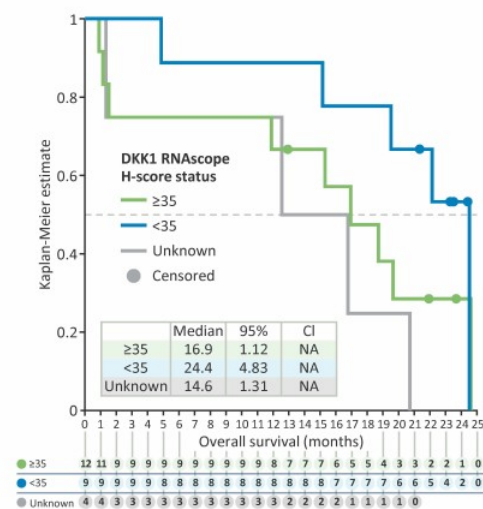
Overall Population



By PD-L1 Expression



By DKK1 Expression

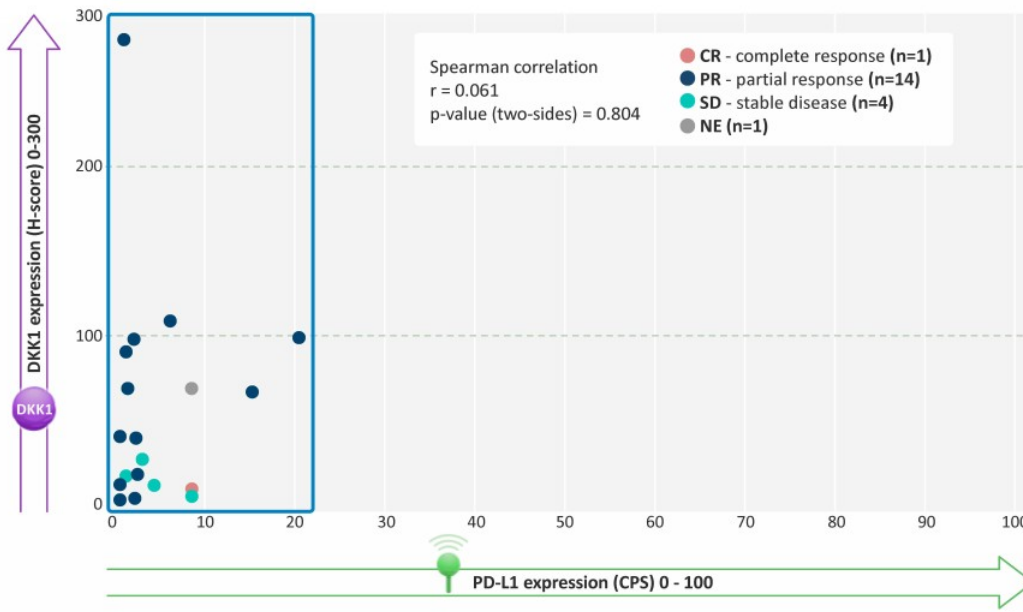


16 DKK1-high: H-score ≥35; | DKK1-low: H-score <35 | PD-L1: Programmed Death-Ligand 1 | vCPS: Visually-Estimated Combined Positive Score
 As presented at ASCO 2023



DKK1 and PD-L1 expression are not correlated

1L GEJ/GC
DKN-01
+ tislelizumab
+ chemotherapy



This population had low overall PD-L1 expression



Competitive benchmarks for anti-PD-1 + chemotherapy in 1L GEJ/GC patients








1L GEJ/GC
DKN-01
+ tislelizumab
+ chemotherapy



	Nivolumab		Tislelizumab		Pembrolizumab
	Checkmate-649 (All) N=789	Checkmate-649 PD-L1 \uparrow CPS \geq 5 N=473	Rationale-305 (All) N=501	Rationale-305 PD-L1 \uparrow CPS \geq 5 N=274	Keynote-859 (All) N=790
OS months (95% CI)	13.7 (12.4, 14.5)	14.4 (13.1, 16.2)	15.0 (13.6, 16.5)	16.4 (13.6, 19.1)	12.9 (11.9, 14.0)
DOR months (95% CI)	8.5 (7.7, 9.9)	9.6 (8.2, 12.4)	8.6 (7.9, 11.1)	9.0 (8.2, 19.4)	8.0 (7.0, 9.7)
PFS months (95% CI)	7.7 (7.1, 8.6)	8.3 (7.0, 9.3)	6.9 (5.7, 7.2)	7.2 (5.8, 8.4)	6.9 (6.3, 7.2)
ORR (%) (95% CI)	47% (43%, 50%)	50% (46%, 55%)	47.3% (42.9%, 51.8%)	50.4% (44.3%, 56.4%)	51.3% (47.7%, 54.8%)

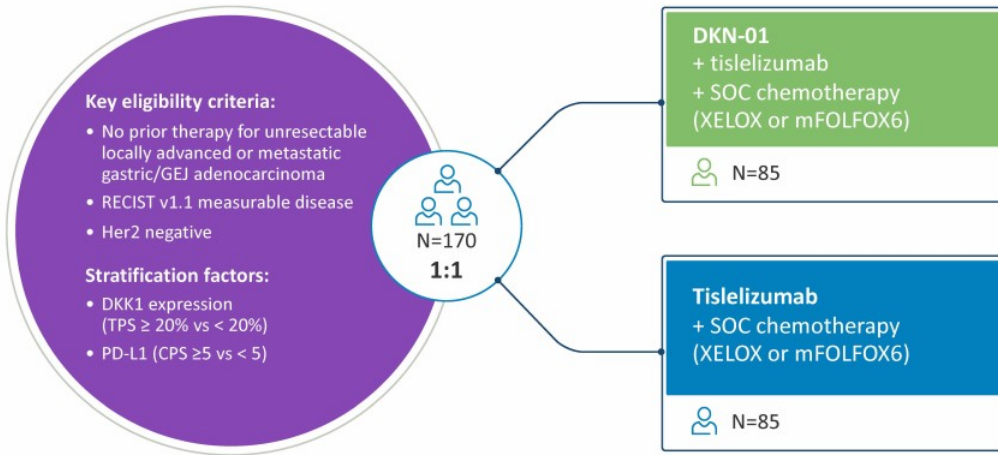
Rationale-305 study: tislelizumab + chemotherapy in 1L GEJ/GC patients

1L GEJ/GC
DKN-01
+ tislelizumab
+ chemotherapy

	All Patients			North America & Europe			PD-L1  CPS ≥ 5		
	Tislelizumab + Chemo  N= 501	Control  N= 496	HR (95% CI)	Tislelizumab + Chemo  N= 125	Control  N= 124	HR (95% CI)	Tislelizumab + Chemo  N= 274	Control  N= 272	HR (95% CI)
OS months (95% CI)	15.0 (13.6, 16.5)	12.9 (12.1, 14.1)	0.80 (0.70, 0.92)	11.0 (8.4, 13.9)	10.5 (8.1, 12.1)	0.71 (0.54, 0.94)	17.2 (13.9, 21.3)	12.6 (12.0, 14.4)	0.74 (0.59, 0.94)
DOR months (95% CI)	8.6 (7.9, 11.0)	7.2 (6.0, 8.5)		7.5 (4.4, 12.0)	5.0 (3.9, 6.7)		9.0 (8.2, 19.4)	7.1 (5.7, 8.3)	
PFS months (95% CI)	6.9 (5.7, 7.2)	6.2 (5.6, 6.9)	0.78 (0.67, 0.90)	5.6 (4.4, 7.0)	5.4 (4.3, 5.9)	0.84 (0.63, 1.11)	7.2 (5.8, 8.4)	5.9 (5.6, 7.0)	0.67 (0.55, 0.83)
ORR (%) (95% CI)	47.3% (42.9%, 51.8%)	40.5% (36.2%, 45.0%)		36.0% (27.6%, 45.1%)	31.5% (23.4%, 40.4%)		50.4% (44.3%, 56.4%)	43.0% (37.1%, 49.1%)	

DisTinGuish Part C randomized study

1L GEJ/GC
DKN-01
+ tislelizumab
+ chemotherapy



✓ **Primary objective:**
PFS, DKK-high and all

✓ **Secondary objectives:**

- OS, DKK1-high and all
- DOR, DKK1-high and all
- ORR, DKK1-high and all

leaptherapeutics

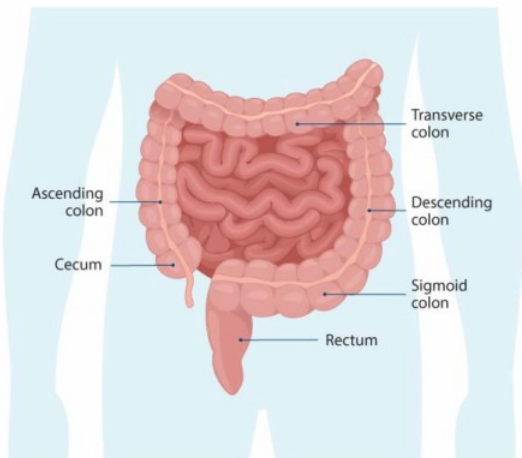
DKN-01

Colorectal cancer development



Rationale for targeting colorectal cancer with DKN-01

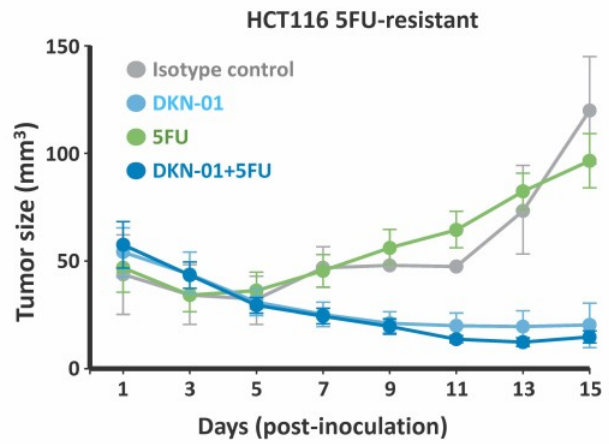
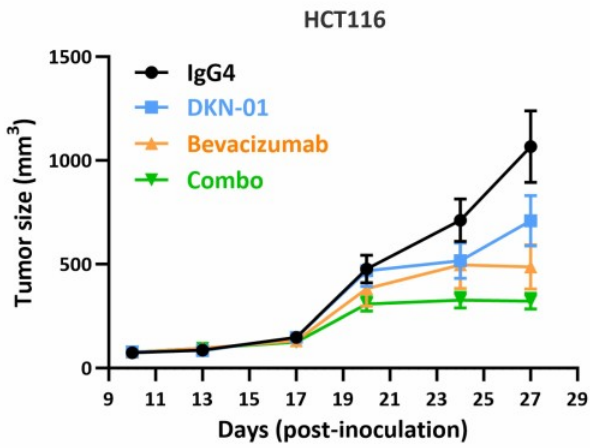
DKK1 expression is the highest in metastatic rectum



- CRC is characterized by hyperactivation of the Wnt pathway, often believed to be the initiating and driving event
 - Consensus Molecular Subtype 2 primarily in left-sided tumors
- DKK1 highest in metastatic rectum
- DKK1 drives resistance to 5FU chemotherapy
- Preclinically DKN-01 treatment:
 - Shows additive activity with 5FU and is able to overcome 5FU-resistance
 - Has activity alone and with an anti-VEGF antibody

DKN-01 has activity in CRC models in combination with bevacizumab or 5FU

- DKN-01 has efficacy in CRC syngeneic models including HCT116
- Additive activity was seen with bevacizumab
- In a 5FU chemotherapy-resistant model, DKN-01 demonstrates significant inhibition of tumor growth alone and with 5FU

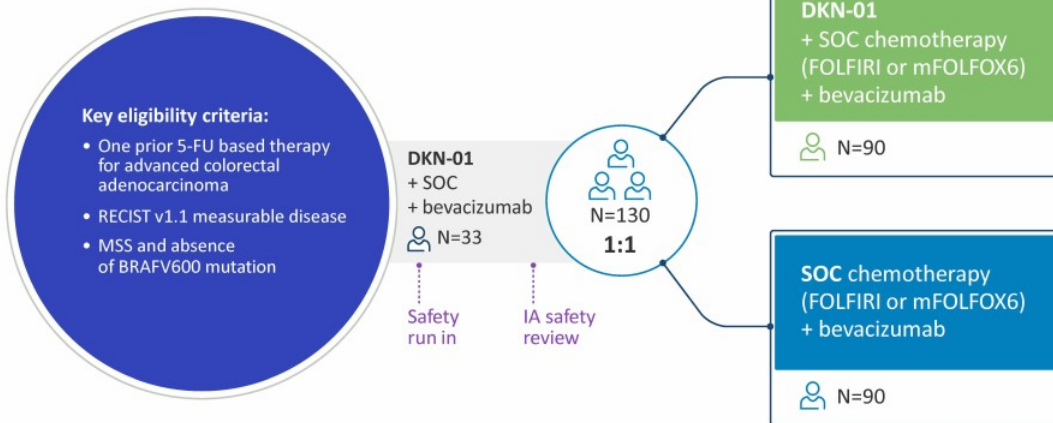


Data courtesy of Goel Lab at City of Hope Cancer Center

DeFianCe study design: advanced colorectal cancer

2L CRC
DKN-01
+ bevacizumab
+ chemotherapy

Randomized phase 2 study of FOLFIRI/FOLFOX and bevacizumab +/- DKN-01 as second-line treatment of advanced colorectal cancer



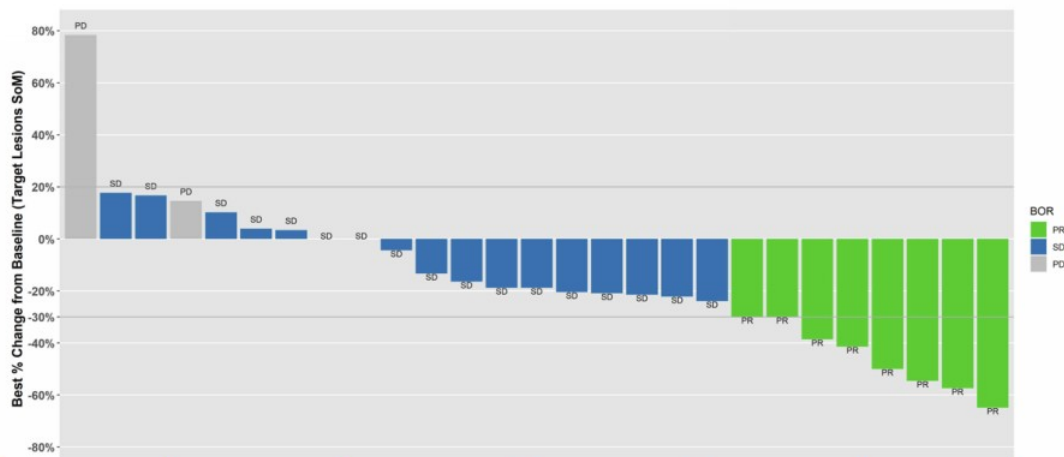
✓ **Primary objective:**
PFS, left-side and all

✓ **Secondary objectives:**

- ORR
- DoR
- OS

Overall response rate exceeded 20% target with high disease control rate

2L CRC
DKN-01
+ bevacizumab
+ chemotherapy



ORR in RE patients:
8/27 = 30%

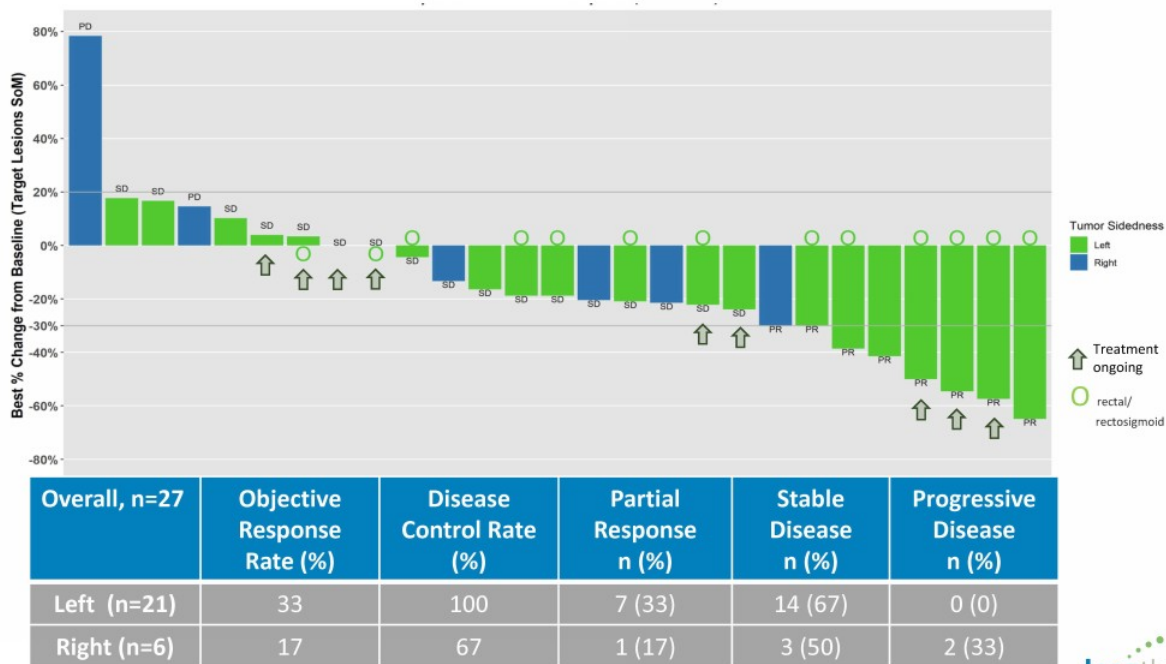
DCR in RE patients:
25/27 = 93%

	Objective Response Rate (%)	Disease Control Rate (%)	Partial Response n (%)	Stable Disease n (%)	Progressive Disease n (%)
Overall, n=27	30	93	8 (30)	17 (63)	2 (8)

Greater activity in left-sided tumors subgroup

2L CRC
DKN-01
+ bevacizumab
+ chemotherapy

- 9 patients who remain on study therapy are left-sided, 6 of whom are rectal/rectosigmoid patients

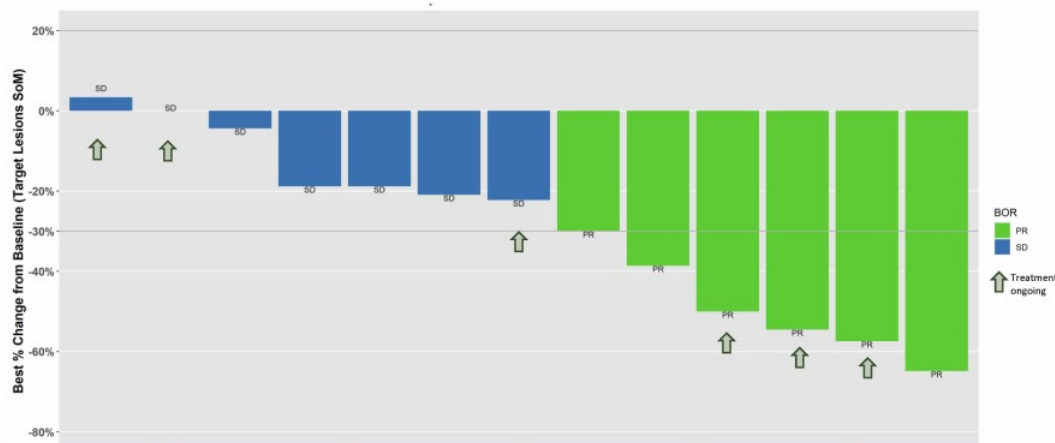


As presented at ASCO GI 2024



Enriched responses in rectal/rectosigmoid cancer patients

2L CRC
DKN-01
+ bevacizumab
+ chemotherapy



6 of the 8 responding patients were in the rectal/rectosigmoid subgroup

ORR RE: 46%

6 patients continue on therapy

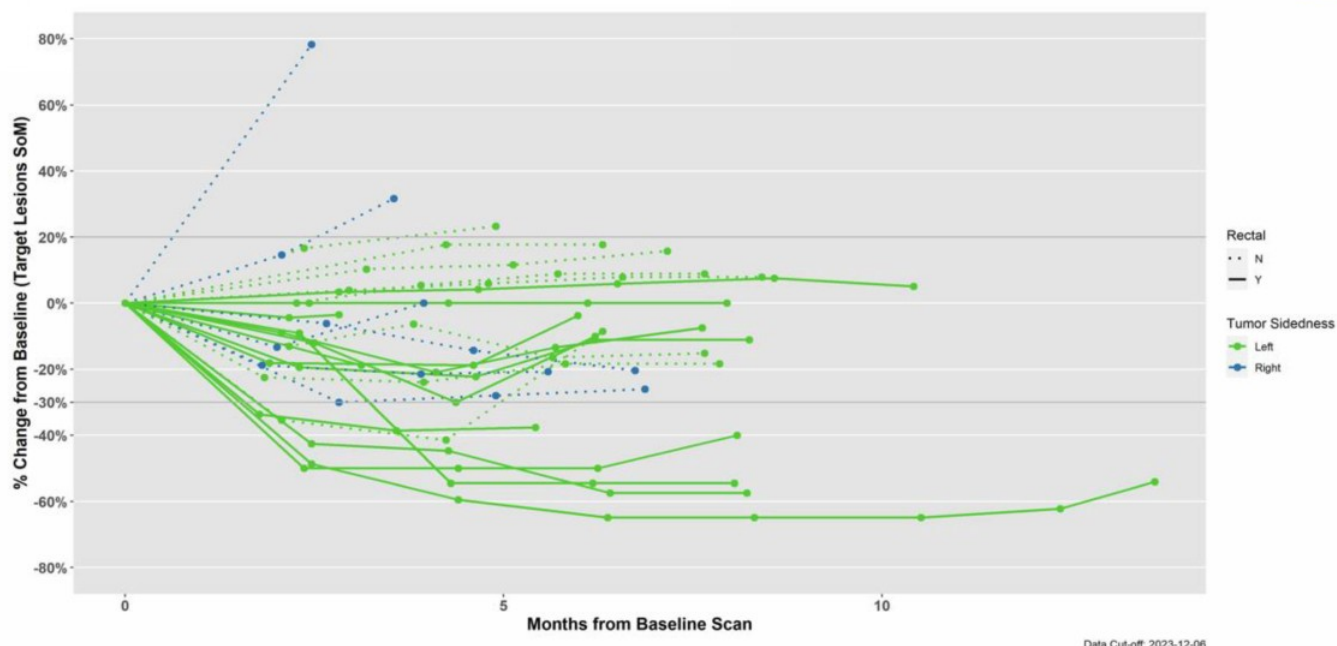
Overall, n=13	Objective Response Rate (%)	Disease Control Rate (%)	Partial Response n (%)	Stable Disease n (%)	Progressive Disease n (%)
Rectal	46	100	6 (46)	7 (54)	0 (0)

27 As presented at ASCO GI 2024



Duration of clinical benefit Tumor sidedness subgroup

2L CRC
DKN-01
+ bevacizumab
+ chemotherapy



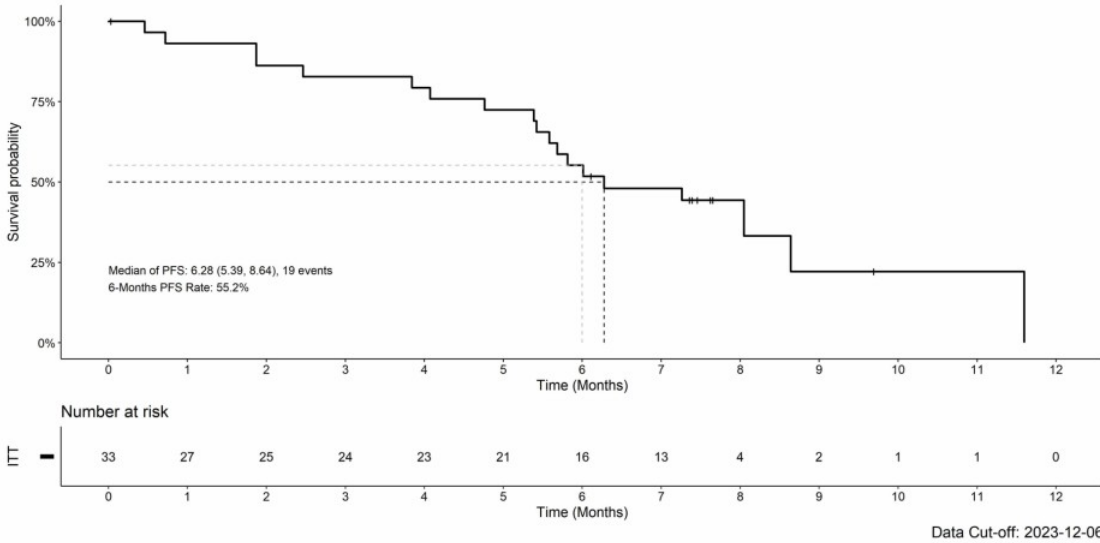
Data Cut-off: 2023-12-06



Progression-free survival

2L CRC
DKN-01
+ bevacizumab
+ chemotherapy

- Heterogeneous population included many unfavorable subgroups
- 9 patients remain on therapy at a minimum of 8.5 months on therapy



Median PFS:
6.3 months

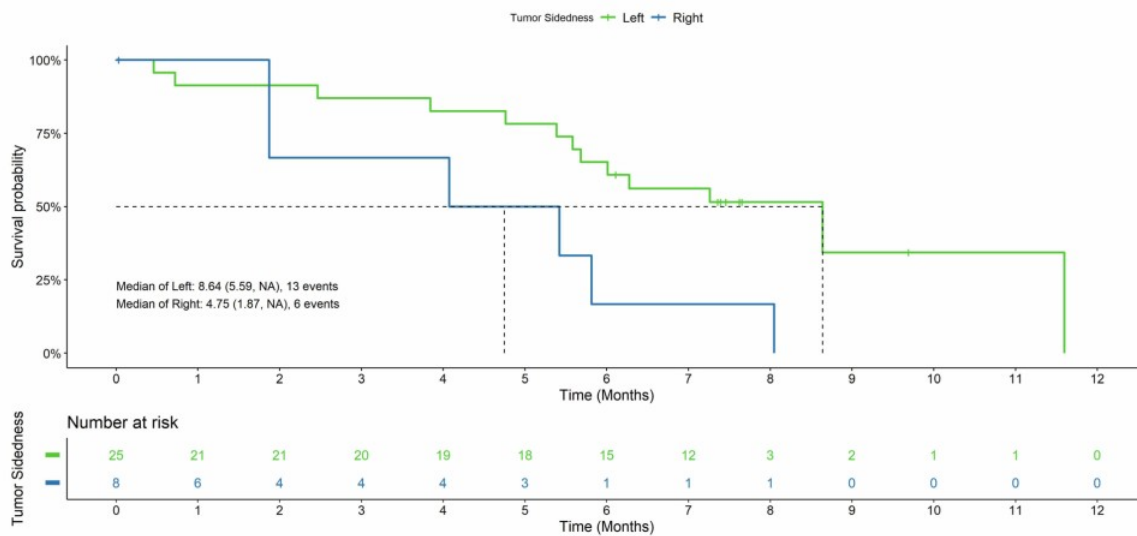
6-month PFS rate:
55.2%



Longer progression-free survival in patients with left-sided tumors

2L CRC
 DKN-01
 + bevacizumab
 + chemotherapy

- Preliminary median PFS in left-sided tumors: 8.6 months
- 9 left-sided tumor patients remain on therapy

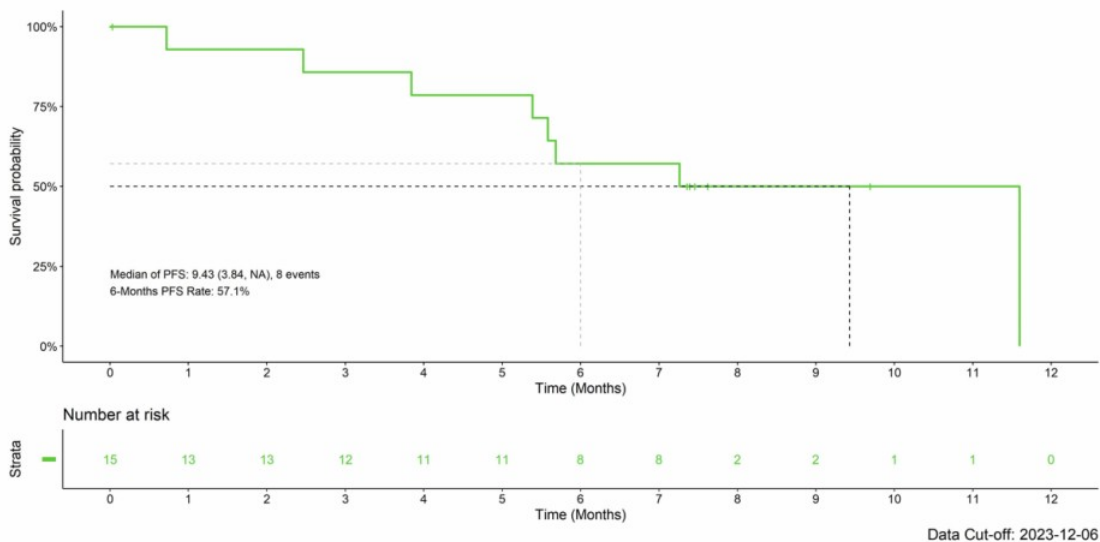


Data Cut-off: 2023-12-06



PFS still maturing with 6 patients continuing on therapy Rectal/rectosigmoid cancer subgroup

2L CRC
DKN-01
+ bevacizumab
+ chemotherapy



Preliminary median
PFS: 9.4 months

6-month PFS rate:
57.1%



DKN-01

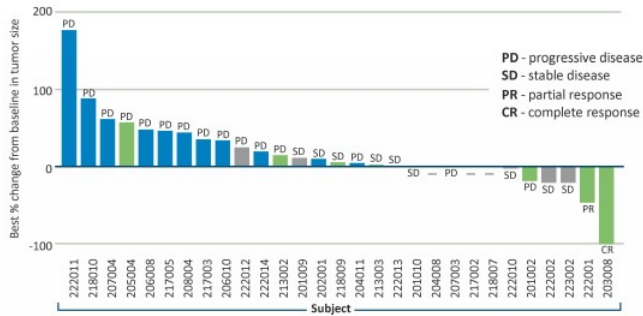
Endometrial cancer development



DKN-01 monotherapy - overall response by DKK1 tumoral expression

2L+ EEC
DKN-01
monotherapy

Overall response by DKK1 tumoral expression



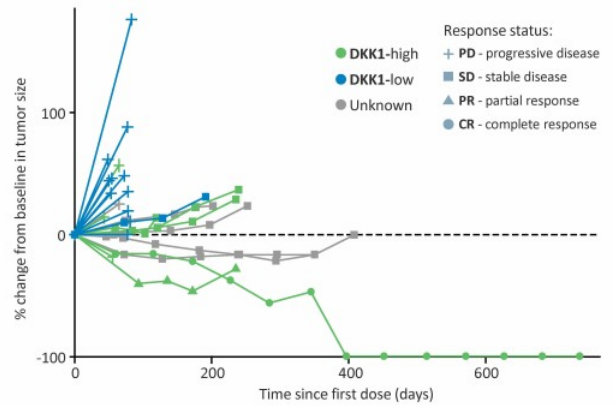
Status	Total	CR	PR	SD	PD	NE	ORR	DCR
DKK1-high (≥18)*	n=8	1	1	3	3	0	25%	63%
DKK1-low (<18)	n=15	0	0	1	11	3	0%	7%
Unknown	n=6	0	0	5	1	0	0%	83%

*H-score ≥ 18, upper tertile of overall study population

DKK1-high tumors have better ORR (25% vs. 0%) and clinical benefit (63% vs. 7%)

Patients with unknown DKK1 expression include 3 patients with durable SD and Wnt activating mutations

Durable clinical benefit in DKK1-high tumors



DKK1-high patients have longer progression-free survival (4.3 vs. 1.8 months [HR 0.26; 95 CI: 0.09, 0.75])



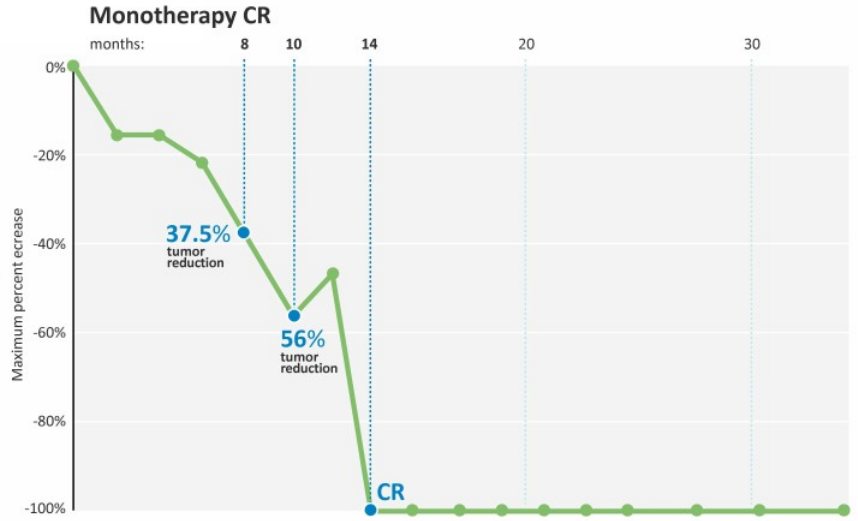
Complete response in endometrial cancer patient on DKN-01 monotherapy

2L+ EEC
DKN-01
monotherapy

- ✓ **Patient:**
60 yo female with recurrent endometrial cancer
- ✓ **Prior treatment:**
radiation and chemotherapy poorly tolerated (neuropathy and thrombocytopenia)
- ✓ **Baseline disease characteristics:**
MSI-H, TMB: 46.65
- ✓ **Genetics:**
ARID1A, PIK3CA; DKK1-high

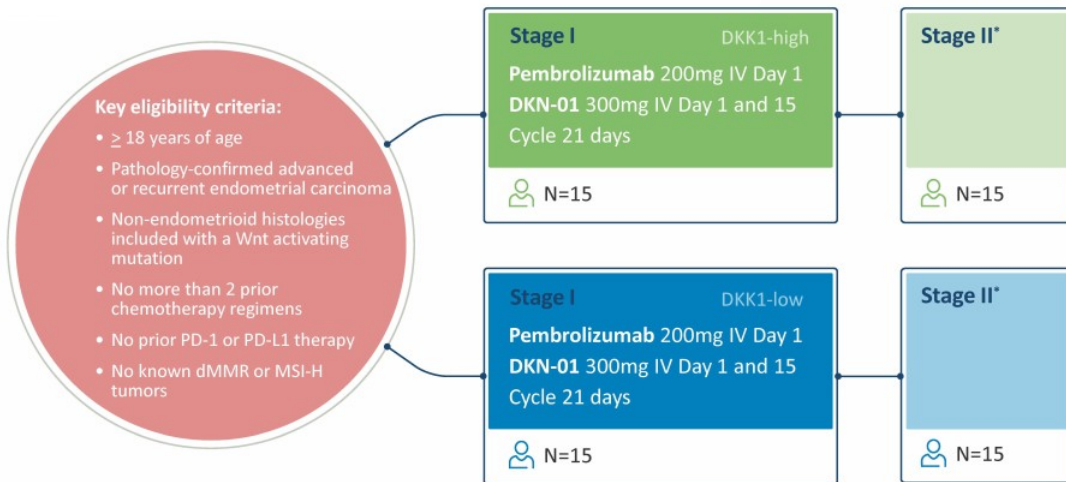
Treatment:
DKN-01 monotherapy

Enrolled in July 2018



DKN-01 plus pembrolizumab endometrial cancer study

2-3L EEC
DKN-01
+ pembrolizumab



✔ **Primary objective:**
Objective response rate (ORR)

✔ **Secondary objectives:**
Clinical benefit, PFS, OS, DOR

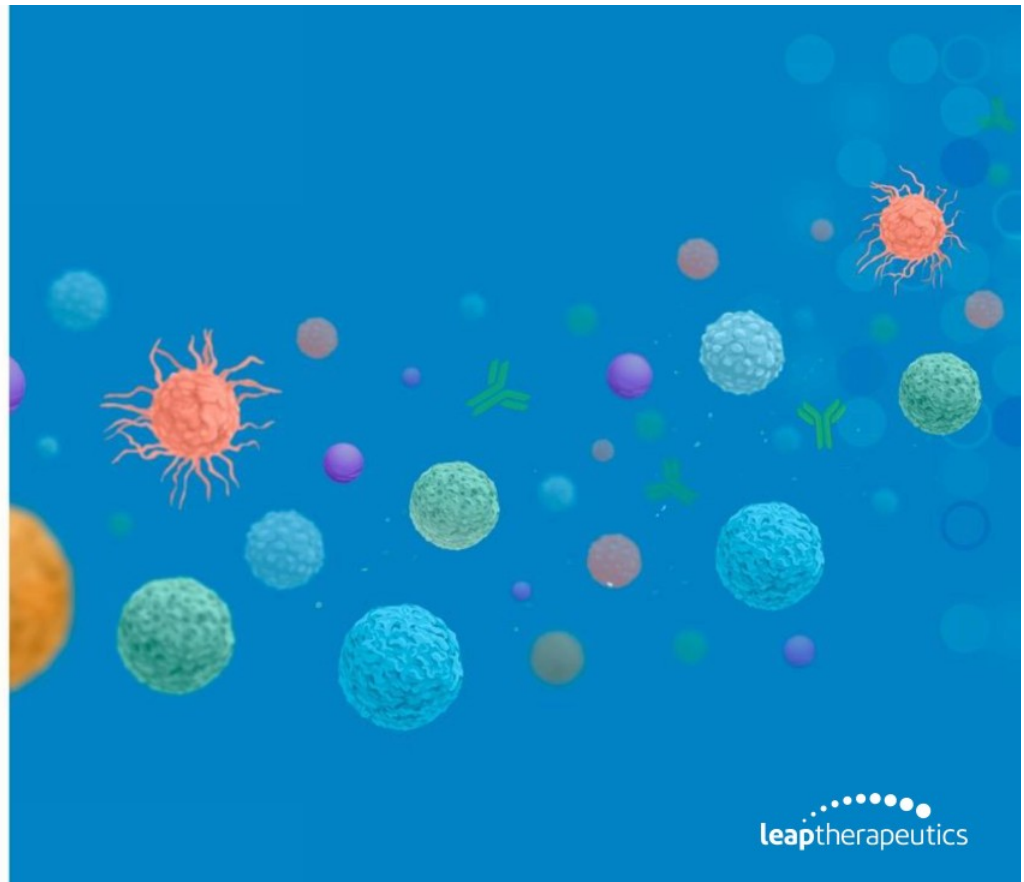
Open-label, phase 2 trial,
Bayesian optimal phase II design,
Investigator-initiated study with pembrolizumab supplied by Merck.

35 * Move to Stage II based on ORR in Stage I

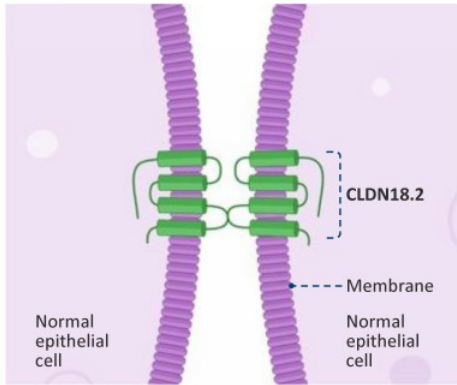


FL-301 (NBL-015)
FL-302 (NBL-016)

Anti-Claudin18.2
antibodies

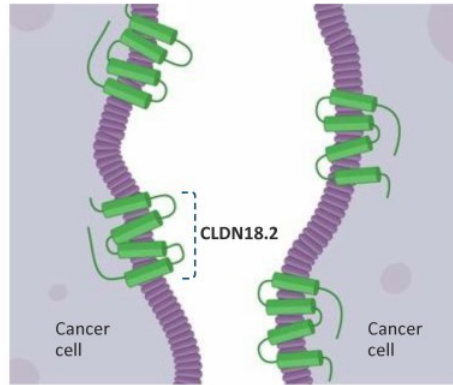


The role of Claudin18.2



Normal epithelial cells

- Regulates barrier properties and contributes to cell-to-cell adhesion.
- Expression very limited in normal tissue.
- Typically buried in the tight junction complex of gastric mucosal cells.



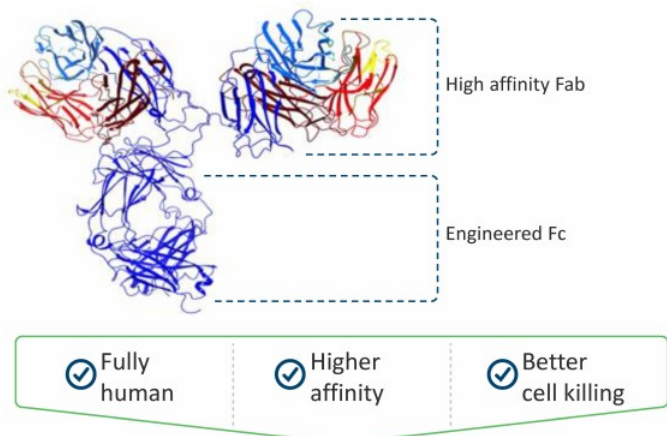
Cancer cells

- In cancer, cells lose their polarity and structure.
- CLDN18.2 is overexpressed.
- CLDN18.2 may be exposed and accessible as a target for cancer therapy.

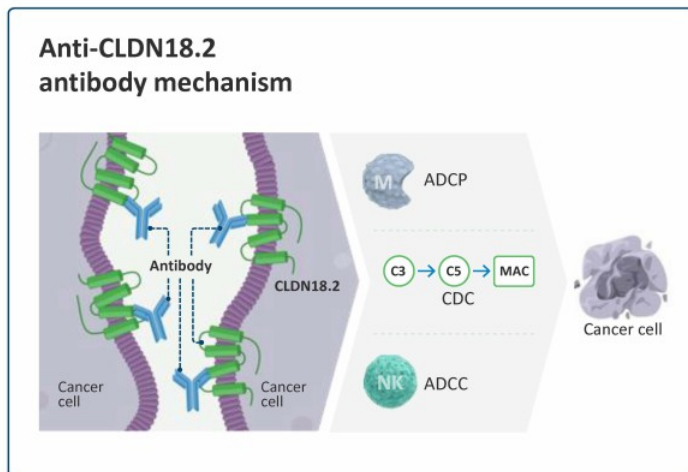
30-40%
of gastric cancer
patients have high
Claudin18.2
expression

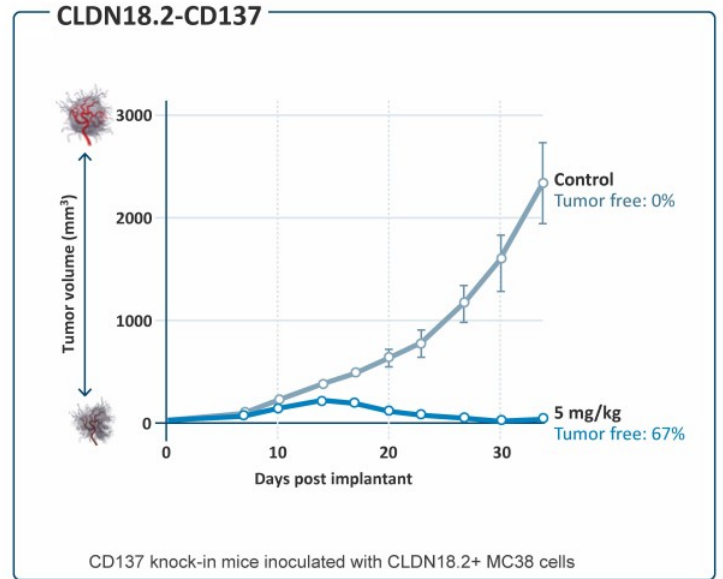
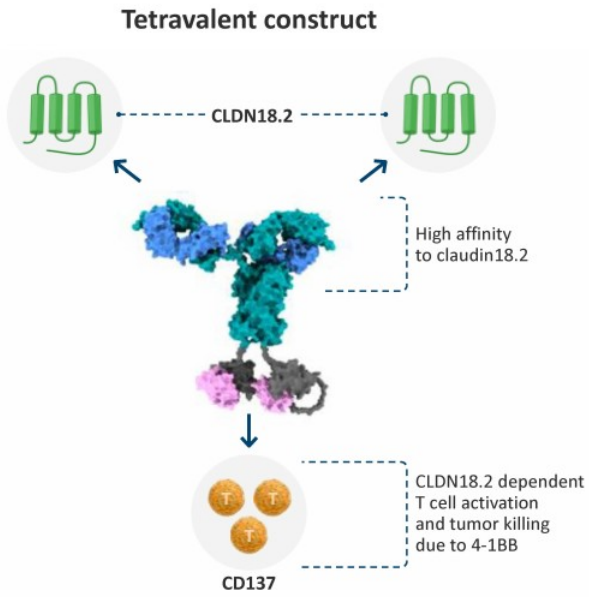
FL-301 (NBL-015) is a potential best-in-class anti-Claudin18.2 antibody with enhanced tumor killing efficacy

FL-301
CLDN18.2



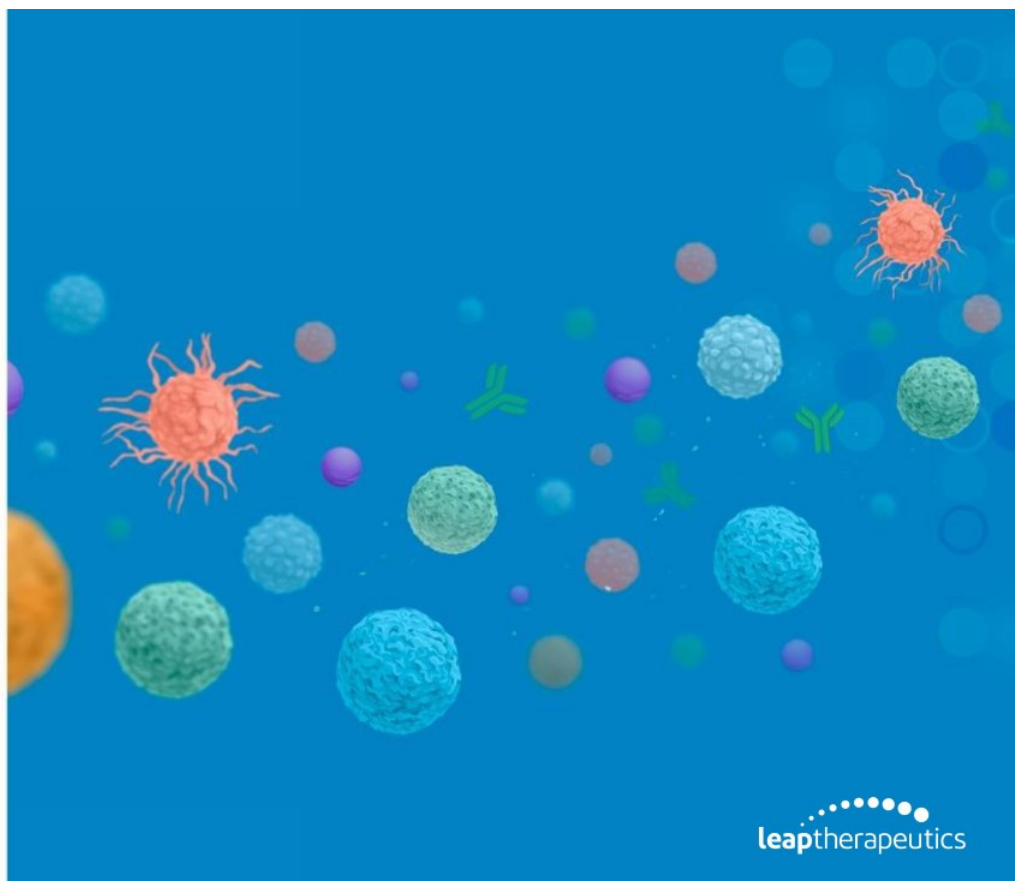
Efficacy could extend to patients with lower CLDN18.2 expression that other currently used anti-CLDN18.2 antibodies.



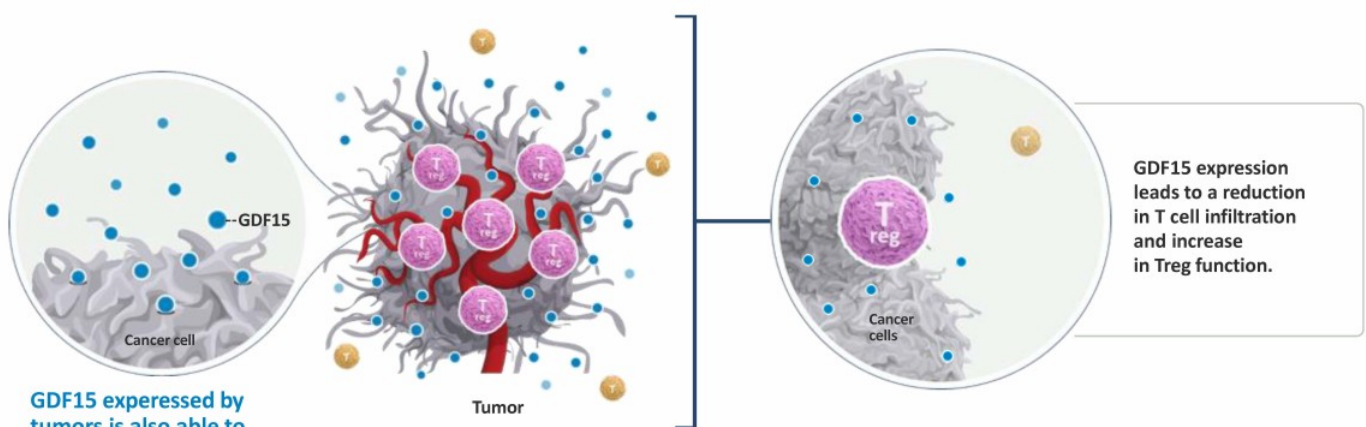


FL-501

Anti-GDF15 monoclonal antibody



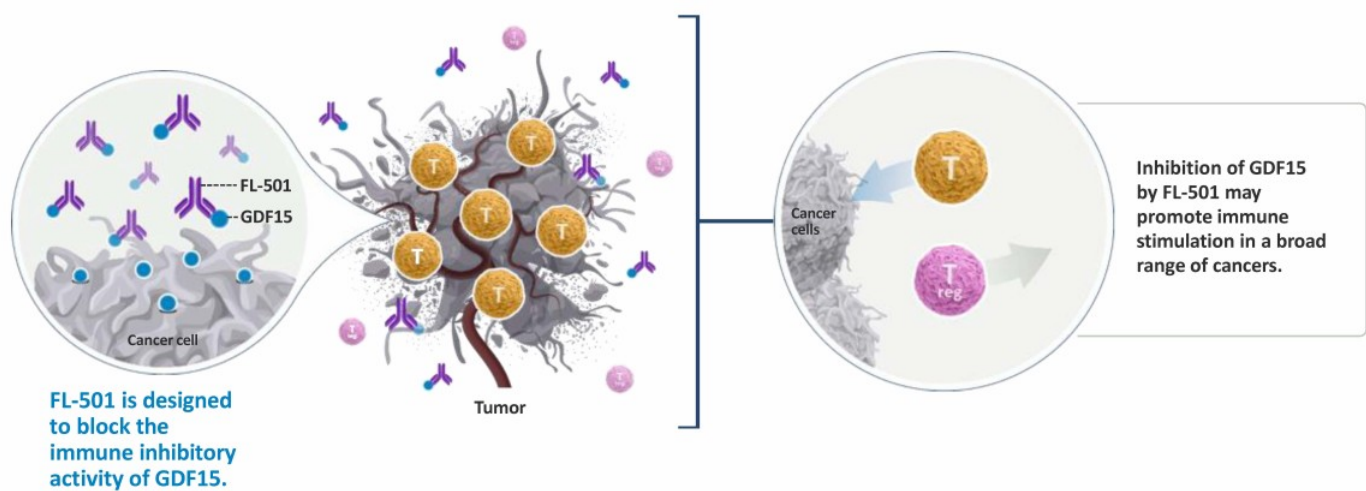
The role of GDF15 in cancer



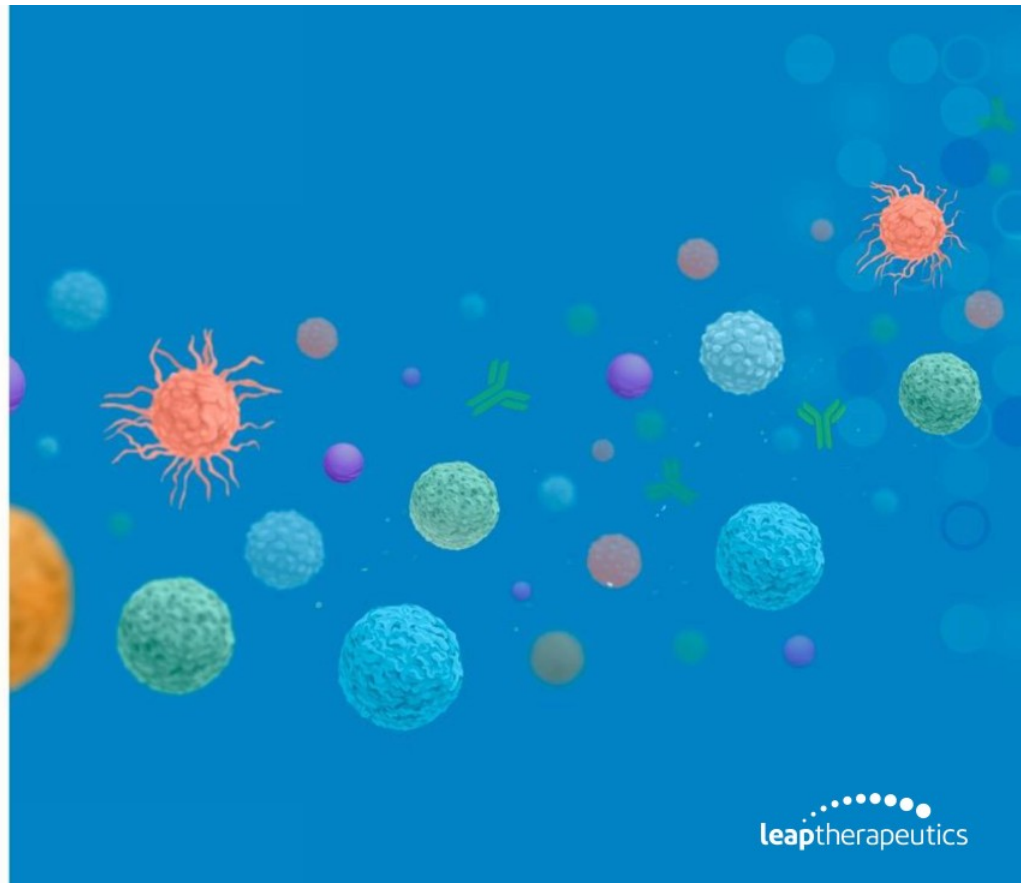
GDF15 expressed by tumors is also able to drive cancer progression by promoting an immunosuppressive tumor microenvironment.

GDF15 expression leads to a reduction in T cell infiltration and increase in Treg function.

FL-501 mechanism of action



CORPORATE



Management team



Christopher Mirabelli, PhD
Chairman of the board



Gus Lawlor
Chief operating officer



Cyndi Sirard, MD
Chief medical officer



Mark O'Mahony
Chief manufacturing officer



Douglas Onsi
President & chief executive officer



Walter Newman, PhD
Senior research fellow



Jason Baum, PhD
Chief scientific officer



Christine Granfield
Vice president, head of regulatory affairs and quality



DKN-01 clinical milestones 2024-2025

