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

SCHEDULE TO

TENDER OFFER STATEMENT UNDER SECTION 14(D)(1) OR 13(E)(1)
OF THE SECURITIES EXCHANGE ACT OF 1934

DICERNA PHARMACEUTICALS, INC.
(Name of Subject Company (Issuer))

NNUS NEW RESEARCH, INC.
an indirect wholly owned subsidiary of

NOVO NORDISK A/S
(Names of Filing Persons (Offeror))

Common Stock, Par Value $0.0001 Per Share
(Title of Class of Securities)

253031108
(Cusip Number of Class of Securities)

Tomas Haagen
General Counsel
Novo Nordisk A/S
Novo Allé, DK- 2880, Bagsvaerd
Denmark
Telephone: +45 4444 8888
(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications on Behalf of Filing Persons)

Copy to:

William H. Aaronson
Davis Polk & Wardwell LLP
450 Lexington Avenue
New York, NY 10017
(212) 450-4000

CALCULATION OF FILING FEE

Transaction Valuation*	Amount of Filing Fee**
3,234,126,302.44	299,803.51

* Solely for the purpose of calculating the filing fee, the underlying value of the transaction was calculated based on the sum of (a) the product of 75,849,396 shares of common stock (calculated as 78,129,378 shares of common stock issued and outstanding less 2,279,982 shares of common stock owned by Novo Nordisk A/S) and $38.25 per share; (b) the product of 13,418,179 shares of common stock underlying outstanding options and $21.61, which is the difference between $38.25 and the weighted average exercise price of $16.64 per share of the underlying outstanding stock options; (c) the product of 1,122,093 shares of common stock underlying outstanding restricted stock unit awards and $38.25 per share. The calculation of the filing fee is based on information provided by the Company as of November 22, 2021.

** The filing fee was calculated in accordance with Rule 0-11 under the Securities Exchange Act of 1934, as amended, and Fee Rate Advisory No. 1 for Fiscal Year 2022, issued August 23, 2021 and effective October 1, 2021, by multiplying the transaction value by 0.0000927.

☐ Check box if any part of the fee is offset as provided by Rule 0-11(a)(2) and identify the filing with which the offsetting fee was previously paid. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

Amount Previously Paid: None
Form or Registration No.: Not applicable
Filing Party: Not applicable
Date Filed: Not applicable

☐ Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer.

Check the appropriate boxes below to designate any transactions to which the statement relates:

- ☒ third-party tender offer subject to Rule 14d-1.
- ☐ issuer tender offer subject to Rule 13e-4.
- ☐ going-private transaction subject to Rule 13e-3.
- ☐ amendment to Schedule 13D under Rule 13d-2.

Check the following box if the filing is a final amendment reporting the results of the tender offer. ☐

This Tender Offer Statement on Schedule TO (this "Schedule TO") relates to the offer by NNUS New Research, Inc., a Delaware corporation ("Purchaser"), and Novo Nordisk A/S, a Danish *aktieselskab* ("Parent"), to purchase all outstanding shares of common stock, $0.0001 par value per share ("Shares"), of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the "Company"), at a price of $38.25 per Share, net to the holder in cash, without interest and subject to any withholding of taxes, upon the terms and subject to the conditions described in the Offer to Purchase dated November 24, 2021 (together with any amendments or supplements thereto, the "Offer to Purchase") and in the accompanying Letter of Transmittal (together with any amendments or supplements thereto and with the Offer to Purchase, the "Offer"), which are annexed to and filed with this Schedule TO as Exhibits (a)(1)(A) and (a)(1)(B), respectively. Purchaser is a wholly owned indirect subsidiary of Parent. This Schedule TO is being filed on behalf of Parent and Purchaser. Unless otherwise indicated, references to sections in this Schedule TO are references to sections of the Offer to Purchase. A copy of the Agreement and Plan of Merger, dated as of November 17, 2021, among the Company, Parent and Purchaser is attached as Exhibit (d)(1) hereto and incorporated herein by reference with respect to Items 4 through 11 of this Schedule TO.

ITEM 1.SUMMARY TERM SHEET.

The information set forth in the section of the Offer to Purchase titled "Summary Term Sheet" is incorporated herein by reference.

ITEM 2.SUBJECT COMPANY INFORMATION.

(a) The subject company and the issuer of the securities subject to the Offer is Dicerna Pharmaceuticals, Inc. Its principal executive office is located at 33 Hayden Avenue, Lexington, MA 02421, and its telephone number is 617-621-8097.

(b) This Schedule TO relates to Shares. According to the Company, as of the close of business on November 22, 2021, there were (i) 78,129,378 Shares issued and outstanding (ii) 13,418,179 Shares subject to issuance pursuant to outstanding options to acquire Shares and (iii) 1,122,093 Shares underlying outstanding restricted stock unit awards.

(c) The information concerning the principal market, if any, in which the Shares are traded and certain high and low sales prices for the Shares in the principal market in which the Shares are traded set forth in Section 6—"Price Range of Shares; Dividends" of the Offer to Purchase is incorporated herein by reference.

ITEM 3.IDENTITY AND BACKGROUND OF FILING PERSON.

(a) - (c) The filing companies of this Schedule TO are (i) Parent and (ii) Purchaser. Each of Purchaser's and Parent's principal executive office is located at c/o Novo Nordisk A/S, Novo Allé, DK-2880, Bagsvaerd, Denmark, and the telephone number of each is +45 4444-8888. The information regarding Purchaser and Parent set forth in Section 9—"Certain Information Concerning Parent and Purchaser" and Schedule A of the Offer to Purchase is incorporated herein by reference.

ITEM 4.TERMS OF THE TRANSACTION.

The information set forth in the Offer to Purchase is incorporated herein by reference.

ITEM 5.PAST CONTACTS, TRANSACTIONS, NEGOTIATIONS AND AGREEMENTS.

(a), (b) The information set forth in Section 8—"Certain Information Concerning the Company," Section 9—"Certain Information Concerning Parent and Purchaser," Section 10—"Background of the Offer; Contacts with the Company," Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements" and Schedule A of the Offer to Purchase is incorporated herein by reference.

ITEM 6.PURPOSES OF THE TRANSACTION AND PLANS OR PROPOSALS.

(a), (c)(1) - (7) The information set forth in the sections of the Offer to Purchase titled “Summary Term Sheet” and “Introduction” and in Section 6—“Price Range of Shares; Dividends,” Section 7—“Possible Effects of the Offer on the Market for the Shares; NASDAQ Listing; Exchange Act Registration and Margin Regulations” and Section 11—“Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements” of the Offer to Purchase is incorporated herein by reference.

ITEM 7.SOURCE AND AMOUNT OF FUNDS OR OTHER CONSIDERATION.

(a), (d) The information set forth in the section of the Offer to Purchase titled “Summary Term Sheet” and in Section 12—“Source and Amount of Funds” of the Offer to Purchase is incorporated herein by reference.

(b) The Offer is not subject to a financing condition.

ITEM 8.INTEREST IN SECURITIES OF THE SUBJECT COMPANY.

The information set forth in Section 9—“Certain Information Concerning Parent and Purchaser,” Section 11—“Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements” and Schedule A of the Offer to Purchase is incorporated herein by reference.

ITEM 9.PERSONS/ASSETS RETAINED, EMPLOYED, COMPENSATED OR USED.

(a) The information set forth in Section 3—“Procedures for Tendering Shares,” Section 10—“Background of the Offer; Contacts with the Company” and Section 16—“Fees and Expenses” of the Offer to Purchase is incorporated herein by reference.

ITEM 10.FINANCIAL STATEMENTS.

Not applicable. In accordance with the instructions to Item 10 of the Schedule TO, the financial statements are not considered material because:

(a) the consideration offered consists solely of cash;

(b) the Offer is not subject to any financing condition; and

(c) the Offer is for all outstanding securities of the subject class.

ITEM 11.ADDITIONAL INFORMATION.

(a) The information set forth in Section 7—“Possible Effects of the Offer on the Market for the Shares; NASDAQ Listing; Exchange Act Registration and Margin Regulations,” Section 10—“Background of the Offer; Contacts with the Company,” Section 11—“Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements” and Section 15—“Certain Legal Matters; Regulatory Approvals” of the Offer to Purchase is incorporated herein by reference.

(c) The information set forth in the Offer to Purchase is incorporated herein by reference.

ITEM 12.EXHIBITS.

Index No.	
(a)(1)(A)*	Offer to Purchase, dated November 24, 2021.*
(a)(1)(B)*	Form of Letter of Transmittal.*
(a)(1)(C)*	Form of Letter to Brokers, Dealers, Commercial Banks, Trust Companies and Other Nominees.*

Index No.	
(a)(1)(D)*	Form of Letter to Clients for Use by Brokers, Dealers, Commercial Banks, Trust Companies and Other Nominees.*
(a)(1)(E)*	Form of Summary Advertisement, published November 24, 2021 in *The New York Times*.*
(a)(5)(A)	Press Release issued by Parent, dated November 18, 2021 (incorporated by reference to the Tender Offer Statement on Schedule TO-C of Parent and Purchaser filed with the Securities and Exchange Commission on November 18, 2021)
(a)(5)(B)	Social media posts by Parent or its representatives on November 18, 2021 (incorporated by reference to the Tender Offer Statement on Schedule TO-C of Parent and Purchaser filed with the Securities and Exchange Commission on November 18, 2021).
(b)	Not applicable.
(d)(1)	Agreement and Plan of Merger, dated November 17, 2021, among the Company, Parent and Purchaser (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed by the Company with the Securities and Exchange Commission on November 18, 2021).
(d)(2)*	Confidentiality Agreement, dated as of October 27, 2021, by and between the Company and Parent.*
(d)(3)	Collaboration and License Agreement, dated November 15, 2019, by and between the Company and Parent (incorporated by reference to Exhibit 10.47 to the Current Report on Form 10-K filed by the Company with the Securities and Exchange Commission on February 28, 2020).
(d)(4)	Share Issuance Agreement, dated November 15, 2019, by and between the Company and Parent (incorporated by reference to Exhibit 10.48 to the Current Report on Form 10-K filed by the Company with the Securities and Exchange Commission on February 28, 2020).
(d)(5)*	Mutual Confidentiality Agreement, dated as of August 14, 2018, between the Company and Parent.*
(d)(6)*	First Amendment to Mutual Confidentiality Agreement, dated as of August 14, 2019, between the Company and Parent.*
(d)(7)*	Confidential Disclosure Agreement, dated as of March 9, 2021, dated as of August 14, 2019, between the Company and Parent.*
(g)	Not applicable.
(h)	Not applicable.

* Filed herewith.

ITEM 13.INFORMATION REQUIRED BY SCHEDULE 13E-3.

Not applicable.

SIGNATURE

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: November 24, 2021

NNUS NEW RESEARCH, INC.

By: /s/ Ulrich Christian Otte
Name: Ulrich Christian Otte
Title: *President*

NOVO NORDISK A/S

By: /s/ Karsten Munk Knudsen
Name: Karsten Munk Knudsen
Title: *Executive Vice President and Chief Financial Officer*

Offer to Purchase
All Outstanding Shares of Common Stock
of

DICERNA PHARMACEUTICALS, INC.

at
$38.25 Net Per Share in Cash
by

NNUS NEW RESEARCH, INC.

an indirect wholly owned subsidiary of

NOVO NORDISK A/S

THE OFFER AND WITHDRAWAL RIGHTS WILL EXPIRE AT ONE MINUTE AFTER 11:59 P.M., EASTERN TIME, ON DECEMBER 22, 2021, UNLESS THE OFFER IS EXTENDED OR EARLIER TERMINATED.

NNUS New Research, Inc., a Delaware corporation ("Purchaser"), is offering to purchase all outstanding shares of common stock, par value $0.0001 per share ("Shares"), of Dicerna Pharmaceuticals Inc., a Delaware corporation (the "Company"), at a price per Share of $38.25, net to the holder in cash (the "Offer Price"), without interest, and subject to any withholding of taxes, upon the terms and subject to the conditions described in this Offer to Purchase (together with any amendments or supplements hereto, this "Offer to Purchase") and in the related Letter of Transmittal (together with any amendments or supplements thereto, the "Letter of Transmittal" and, together with the Offer to Purchase, the "Offer"). Purchaser is an indirect wholly owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab* ("Parent"). The Offer is being made in connection with the Agreement and Plan of Merger, dated as of November 17, 2021 (together with any amendments or supplements thereto, the "Merger Agreement"), among the Company, Parent and Purchaser, pursuant to which, after the completion of the Offer and the satisfaction or waiver of certain conditions, Purchaser will be merged with and into the Company, without a vote of the Company's stockholders in accordance with Section 251(h) of the General Corporation Law of the State of Delaware (the "DGCL"), and the Company will be the surviving corporation and an indirect wholly owned subsidiary of Parent (such corporation, the "Surviving Corporation" and such merger, the "Merger"). At the effective time of the Merger, all then outstanding Shares (other than (i) Shares held by the Company (or held in the treasury of the Company), (ii) Shares held by Parent, Purchaser or any other direct or indirect wholly owned subsidiary of Parent and the Company and (iii) Shares held by stockholders who are entitled to appraisal rights under Section 262 of the DGCL and have properly exercised and perfected their demands for appraisal of such Shares in the time and manner provided in Section 262 of the DGCL and have neither withdrawn nor lost such rights as of the effective time of the Merger), will be converted into the right to receive consideration equal to the Offer Price, net to the holder in cash, without interest and subject to any applicable withholding of taxes.

After careful consideration, the board of directors of the Company (the "Company Board") has unanimously (i) determined that the Merger Agreement and the transactions contemplated by, the Merger Agreement, including the Offer and the Merger (the "Transactions"), are fair to, and in the best interest of, the Company and its stockholders, (ii) declared it advisable to enter into the Merger Agreement, (iii) approved the execution, delivery and performance by the Company of the Merger Agreement and the consummation of the Transactions, including the Offer and the Merger, (iv) agreed that the Merger will be effected under Section 251(h) of the DGCL and (v) resolved to recommend that the stockholders of the Company tender their Shares to Purchaser pursuant to the Offer (the preceding clauses (i) through (v), the "Company Board Recommendation").

There is no financing condition to the Offer. The Offer is subject to customary conditions. See Section 13—"Conditions of the Offer." A summary of the principal terms of the Offer appears on pages 1 through 7 of this Offer to Purchase. You should read this entire document carefully before deciding whether to tender your Shares.

November 24, 2021

IMPORTANT

If you desire to tender all or any portion of your Shares to us pursuant to the Offer, you should (i) if you hold your Shares directly as the registered owner, complete and sign the Letter of Transmittal for the Offer, which is enclosed with this Offer to Purchase, in accordance with the instructions contained in the Letter of Transmittal, mail or deliver the Letter of Transmittal and any other required documents to American Stock Transfer & Trust Company, LLC (the "Depository"), and either deliver the certificates for your Shares to the Depository along with the Letter of Transmittal or tender your Shares by book-entry transfer by following the procedures described in Section 3—"Procedures for Tendering Shares" of this Offer to Purchase, in each case prior to the expiration of the Offer, or (ii) if you hold your Shares in street name, request that your broker, dealer, commercial bank, trust company or other nominee effect the transaction for you prior to the expiration of the Offer. If you hold Shares registered in the name of a broker, dealer, commercial bank, trust company or other nominee you must contact that institution in order to tender your Shares to us pursuant to the Offer.

We are not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository.

* * *

Questions and requests for assistance may be directed to D.F. King & Co., Inc. (the "Information Agent"), at its address and telephone number set forth on the back cover of this Offer to Purchase. Requests for additional copies of this Offer to Purchase, the Letter of Transmittal and other tender offer materials may be directed to the Information Agent. You may also contact your broker, dealer, commercial bank, trust company or other nominee for assistance.

This Offer to Purchase and the Letter of Transmittal contain important information, and you should read both carefully and in their entirety before making any decision with respect to the Offer.

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SUMMARY TERM SHEET

NNUS New Research, Inc., a recently formed Delaware corporation ("Purchaser") and an indirect wholly owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab* ("Parent"), is offering to purchase all outstanding shares of common stock, par value $0.0001 per share (the "Shares"), of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the "Company"), at a price per Share of $38.25, net to the holder in cash (the "Offer Price"), without interest and subject to any withholding of taxes, upon the terms and subject to the conditions set forth in this Offer to Purchase (together with any amendments or supplements hereto, this "Offer to Purchase") and in the related Letter of Transmittal (together with any amendments or supplements thereto, the "Letter of Transmittal" and, together with the Offer to Purchase, the "Offer"). The following are some questions you, as a stockholder of the Company, may have and answers to those questions. This Summary Term Sheet highlights selected information from this Offer to Purchase, and may not contain all of the information that is important to you and is qualified in its entirety by the more detailed descriptions and explanations contained in this Offer to Purchase and the related Letter of Transmittal. To better understand the Offer and for a complete description of the legal terms of the Offer, you should read this Offer to Purchase and the related Letter of Transmittal carefully and in their entirety. Questions or requests for assistance may be directed to D.F. King & Co., Inc. (the "Information Agent") at its address and telephone numbers, as set forth on the back cover of this Offer to Purchase. Unless otherwise indicated in this Offer to Purchase or the context otherwise requires, all references in this Offer to Purchase to "we," "our," or "us" refer to Purchaser or Parent, as the context requires.

WHO IS OFFERING TO BUY MY SECURITIES?

- Purchaser is offering to buy your securities. Purchaser has been organized in connection with this Offer and has not carried on any activities other than entering into the Agreement and Plan of Merger, dated as of November 17, 2021 (together with any amendments or supplements thereto, the "Merger Agreement"), among the Company, Parent and Purchaser, and activities relating to, or in connection with, the Offer. See Section 9—"Certain Information Concerning Parent and Purchaser."
- Parent is a global healthcare company and a world leader in diabetes care. Parent has one of the broadest diabetes product portfolios in the industry. In addition, Parent also has a leading position within haemophilia and growth hormone therapy. See Section 9—"Certain Information Concerning Parent and Purchaser."
- Parent has agreed pursuant to the Merger Agreement to cause Purchaser to, upon the terms and subject to the conditions in this Offer to Purchase and the related Letter of Transmittal, accept and pay for shares tendered and not validly withdrawn in the Offer.

WHAT ARE THE CLASSES AND AMOUNTS OF SECURITIES SOUGHT IN THE OFFER?

- Purchaser is seeking to purchase all of the outstanding Shares of the Company. See the Introduction and Section 1—"Terms of the Offer."

HOW MUCH ARE YOU OFFERING TO PAY AND WHAT IS THE FORM OF PAYMENT? WILL I HAVE TO PAY ANY FEES OR COMMISSIONS?

- Purchaser is offering to pay $38.25 per Share, net to you in cash, without interest, subject to any applicable withholding of taxes upon the terms and subject to the conditions contained in this Offer to Purchase and in the related Letter of Transmittal.
- If your Shares are registered in your name and you tender your Shares, you will not be obligated to pay brokerage fees or commissions or similar expenses. If you hold your Shares through a broker, dealer, commercial bank, trust company or other nominee and your broker, dealer, commercial bank, trust company or other nominee tenders your Shares on your behalf, your broker, dealer, commercial bank, trust company or other nominee may charge a fee for doing so. You should consult your broker, dealer, commercial bank, trust company or other nominee to determine whether any charges will apply.

WHY IS PURCHASER MAKING THE OFFER?

- Purchaser is making the Offer because Purchaser and Parent wish to acquire the Company. See Section 1—"Terms of the Offer" and Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements."

WHAT ARE THE MOST SIGNIFICANT CONDITIONS OF THE OFFER?

- The obligation of Purchaser to accept for payment and pay for Shares validly tendered (and not validly withdrawn) pursuant to the Offer is subject to the satisfaction of the conditions set forth below.
  - there shall have been validly tendered (and not validly withdrawn) Shares that, considered together with all other Shares beneficially owned by Parent and its affiliates, represent one more Share than 50% of the sum of the total number of Shares outstanding at the time of the expiration of the Offer (the "Minimum Condition");
  - the waiting period (or any extension thereof) applicable to the Offer under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (the "HSR Act") shall have expired or been terminated (the "HSR Condition");
  - there shall not have been issued by any governmental body of competent jurisdiction in any jurisdiction in which Parent or the Company has business operations, and remain in effect any temporary restraining order, preliminary or permanent injunction preventing the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger, nor has any legal requirement have been promulgated, enacted, issued or deemed applicable to the Offer or the Merger by any governmental body in any jurisdiction in which Parent or the Company has business operations which prohibits or makes illegal the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger (the "Governmental Impediment Condition"); and
  - the Merger Agreement shall not have been terminated in accordance with its terms (the "Termination Condition").
- Purchaser reserves the right to waive certain of the conditions to the Offer in its sole discretion to the extent permitted by law; provided that Parent and Purchaser may not waive the Minimum Condition, the HSR Condition, the Governmental Impediment Condition and the Termination Condition without the consent of the Company.
- The Offer is subject to other conditions in addition to those set forth above. A more detailed discussion of the conditions to consummation of the Offer is contained in the Introduction, Section 1—"Terms of the Offer" and Section 13—"Conditions of the Offer."

IS THERE AN AGREEMENT GOVERNING THE OFFER?

- Yes. The Company, Parent and Purchaser have entered into the Merger Agreement. The Merger Agreement provides, among other things, for the terms and conditions of the Offer and, following consummation of the Offer, the Merger. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements."

DO YOU HAVE FINANCIAL RESOURCES TO MAKE PAYMENTS IN THE OFFER?

- Yes. Parent is a publicly traded company with an equity market capitalization of approximately $252.6 billion (based upon the closing price of Parent shares on the New York Stock Exchange on November 23, 2021). Parent and Purchaser estimate that the total amount of funds required to consummate the Merger (including payments for options, restricted stock units and other payments referred to in the Merger Agreement) pursuant to the Merger Agreement and to purchase all of the Shares pursuant to the Offer and the Merger Agreement will be approximately $3.2 billion.

- Parent expects to contribute or otherwise advance funds to enable Purchaser to consummate the Offer. Parent expects to have sufficient funds on hand at the expiration of the Offer to consummate the Merger (including payments for options, restricted stock units and other payments referred to in the Merger Agreement) pursuant to the Merger Agreement and to purchase all of the Shares pursuant to the Offer and the Merger Agreement. The Offer is not conditioned upon any financing arrangements. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements" and Section 12—"Source and Amount of Funds."

SHOULD PURCHASER'S FINANCIAL CONDITION BE RELEVANT TO MY DECISION TO TENDER IN THE OFFER?

- No. We believe our financial condition is not material to your decision whether to tender your Shares in the Offer because (i) the Offer is being made for all outstanding Shares solely for cash, (ii) the Offer is not subject to any financing condition, (iii) Parent expects to have sufficient funds on hand at the expiration of the Offer to pay the offer price for all Shares in the Offer and (iv) if we consummate the Offer, we will acquire all remaining Shares for the same cash price in the Merger and Parent expects to have sufficient funds on hand to consummate the Merger. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements" and Section 12—"Source and Amount of Funds."
- Purchaser has been organized solely in connection with the Merger Agreement and this Offer and has not carried on any activities other than in connection with the Merger Agreement and this Offer. Because the form of payment consists solely of cash that will be provided to Purchaser by Parent and because of the lack of any relevant historical information concerning Purchaser, our financial condition is not relevant to your decision to tender in the Offer. See Section 12—"Source and Amount of Funds."

HOW LONG DO I HAVE TO DECIDE WHETHER TO TENDER IN THE OFFER?

- You will have until December 22, 2021, to tender your Shares in the Offer, unless Purchaser extends the Offer, in which event you will have until the expiration date of the Offer as so extended. We are not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository. See Section 1—"Terms of the Offer" and Section 3—"Procedures for Tendering Shares."

CAN THE OFFER BE EXTENDED, AND UNDER WHAT CIRCUMSTANCES?

The Merger Agreement provides that, subject to the parties' respective termination rights in the Merger Agreement:

- if at any then-scheduled Expiration Date, any condition to the Offer is not satisfied and has not been waived by Purchaser or Parent, to the extent waivable, Purchaser may, in its discretion, extend the Offer on one or more occasions for an additional period of up to ten business days per extension in order to permit such condition to be satisfied;
- Purchaser will extend the Offer for any period required by any applicable legal requirement, or any interpretation or position of the SEC or the Nasdaq Global Select Market ("Nasdaq") and periods of up to ten business days per extension until any waiting period (and any extension thereof) applicable to the consummation of the Offer under the HSR Act has expired or terminated; and
- if, as of the then-scheduled Expiration Date, any condition to the Offer is not satisfied and has not been waived by Purchaser or Parent, to the extent waivable by Purchaser or Parent, Purchaser will, at the Company's request, extend the Offer on one or more occasions for an additional period of up to ten business days per extension to permit such condition to be satisfied.

See Section 13—"Conditions of the Offer."

HOW WILL I BE NOTIFIED IF THE OFFER IS EXTENDED?

- If Purchaser extends the Offer, we will inform American Stock Transfer & Trust Company, LLC, the depository for this Offer (the "Depository"), of that fact and will issue a press release giving the new expiration date no later than 9:00 a.m., Eastern Time on the next business day after the day on which the Offer was previously scheduled to expire. See Section 1—"Terms of the Offer."

HOW DO I TENDER MY SHARES?

- If you hold your Shares directly as the registered owner, you can (i) tender your Shares in the Offer by delivering the certificates representing your Shares, together with a completed Letter of Transmittal and any other documents required by the Letter of Transmittal, to the Depository or (ii) tender your Shares by following the procedure for book-entry set forth in Section 3—"Procedures for Tendering Shares," not later than the expiration of the Offer. We are not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository. See Section 3—"Procedures for Tendering Shares." The Letter of Transmittal is enclosed with this Offer to Purchase. See Section 3 —"Procedures for Tendering Shares." The Letter of Transmittal is enclosed with this Offer to Purchase.
- If you hold your Shares in street name (i.e., through a broker, dealer, commercial bank, trust company or other nominee), you must contact the institution that holds your Shares and give instructions that your Shares be tendered. You should contact the institution that holds your Shares for more details.
- In all cases, payment for tendered Shares will be made only after timely receipt by the Depository of certificates for such Shares (or of a confirmation of a book-entry transfer of such Shares as described in Section 3—"Procedures for Tendering Shares") and a properly completed and duly executed Letter of Transmittal and any other required documents for such Shares. See also Section 2—"Acceptance for Payment and Payment for Shares."

UNTIL WHAT TIME CAN I WITHDRAW PREVIOUSLY TENDERED SHARES?

- You may withdraw previously tendered Shares any time prior to one minute after 11:59 p.m., Eastern Time, on December 22, 2021, unless Purchaser extends the Offer. See Section 4—"Withdrawal Rights." In addition, pursuant to Section 14(d)(5) of the Securities Exchange Act of 1934, as amended, Shares may be withdrawn at any time after February 21, 2022, which is the 60th day after the date of the commencement of the Offer, unless prior to that date Purchaser has accepted for payment the Shares validly tendered in the Offer. See Section 4—"Withdrawal Rights."

HOW DO I WITHDRAW PREVIOUSLY TENDERED SHARES?

- To withdraw previously tendered Shares, you must deliver a written notice of withdrawal with the required information to the Depository while you still have the right to withdraw. If you tendered Shares by giving instructions to a broker, dealer, commercial bank, trust company or other nominee, you must instruct the broker, dealer, commercial bank, trust company or other nominee to arrange for the withdrawal of your Shares. See Section 4—"Withdrawal Rights."

WHAT DOES THE COMPANY'S BOARD OF DIRECTORS THINK OF THE OFFER?

- The Company's board of directors has unanimously recommended that you accept the Offer. The Company's full statement on the Offer is set forth in its Schedule 14D-9, which it has filed with the SEC concurrently with the filing of our Schedule TO dated November 24, 2021. See also the Introduction.

WILL THE TENDER OFFER BE FOLLOWED BY A MERGER IF ALL THE SHARES ARE NOT TENDERED?

- If we accept Shares for payment pursuant to the Offer, we will hold a sufficient number of Shares to ensure the adoption of the Merger Agreement without any vote of the Company's stockholders under Section 251(h) of the General Corporation Law of the State of Delaware (the "DGCL") to complete the Merger. If the Merger occurs, the Company will become a wholly owned subsidiary of Parent and each issued and then outstanding Share (other than (i) Shares held by the Company (or held in the treasury of the Company), (ii) Shares held by Parent, Purchaser or any other direct or indirect wholly owned subsidiary of Parent and the Company and (iii) Shares held by a holder who properly exercises and perfects appraisal rights in accordance with Section 262 of the DGCL with respect to such Shares and, as of the effective time of the Merger, have neither effectively withdrawn nor lost their rights to such appraisal and payment under the DGCL), will be canceled and converted automatically into the right to receive $38.25 per Share, in cash, without interest, and subject to any applicable withholding of taxes. See the Introduction.
- Because the Merger will be governed by Section 251(h) of the DGCL, no stockholder vote will be required to consummate the Merger. As required by Section 251(h) of the DGCL, the Merger Agreement provides that the Merger shall be effected as soon as practicable following the consummation of the Offer. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements."

IF THE OFFER IS COMPLETED, WILL THE COMPANY CONTINUE AS A PUBLIC COMPANY?

- No. Immediately following consummation of the Offer and satisfaction or waiver (to the extent permitted by applicable legal requirements) of the limited conditions to the Merger, we expect to complete the Merger pursuant to applicable provisions of the DGCL, after which the Surviving Corporation will be an indirect wholly owned subsidiary of Parent and the Shares will no longer be publicly traded. See Section 7—"Possible Effects of the Offer on the Market for the Shares; NASDAQ Listing; Exchange Act Registration and Margin Regulations."

IF I DECIDE NOT TO TENDER, HOW WILL THE OFFER AFFECT MY SHARES?

- If you decide not to tender your Shares in the Offer and the Merger occurs as described above, you will receive in the Merger the right to receive the same amount of cash per Share as if you had tendered your Shares in the Offer. Subject to limited conditions, if we purchase Shares in the Offer, we are obligated under the Merger Agreement to cause the Merger to occur. Following the Offer, the Shares may no longer constitute "margin securities" for purposes of the margin regulations of the Federal Reserve Board, in which case your Shares may no longer be used as collateral for loans made by brokers. Section 7—"Possible Effects of the Offer on the Market for the Shares; NASDAQ Listing; Exchange Act Registration and Margin Regulations."

WHAT IS THE MARKET VALUE OF MY SHARES AS OF A RECENT DATE?

- On November 17, 2021, the last full trading day before we announced our intention to make an Offer for all of the outstanding Shares, the last reported closing price per Share reported on NASDAQ was $21.28. See Section 6—"Price Range of Shares; Dividends."
- On November 23, 2021, the last full trading day before we commenced the Offer, the last reported closing price per Share reported on NASDAQ was $37.98. See Section 6—"Price Range of Shares; Dividends."

IF I ACCEPT THE OFFER, WHEN AND HOW WILL I GET PAID?

- If the conditions to the Offer as set forth in the Introduction and Section 13—"Conditions of the Offer" are satisfied or waived and Purchaser consummates the Offer and accepts your Shares for payment, we will pay you a dollar amount equal to the number of Shares you tendered multiplied by $38.25 in cash, without interest, and subject to any applicable withholding of taxes, promptly following the time at which Purchaser accepts for payment Shares tendered in the Offer. See Section 1—"Terms of the Offer" and Section 2—"Acceptance for Payment and Payment for Shares."

IF I AM AN EMPLOYEE OF THE COMPANY, HOW WILL MY OUTSTANDING EQUITY AWARDS BE TREATED IN THE OFFER AND THE MERGER?

- The Offer is being made for all outstanding Shares, but not for options to purchase Shares ("Company Options") or restricted stock units with respect to Shares ("Company RSUs"), in each case granted under the Company's equity plans. If you wish to tender Shares underlying outstanding Company Options, you must first exercise your Company Options (to the extent exercisable) in accordance with their terms in sufficient time to tender the Shares received into the Offer.
- Pursuant to the Merger Agreement, at the effective time of the Merger, (i) each Company Option that is then outstanding and unexercised, and which has a per-Share exercise price that is less than the Offer Price, will be cancelled and converted into the right to receive a cash payment equal to (a) the excess (if any) of (x) the Offer Price over (y) the exercise price payable per Share subject to that Company Option, multiplied by (b) the total number of Shares subject to that Company Option immediately prior to the effective time of the Merger (without regard to vesting) and (ii) each Company RSU that is then outstanding will be cancelled and converted into the right to receive a cash payment equal to (a) the Offer Price multiplied by (b) the total number of Shares subject to that Company RSU immediately prior to the effective time of the Merger (without regard to vesting). See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements."

WHAT ARE THE PRINCIPAL U.S. FEDERAL INCOME TAX CONSEQUENCES OF TENDERING MY SHARES IN THE OFFER OR HAVING MY SHARES EXCHANGED FOR CASH PURSUANT TO THE MERGER?

- Generally, the receipt of cash in exchange for your Shares pursuant to the Offer or the Merger will be a taxable transaction for U.S. federal income tax purposes. We urge you to consult your own tax advisor as to the particular tax consequences to you of the Offer and the Merger (including the application and effect of any state, local or non-U.S. income and other tax laws). See Section 5—"Certain U.S. Federal Income Tax Consequences of the Offer and the Merger" for a more detailed discussion of certain U.S. federal income tax consequences of the Offer and the Merger.

WILL I HAVE THE RIGHT TO HAVE MY SHARES APPRAISED?

- No appraisal rights are available to the holders of Shares in connection with the Offer. However, if the Offer is successful and the Merger is consummated, stockholders of the Company who (i) did not tender their Shares in the Offer, (ii) otherwise comply with the applicable requirements and procedures of Section 262 of the DGCL and (iii) do not thereafter withdraw their demand for appraisal of such Shares or otherwise lose their appraisal rights, in each case in accordance with the DGCL, will be entitled to demand appraisal of their Shares and receive in lieu of the consideration payable in the Offer a cash payment equal to the "fair value" of their Shares, as determined by the Delaware Court of Chancery, in accordance with Section 262 of the DGCL. If you choose to exercise your appraisal rights in connection with the Merger and you properly demand and perfect such rights in accordance with Section 262 of the DGCL, you may be entitled to payment for your Shares based on a judicial

determination of the fair value of your Shares. Any such judicial determination of the fair value of the Shares could be based upon considerations other than, or in addition to, the price paid in the Offer and the market value of the Shares. Stockholders should recognize that the value so determined could be higher or lower than the price per Share paid pursuant to the Offer or the per Share price to be paid in the Merger. If any stockholder of the Company who demands appraisal under Section 262 of the DGCL fails to properly demand or perfect such rights, or effectively withdraws or loses his or her right to appraisal, as provided in the DGCL, each of the Shares of such holder will be converted into the right to receive an amount equal to the Offer Price.

- The foregoing summary of the rights of dissenting stockholders under the DGCL does not purport to be a complete statement of the procedures to be followed by the Company's stockholders desiring to exercise any available appraisal rights, and is qualified in its entirety by reference to Delaware law, including without limitation, Section 262 of the DGCL a copy of which is included as Annex III to the Company's Schedule 14D-9. See Section 15—"Certain Legal Matters; Regulatory Approvals."

WITH WHOM MAY I TALK IF I HAVE QUESTIONS ABOUT THE OFFER?

- You can call D.F. King & Co., Inc., the Information Agent, toll-free at (888) 542-7446. See the back cover of this Offer to Purchase.

Except as otherwise set forth in this Offer to Purchase, references to "dollars" and "$" shall be to United States dollars.

To All Holders of Shares of
DICERNA PHARMACEUTICALS, INC.

INTRODUCTION

NNUS New Research, Inc., a Delaware corporation ("Purchaser"), is offering to purchase all outstanding shares of common stock, par value $0.0001 per share (the "Shares"), of Dicerna Pharmaceuticals Inc., a Delaware corporation ("Company"), at a price per Share of $38.25, net to the holder in cash (the "Offer Price"), without interest and subject to any withholding of taxes, upon the terms and subject to the conditions described in this Offer to Purchase (together with any amendments or supplements hereto, this "Offer to Purchase") and in the related Letter of Transmittal (together with any amendments or supplements thereto, the "Letter of Transmittal" and, together with the Offer to Purchase, the "Offer"). Purchaser is an indirect wholly owned subsidiary of Novo Nordisk A/S ("Parent").

The Offer is being made in connection with the Agreement and Plan of Merger, dated as of November 17, 2021 (together with any amendments or supplements thereto, the "Merger Agreement"), among the Company, Parent and Purchaser, pursuant to which, after the completion of the Offer and the satisfaction or waiver of certain conditions, Purchaser will be merged with and into the Company pursuant to Section 251(h) of the General Corporation Law of the State of Delaware (the "DGCL"), and the Company will be the surviving corporation and an indirect wholly owned subsidiary of Parent (such corporation, the "Surviving Corporation" and such merger, the "Merger").

If your Shares are registered in your name and you tender directly to American Stock Transfer & Trust Company, LLC, the Depository for the Offer (the "Depository"), you will not be obligated to pay brokerage fees or commissions or, except as otherwise provided in Instruction 6 of the Letter of Transmittal, transfer taxes on the purchase of Shares by Purchaser pursuant to the Offer. If you hold your Shares through a broker, dealer, commercial bank, trust company or other nominee, you should check with such institution as to whether they charge any service fees or commissions.

In addition, if you do not complete and sign the Internal Revenue Service ("IRS") Form W-9 that is provided with the Letter of Transmittal, or an IRS Form W-8BEN or other IRS Form W-8, as applicable, or otherwise establish an exemption, you may be subject to U.S. federal backup withholding (at a rate currently equal to 24%) on the gross proceeds payable to you pursuant to the Offer or the Merger. Backup withholding is not an additional tax and any amounts withheld under the backup withholding rules may be refunded or credited against your U.S. federal income tax liability, provided the required information is timely furnished in the appropriate manner to the IRS. All stockholders should review the discussion in Section 3—"Procedures for Tendering Shares" and Section 5—"Certain U.S. Federal Income Tax Consequences of the Offer and the Merger."

We will pay all charges and expenses of the Depository and D.F. King & Co., Inc., the information agent for the Offer (the "Information Agent").

The Offer is not subject to any financing condition. The Offer is subject to the conditions, among others, that:

- there shall have been validly tendered (and not validly withdrawn) Shares that, considered together with all other Shares beneficially owned by Parent and its affiliates, represent one more Share than 50% of the sum of the total number of Shares outstanding at the time of the expiration of the Offer (the "Minimum Condition");
- the waiting period (or any extension thereof) applicable to the Offer under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (the "HSR Act") shall have expired or been terminated (the "HSR Condition");

- there shall not have been issued by any governmental body of competent jurisdiction in any jurisdiction in which Parent or the Company has business operations, and remain in effect any temporary restraining order, preliminary or permanent injunction preventing the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger, nor shall any legal requirement have been promulgated, enacted, issued or deemed applicable to the Offer or the Merger by any governmental body in any jurisdiction in which Parent or the Company has business operations which prohibits or makes illegal the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger (the "Governmental Impediment Condition"); and
- the Agreement shall not have been terminated in accordance with its terms (the "Termination Condition").

Purchaser and Parent have the right to waive certain of the conditions to the Offer in their sole discretion (to the extent permitted under applicable legal requirement); provided that Parent may not waive the Minimum Condition, the Termination Condition, the HSR Condition or the Governmental Impediment Condition without the consent of the Company. See Section 13—"Conditions of the Offer."

The Offer will expire at one minute after 11:59 p.m., Eastern Time, on December 22, 2021, unless the Offer is extended. See Section 1—"Terms of the Offer", Section 13—"Conditions of the Offer" and Section 15—"Certain Legal Matters; Regulatory Approvals."

After careful consideration, the board of directors of the Company (the "Company Board") has unanimously (i) determined that the Merger Agreement and the transactions contemplated by the Merger Agreement, including the Offer and the Merger (the "Transactions"), are fair to, and in the best interest of, the Company and its stockholders, (ii) declared it advisable to enter into the Merger Agreement, (iii) approved the execution, delivery and performance by the Company of the Merger Agreement and the consummation of the Transactions, including the Offer and the Merger, (iv) agreed that the Merger will be effected under Section 251(h) of the DGCL and (v) resolved to recommend that the stockholders of the Company tender their Shares to Purchaser pursuant to the Offer (the preceding clauses (i) through (v), the "Company Board Recommendation").

For factors considered by the Company Board, see the Company's Solicitation/Recommendation Statement on Schedule 14D-9 (the "Schedule 14D-9") filed with the Securities and Exchange Commission (the "SEC") in connection with the Offer, a copy of which (without certain exhibits) is being furnished to stockholders concurrently herewith.

The Offer is being made in connection with the Merger Agreement, pursuant to which, after the completion of the Offer and the satisfaction or waiver (if permitted by applicable legal requirement) of certain conditions, the Merger will be effected. The Merger shall become effective when a certificate of merger is filed with the Secretary of State of the State of Delaware (or at such subsequent date and time as may be agreed by Parent, the Company and Purchaser and specified in the certificate of merger) (the "Effective Time").

At the Effective Time, each Share issued and outstanding immediately prior to the Effective Time(other than (i) Shares held by the Company (or held in the treasury of the Company), which will be canceled and retired and cease to exist without consideration or payment (ii) Shares held by Parent, Purchaser or any other direct or indirect wholly owned subsidiary of Parent or the Company, which will be converted into such number of shares of the Surviving Corporation such that immediately following the Merger such holders hold the same percentage of interest in the Surviving Corporation as they owned in the Company immediately prior to the Merger or (iii) and Shares held by a holder who properly exercises and perfects appraisal rights in accordance with Section 262 of the DGCL with respect to such Shares) will be canceled and will be converted automatically into the right to receive consideration equal to the Offer Price payable, without any interest, and subject to any withholding taxes, to the holder of such Share, upon surrender of the certificate that formerly evidenced such Share or, with respect to uncertificated Shares, upon the receipt by the Depository of an Agent's Message (as defined below) relating to such Shares.

The Merger Agreement is more fully described in Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements," which also contains a discussion of the treatment of the Company Options and Company RSUs in the Merger. Section 5—"Certain U.S. Federal Income Tax Consequences of the Offer and the Merger" below describes certain U.S. federal income tax consequences generally applicable to Holders (as defined below) whose Shares are tendered and accepted for purchase pursuant to the Offer or whose Shares are converted into the right to receive cash in the Merger.

Because the Merger will be consummated in accordance with Section 251(h) of the DGCL, approval of the Merger will not require a vote of the Company's stockholders. Section 251(h) of the DGCL provides that a stockholder vote is not required to authorize a merger if certain requirements are met, including that (i) the acquiring company consummates a tender offer for all of the outstanding stock of the company to be acquired that, absent Section 251(h) of the DGCL, would be entitled to vote on the merger and (ii) following the consummation of such tender offer, the acquiring company owns at least such percentage of the stock of the company to be acquired that, absent Section 251(h) of the DGCL, would be required to adopt the merger agreement. If the Minimum Condition is satisfied and we accept Shares for payment pursuant to the Offer, we will hold a sufficient number of Shares under Section 251(h) of the DGCL to ensure that the Company will not be required to submit the adoption of the Merger Agreement to a vote of its stockholders. As a result of the Merger, the Company will cease to be a publicly traded company and will become an indirect wholly owned subsidiary of Parent. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements."

This Offer to Purchase and the related Letter of Transmittal contain important information and both documents should be read carefully and in their entirety before any decision is made with respect to the Offer.

THE TENDER OFFER

1. Termsof the Offer.

Upon the terms and subject to the prior satisfaction or waiver of the conditions of the Offer (including, if the Offer is extended or amended, the terms and conditions of any extension or amendment), we will accept for payment, purchase and pay for all Shares validly tendered prior to the expiration of the Offer and not properly withdrawn in accordance with the procedures set forth in Section 4—"Withdrawal Rights." The offer will expire at one minute after 11:59 p.m. Eastern Time on December 22, 2021 (the "Expiration Date"), unless we have extended the Offer in accordance with the terms of the Merger Agreement, in which event the term "Expiration Date" will mean the date to which the initial expiration date of the Offer is so extended.

The Offer is conditioned upon the satisfaction of the Minimum Condition and the other conditions described in Section 13—"Conditions of the Offer." We may terminate the Offer without purchasing any Shares if certain events described in Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements—Summary of the Merger Agreement—Termination" occur.

Purchaser expressly reserves the right to (i) increase the amount of cash constituting the Offer Price, (ii) waive (to the extent permitted under applicable legal requirements) any Offer Condition, and (iii) make any other changes in the terms and conditions of the Offer that are not inconsistent with the terms of the Merger Agreement, except that the Company's prior written approval is required for Parent or Purchaser to:

- decrease the Offer Price;
- change the form of consideration payable in the Offer;
- decrease the maximum number of Shares sought to be purchased in the Offer;

- impose conditions or requirements on the Offer in addition to the Offer Conditions set forth in Section 13—"Conditions of the Offer;"
- amend, modify or waive the Minimum Condition, the Termination Condition, the HSR Condition or the Governmental Impediment Condition;
- amend or modify any other term of the Offer in a manner that adversely affects, or reasonably could adversely affect any holder of Shares in its capacity as such;
- terminate the Offer or accelerate, extend or otherwise change the Expiration Date except as required or provided by the terms of the Merger Agreement; or
- provide any "subsequent offering period" (or any extension thereof) within the meaning of Rule 14d-11 under the Exchange Act.

Upon the terms and subject to the satisfaction or waiver of the conditions of the Offer, we will (i) promptly accept for payment all Shares tendered and not validly withdrawn pursuant to the Offer and (ii) promptly after the Offer Acceptance Time pay for all such shares. The time at which Purchaser accepts for payment Shares tendered in the Offer is referred to as the "Offer Acceptance Time."

If, on or before the Expiration Date, we increase the consideration being paid for Shares accepted for payment in the Offer, such increased consideration will be paid to all stockholders whose Shares are purchased in the Offer, whether or not such Shares were tendered before the announcement of the increase in consideration. We also expressly reserve the right to modify the terms of the Offer, subject to compliance with the Exchange Act, the Merger Agreement and the restrictions identified in paragraphs (1) through (8) above.

The Merger Agreement provides that (i) if at any then-scheduled Expiration Date, any condition to the Offer is not satisfied and has not been waived by Purchaser or Parent, to the extent waivable, Purchaser may, in its discretion, extend the Offer on one or more occasions for an additional period of up to ten business days per extension in order to permit such condition to be satisfied, (ii) Purchaser will extend the Offer for any period required by any applicable legal requirement, or any interpretation or position of the SEC or the Nasdaq Global Select Market ("Nasdaq") and periods of up to ten business days per extension until any waiting period (and any extension thereof) applicable to the consummation of the Offer under the HSR Act has expired or terminated, and (iii) if, as of the then-scheduled Expiration Date, any Offer Condition is not satisfied and has not been waived by Purchaser or Parent, to the extent waivable by Purchaser or Parent, Purchaser will, and Parent will cause Purchaser to, at the Company's request, extend the Offer on one or more occasions for an additional period of up to ten business days per extension to permit such condition to be satisfied. However, in no event will Purchaser (1) be required to extend the Offer beyond the earlier occurrence of (x) the valid termination of the Merger Agreement in compliance with its terms and (y) 11:59 p.m., Eastern time, on the End Date (as defined in Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements") (the "Extension Deadline"), or (2) be permitted to extend the Offer beyond the Extension Deadline without the Company's prior written consent. Subject to the parties' respective termination rights under the Merger Agreement, without the Company's prior written consent, Purchaser may not terminate the Offer, or permit the Offer to expire, before the Extension Deadline. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements." Except as set forth above, there can be no assurance that we will be required under the Merger Agreement to extend the Offer. During any extension of the initial offering period pursuant to the paragraph above, all Shares previously tendered and not withdrawn will remain subject to the Offer and subject to withdrawal rights. See Section 4—"Withdrawal Rights."

Without the Company's consent, there will not be a subsequent offering period for the Offer.

If, subject to the terms of the Merger Agreement, we make a material change in the terms of the Offer or the information concerning the Offer, or if we waive a material condition of the Offer, we will disseminate additional

tender offer materials and extend the Offer if and to the extent required by Rules 14d-3(b)(1), 14d-4(d), 14d-6(c) and l4e-1 under the Exchange Act or otherwise. The minimum period during which a tender offer must remain open following material changes in the terms of the tender offer or the information concerning the tender offer, other than a change in the consideration offered or a change in the percentage of securities sought, will depend upon the facts and circumstances, including the relative materiality of the terms or information changes. With respect to a change in the consideration offered or a change in the percentage of securities sought, a tender offer generally must remain open for a minimum of ten business days following such change to allow for adequate disclosure to stockholders.

We expressly reserve the right, in our sole discretion, subject to the terms and upon the conditions of the Merger Agreement and the applicable rules and regulations of the SEC, to not accept for payment any Shares if, at the expiration of the Offer, any of the conditions to the Offer set forth in Section 13—"Conditions of the Offer" have not been satisfied. Under certain circumstances, Parent and Purchaser may terminate the Merger Agreement and the Offer.

Any extension, waiver or amendment of the Offer or termination of the Offer will be followed, as promptly as practicable, by public announcement thereof, such announcement in the case of an extension to be issued not later than 9:00 a.m., Eastern Time, on the next business day after the Expiration Date in accordance with the public announcement requirements of Rules 14d-3(b)(1), 14d-4(d), 14d-6(c) and l4e-1(d) under the Exchange Act. Without limiting our obligation under such rule or the manner in which we may choose to make any public announcement, we currently intend to make announcements by issuing a press release to the Business Wire (or such other national media outlet or outlets we deem prudent) and making any appropriate filing with the SEC.

Promptly following the purchase of Shares in the Offer, we expect to complete the Merger without a vote of the stockholders of the Company pursuant to Section 251(h) of the DGCL.

The Company has agreed to provide us with its list of stockholders and security position listings for the purpose of disseminating the Offer to holders of Shares. This Offer to Purchase and the related Letter of Transmittal will be mailed to record holders of Shares whose names appear on the Company's stockholder list and will be furnished to brokers, dealers, commercial banks, trust companies and similar persons whose names, or the names of whose nominees, appear on the stockholder list or, if applicable, who are listed as participants in a clearing agency's security position listing, for subsequent transmittal to beneficial owners of Shares.

2. Acceptancefor Payment and Payment for Shares.

Subject to the satisfaction or waiver of all the conditions to the Offer set forth in Section 13—"Conditions of the Offer," we will immediately after the Expiration Date irrevocably accept for payment all Shares tendered (and not validly withdrawn) pursuant to the Offer and, promptly after the Offer Acceptance Time, pay for such Shares.

In all cases, payment for Shares tendered and accepted for payment pursuant to the Offer will be made only after timely receipt by the Depository of (i) certificates representing such Shares or confirmation of the book-entry transfer of such Shares into the Depository's account at American Stock Transfer & Trust Company, LLC ("AST") pursuant to the procedures set forth in Section 3—"Procedures for Tendering Shares," (ii) a Letter of Transmittal, properly completed and duly executed, with any required signature guarantees (or, in the case of a book-entry transfer, an Agent's Message (as defined below) in lieu of the Letter of Transmittal), and (iii) any other documents required by the Letter of Transmittal or any other customary documents required by the Depository. See Section 3—"Procedures for Tendering Shares."

For purposes of the Offer, if and when Purchaser gives oral or written notice to the Depository of its acceptance for payment of such Shares pursuant to the Offer, then Purchaser has accepted for payment and thereby purchased Shares validly tendered and not validly withdrawn pursuant to the Offer. Upon the terms and subject to the conditions of the Offer, payment for Shares accepted for payment pursuant to the Offer will be made by deposit of the purchase price therefor with the Depository, which will act as agent for the tendering stockholders

for purposes of receiving payments from us and transmitting such payments to the tendering stockholders. **Under no circumstances will interest be paid on the Offer Price for Shares, regardless of any extension of the Offer or any delay in payment for Shares.**

If any tendered Shares are not accepted for payment pursuant to the terms and conditions of the Offer for any reason, or if certificates are submitted for more Shares than are tendered, certificates for such unpurchased Shares will be returned (or new certificates for the Shares not tendered will be sent), without expense to the tendering stockholder (or, in the case of Shares tendered by book-entry transfer into the Depository's account at AST pursuant to the procedures set forth in Section 3—"Procedures for Tendering Shares," such Shares will be credited to an account maintained with AST) promptly following expiration or termination of the Offer.

3. Proceduresfor Tendering Shares.

Valid Tender of Shares. Except as set forth below, to validly tender Shares pursuant to the Offer, a properly completed and duly executed Letter of Transmittal in accordance with the instructions of the Letter of Transmittal, with any required signature guarantees, or an Agent's Message (as defined below) in connection with a book-entry delivery of Shares, and any other documents required by the Letter of Transmittal and any other customary documents required by the Depository, must be received by the Depository at one of its addresses set forth on the back cover of this Offer to Purchase prior to the expiration of the Offer and either (i) certificates representing Shares tendered must be delivered to the Depository or (ii) such Shares must be properly delivered pursuant to the procedures for book-entry transfer described below and a confirmation of such delivery received by the Depository (which confirmation must include an Agent's Message (as defined below) if the tendering stockholder has not delivered a Letter of Transmittal), in each case, prior to the Expiration Date. The term "Agent's Message" means a message, transmitted by AST to, and received by, the Depository and forming a part of a Book-Entry Confirmation (as defined below), which states that AST has received an express acknowledgment from the participant in AST tendering the Shares which are the subject of such Book-Entry Confirmation (as defined below) that such participant has received and agrees to be bound by the terms of the Letter of Transmittal and that Purchaser may enforce such agreement against the participant.

Book-Entry Transfer. The Depository will take steps to establish and maintain an account with respect to the Shares at AST for purposes of the Offer. Any financial institution that is a participant in AST's systems may make a book-entry transfer of Shares by causing AST to transfer such Shares into the Depository's account in accordance with AST's procedures for such transfer. However, although delivery of Shares may be effected through book-entry transfer, either the Letter of Transmittal, properly completed and duly executed, together with any required signature guarantees, or an Agent's Message in lieu of the Letter of Transmittal, and any other required documents, must, in any case, be transmitted to and received by the Depository at one of its addresses set forth on the back cover of this Offer to Purchase prior to the Expiration Date. The confirmation of a book-entry transfer of Shares into the Depository's account at AST as described above is referred to herein as a "Book-Entry Confirmation."

Delivery of documents to AST in accordance with AST's procedures does not constitute delivery to the Depository.

Signature Guarantees and Stock Powers. Except as otherwise provided below, all signatures on a Letter of Transmittal must be guaranteed by a financial institution (including most commercial banks, savings and loan associations and brokerage houses) that is a member in good standing of a recognized Medallion Program approved by the Securities Transfer Association, Inc., including the Security Transfer Agents Medallion Program, the New York Stock Exchange Medallion Signature Program and the Stock Exchanges Medallion Program (each, an "Eligible Institution"). Signatures on a Letter of Transmittal need not be guaranteed (i) if the Letter of Transmittal is signed by the registered owner(s) (which term, for purposes of this section, includes any participant in any of AST's systems whose name appears on a security position listing as the owner of the Shares) of Shares tendered therewith and such registered owner has not completed the box entitled "Special

Payment Instructions" or the box entitled "Special Delivery Instructions" on the Letter of Transmittal or (ii) if such Shares are tendered for the account of an Eligible Institution. See Instructions 1 and 5 of the Letter of Transmittal. If the certificates for Shares are registered in the name of a person other than the signer of the Letter of Transmittal, or if payment is to be made or certificates for Shares not tendered or not accepted for payment are to be returned to a person other than the registered owner of the certificates surrendered, then the tendered certificates must be registered or accompanied by appropriate stock powers, in either case, signed exactly as the name or names of the registered owner(s) or holder(s) appear on the certificates, with the signatures on the certificates or stock powers guaranteed as described above. See Instructions 1 and 5 of the Letter of Transmittal.

If certificates representing Shares are forwarded separately to the Depository, a properly completed and duly executed Letter of Transmittal must accompany each delivery of certificates.

Guaranteed Delivery. We are not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository.

THE METHOD OF DELIVERY OF SHARES, THE LETTER OF TRANSMITTAL AND ALL OTHER REQUIRED DOCUMENTS, INCLUDING DELIVERY THROUGH AST, IS AT THE ELECTION AND RISK OF THE TENDERING STOCKHOLDER. DELIVERY OF ALL SUCH DOCUMENTS WILL BE DEEMED MADE ONLY WHEN ACTUALLY RECEIVED BY THE DEPOSITORY (INCLUDING, IN THE CASE OF A BOOK-ENTRY TRANSFER, BY BOOK-ENTRY CONFIRMATION). IF SUCH DELIVERY IS BY MAIL, IT IS RECOMMENDED THAT ALL SUCH DOCUMENTS BE SENT BY PROPERLY INSURED REGISTERED MAIL WITH RETURN RECEIPT REQUESTED. IN ALL CASES, SUFFICIENT TIME SHOULD BE ALLOWED TO ENSURE TIMELY DELIVERY.

Other Requirements. Notwithstanding any provision of the Merger Agreement to the contrary, Purchaser will pay for Shares tendered (and not validly withdrawn) pursuant to the Offer only after timely receipt by the Depository of (i) certificates for (or a timely Book-Entry Confirmation with respect to) such Shares, (ii) a Letter of Transmittal, properly completed and duly executed, with any required signature guarantees (or, in the case of a book-entry transfer, an Agent's Message in lieu of the Letter of Transmittal), and (iii) any other documents required by the Letter of Transmittal or any other customary documents required by the Depository. Accordingly, tendering stockholders may be paid at different times depending upon when certificates for Shares or Book-Entry Confirmations with respect to Shares are actually received by the Depository. **Under no circumstances will Purchaser pay interest on the purchase price of Shares, regardless of any extension of the Offer or any delay in making such payment**. If your Shares are held in street name (i.e., through a broker, dealer, commercial bank, trust company or other nominee), your Shares can be tendered by your nominee by book-entry transfer through the Depository. We are not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository.

Binding Agreement. Our acceptance for payment of Shares tendered pursuant to one of the procedures described above will constitute a binding agreement between the tendering stockholder and us upon the terms and subject to the conditions of the Offer.

Appointment as Proxy. By executing and delivering a Letter of Transmittal as set forth above (or, in the case of a book-entry transfer, by delivery of an Agent's Message in lieu of a Letter of Transmittal), the tendering stockholder irrevocably appoints Purchaser's designees as such stockholder's proxies, each with full power of substitution, to the full extent of such stockholder's rights with respect to the Shares tendered by such stockholder and accepted for payment by us and with respect to any and all other Shares or other securities issued or issuable in respect of such Shares on or after the date of the Merger Agreement. All such proxies and powers of attorney will be considered coupled with an interest in the tendered Shares. Such appointment is effective when, and only to the extent that, we accept for payment Shares tendered by such stockholder as provided herein.

Upon the effectiveness of such appointment, all prior powers of attorney, proxies and consents given by such stockholder will be revoked, and no subsequent powers of attorney, proxies and consents may be given (and, if given, will not be deemed effective). Our designees will, with respect to the Shares or other securities and rights for which the appointment is effective, be empowered to exercise all voting and other rights of such stockholder as they, in their sole discretion, may deem proper at any annual, special, adjourned or postponed meeting of the stockholders of the Company, by written consent in lieu of any such meeting or otherwise. We reserve the right to require that, in order for Shares to be deemed validly tendered, immediately upon our payment for such Shares we must be able to exercise full voting, consent and other rights to the extent permitted under applicable law with respect to such Shares and other securities, including voting at any meeting of stockholders or executing a written consent concerning any matter.

Determination of Validity. All questions as to the validity, form, eligibility (including time of receipt) and acceptance of any tender of Shares will be determined by us in our sole and absolute discretion, which determination will be final and binding, subject to the rights of the tendering holders of Shares to challenge our determination in a court of competent jurisdiction. Purchaser reserves the absolute right to reject any and all tenders determined by us not to be in proper form or the acceptance for payment of or payment for which may, in our opinion, be unlawful. Purchaser also reserves the absolute right to waive any defect or irregularity in the tender of any Shares of any particular stockholder whether or not similar defects or irregularities are waived in the case of any other stockholder. No tender of Shares will be deemed to have been validly made until all defects and irregularities relating thereto have been cured or waived. None of Parent, Purchaser or any of their respective affiliates or assigns, the Depository, the Information Agent, or any other person will be under any duty to give notification of any defects or irregularities in tenders or incur any liability for failure to give any such notification. Purchaser's interpretation of the terms and conditions of the Offer (including the Letter of Transmittal and the instructions thereto and any other documents related to the Offer) will be final and binding, subject to the rights of the tendering holders of Shares to challenge our determination in a court of competent jurisdiction.

Backup Withholding. In order to avoid "backup withholding" of U.S. federal income tax on payments of cash pursuant to the Offer or the Merger, a stockholder that is a "U.S. person" (as defined in the instructions to the IRS Form W-9 provided with the Letter of Transmittal) whose Shares are tendered and accepted for purchase for cash pursuant to the Offer or whose Shares are converted into the right to receive cash in the Merger must, unless an exemption applies, provide the Depository with such stockholder's correct taxpayer identification number ("TIN") on an IRS Form W-9, certify under penalties of perjury that such TIN is correct and provide certain other certifications. If a stockholder does not provide such stockholder's correct TIN or fails to provide the required certifications, the IRS may impose penalties on such stockholder, and the gross proceeds payable to such stockholder pursuant to the Offer or the Merger may be subject to backup withholding at a rate currently equal to 24%. All stockholders that are U.S. persons whose Shares are tendered and accepted for purchase for cash pursuant to the Offer or whose Shares are converted into the right to receive cash in the Merger should complete and sign the IRS Form W-9 included as part of the Letter of Transmittal to provide the information and certifications required to avoid backup withholding (unless an applicable exemption exists and is established in a manner satisfactory to the Depository).

Certain stockholders (including, among others, all corporations and certain foreign individuals and entities) are exempt from backup withholding. Exempt stockholders that are "U.S. persons" should complete and sign an IRS Form W-9 indicating their exempt status in order to avoid backup withholding. Stockholders that are not "U.S. persons" should complete and sign an IRS Form W-8BEN, IRS Form W-8BEN-E, or other appropriate IRS Form W-8 (instead of an IRS Form W-9) in order to avoid backup withholding. Such non-U.S. person should consult a tax advisor to determine which form is appropriate. An appropriate IRS Form W-8 may be obtained from the Depository or at the IRS website (www.irs.gov). See Instruction 8 to the Letter of Transmittal.

Backup withholding is not an additional tax and any amounts withheld under the backup withholding rules may be refunded or credited against your U.S. federal income tax liability, provided the required information is timely furnished in the appropriate manner to the IRS.

Information reporting to the IRS may also apply to the receipt of cash pursuant to the Offer or the Merger.

4. WithdrawalRights.

Except as otherwise provided in this Section 4, tenders of Shares pursuant to the Offer are irrevocable. However, a stockholder has withdrawal rights that are exercisable until the expiration of the Offer (i.e., at any time prior to one minute after 11:59 p.m., Eastern Time on December 22, 2021), or in the event the Offer is extended, on such date and time to which the Offer is extended. In addition, Shares may be withdrawn at any time after February 21, 2022, which is the 60th day after the date of the commencement of the Offer, unless prior to that date Purchaser has accepted for payment the Shares validly tendered in the Offer.

For a withdrawal of Shares to be effective, a written notice or facsimile transmission of withdrawal must be timely received by the Depository at one of its addresses set forth on the back cover of this Offer to Purchase. Any notice of withdrawal must specify the name of the person having tendered the Shares to be withdrawn, the number of Shares to be withdrawn and the name of the record holder of the Shares to be withdrawn, if different from that of the person who tendered such Shares. The signature(s) on the notice of withdrawal must be guaranteed by an Eligible Institution, unless such Shares have been tendered for the account of any Eligible Institution. If Shares have been tendered pursuant to the procedures for book-entry transfer as set forth in Section 3—"Procedures for Tendering Shares," any notice of withdrawal must specify the name and number of the account at AST to be credited with the withdrawn Shares. If certificates representing the Shares have been delivered or otherwise identified to the Depository, the name of the registered owner and the serial numbers shown on such certificates must also be furnished to the Depository prior to the physical release of such certificates.

All questions as to the form and validity (including time of receipt) of any notice of withdrawal will be determined by us, in our sole discretion, which determination will be final and binding, subject to the rights of the tendering holders of Shares to challenge our determination in a court of competent jurisdiction. No withdrawal of Shares will be deemed to have been properly made until all defects and irregularities have been cured or waived. None of Parent, Purchaser or any of their respective affiliates or assigns, the Depository, the Information Agent, or any other person will be under any duty to give notification of any defects or irregularities in any notice of withdrawal or incur any liability for failure to give such notification. Withdrawals of tenders of Shares may not be rescinded, and any Shares properly withdrawn will be deemed not to have been validly tendered for purposes of the Offer. However, withdrawn Shares may be retendered by following one of the procedures for tendering Shares described in Section 3—"Procedures for Tendering Shares" at any time prior to the expiration of the Offer.

If Purchaser extends the Offer, delays its acceptance for payment of Shares, or is unable to accept for payment Shares pursuant to the Offer, for any reason, then, without prejudice to Purchaser's rights under the Offer, the Depository may nevertheless, on Purchaser's behalf, retain tendered Shares, and such Shares may not be withdrawn except to the extent that tendering stockholders exercise withdrawal rights as described in this Section 4.

5. CertainU.S. Federal Income Tax Consequences of the Offer and the Merger.

The following summary describes certain U.S. federal income tax consequences generally applicable to Holders (as defined below) whose Shares are tendered and accepted for purchase pursuant to the Offer or whose Shares are converted into the right to receive cash in the Merger. This summary is based on the Internal Revenue Code of 1986, as amended (the "Code"), Treasury Regulations promulgated under the Code, published rulings, administrative pronouncements, and judicial decisions, all as in effect on the date hereof and all of which are subject to change or differing interpretations, possibly with retroactive effect. This summary addresses only stockholders who hold their Shares as capital assets within the meaning of the Code (generally, property held for investment) and does not address all of the tax consequences that may be relevant to stockholders in light of their particular circumstances or to certain types of stockholders subject to special treatment under the Code, including pass-through entities (including partnerships and S corporations for U.S. federal income tax purposes) and

investors in such entities, certain financial institutions, banks, brokers, dealers or traders in securities who elect to apply a mark-to-market method of accounting, insurance companies, retirement plans, certain former U.S. citizens or long-term residents, mutual funds, real estate investment trusts, regulated investment companies, cooperatives, tax-exempt organizations (including private foundations), persons who are subject to the alternative minimum tax, persons who hold their Shares as part of a straddle, hedge, conversion, constructive sale, synthetic security, integrated investment, or other risk-reduction transaction for U.S. federal income tax purposes, stockholders that have a functional currency other than the U.S. dollar, stockholders that hold or have held, directly or pursuant to attribution rules, more than 5 percent of the Shares at any time during the five-year period ending on the date of the consummation of the Offer or the Merger, as applicable, and persons who acquired their Shares upon the exercise of stock options or otherwise as compensation. The following discussion also does not address the tax consequences applicable to holders of options or warrants to acquire Shares, holders of Shares who exercise appraisal rights or any holder of Shares that owns, directly, indirectly, or constructively, any interest in Parent. This summary does not address any U.S. federal estate, gift, or other non-income tax consequences, the effects of the Medicare contribution tax on net investment income, or any state, local, or foreign tax consequences.

For purposes of this discussion, a "U.S. Holder" is a beneficial owner of Shares that, for U.S. federal income tax purposes, is (i) a citizen or individual resident of the United States, (ii) a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, that is created or organized in or under the laws of the United States or any State or the District of Columbia, (iii) an estate, the income of which is subject to U.S. federal income taxation regardless of its source, or (iv) a trust if it (A) is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust or (B) has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person. For purposes of this discussion, a "Non-U.S. Holder" is a beneficial owner of Shares (other than a partnership or other entity or arrangement treated as a partnership for U.S. federal income tax purposes) that is not a U.S. Holder, and a "Holder" is a U.S. Holder or a Non-U.S. Holder.

If a partnership (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) exchanges Shares for cash pursuant to the Offer or the Merger, the tax treatment of a partner in the partnership will generally depend upon the status of the partner and the activities of the partnership. A partner in a partnership holding Shares should consult its tax advisor regarding the tax consequences of exchanging Shares for cash pursuant to the Offer or the Merger.

No ruling has been requested from the Internal Revenue Service (the "IRS") in connection with the Offer or the Merger and no such ruling will be requested. The discussion below neither binds the IRS nor precludes it from adopting a contrary position and there can be no assurance that the tax considerations described below will not be challenged by the IRS or sustained by a court if so challenged. Furthermore, no opinion of counsel has been or will be rendered with respect to any tax considerations of the Offer or the Merger, or any related transactions. The use of words such as "will" and "should" in any tax-related discussion contained in this discussion is not intended to convey a particular level of comfort. The following discussion assumes the form of the Offer and the Merger, and any related transactions will be respected by the IRS or a court if challenged by the IRS. If the tax considerations described below are successfully challenged, the tax consequences of the Offer and the Merger may differ from the tax consequences described below.

This discussion is for information purposes only and is not intended as tax advice. Stockholders are urged to consult their tax advisors to determine the applicable U.S. federal, state, local and non-U.S. tax consequences, including any non-income tax consequences to them of exchanging Shares for cash pursuant to the Offer or the Merger in light of their particular circumstances.

U.S. Holders

The exchange of Shares for cash pursuant to the Offer or the Merger will be a taxable transaction to U.S. Holders for U.S. federal income tax purposes. In general, a U.S. Holder who exchanges Shares for cash pursuant to the Offer or the Merger will recognize capital gain or loss in an amount equal to the difference, if any, between the amount of cash received and the U.S. Holder's adjusted tax basis in the Shares exchanged. Such gain or loss will generally be long-term capital gain or loss if, as of the date of the exchange, a U.S. Holder's holding period in the Shares exchanged is more than one year. Long-term capital gain recognized by certain non-corporate holders, including individuals, is currently subject to tax at a reduced rate. The deductibility of capital losses is subject to limitations under the Code.

If a U.S. Holder acquired different blocks of Shares at different times or at different prices, such U.S. Holder generally must determine its adjusted tax basis and holding period separately with respect to each such block of Shares.

A U.S. Holder who exchanges Shares for cash pursuant to the Offer or the Merger is subject to information reporting and may be subject to backup withholding unless certain information is provided to the Depository or an exemption applies. See Section 3—"Procedures for Tendering Shares."

Non-U.S. Holders

A Non-U.S. Holder's receipt of cash in exchange for Shares generally will not be subject to U.S. federal income tax unless:

- the Non-U.S. Holder is an individual who was present in the United States for 183 days or more during the taxable year in which the Offer or the Merger, as applicable, was consummated, and certain other conditions are met; or
- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business in the United States (and, if required by an applicable income tax treaty, attributable to a permanent establishment of the Non-U.S. Holder in the United States).

Gain described in the first bullet point above generally will be subject to tax at a flat rate of 30% (or such lower rate as may be specified by an applicable income tax treaty), net of applicable U.S.-source capital losses recognized by such Non-U.S. Holder. Gain described in the second bullet point above generally will be subject to U.S. federal income tax on a net income basis in the same manner as if the Non-U.S. Holder were a U.S. Holder. A Non-U.S. Holder that is a corporation also may be subject to a 30% branch profits tax (or such lower rate as may be specified by an applicable income tax treaty). Non-U.S. Holders are urged to consult their tax advisors as to any applicable tax treaties that might provide for different rules.

THE FOREGOING SUMMARY DOES NOT DISCUSS ALL ASPECTS OF U.S. FEDERAL INCOME TAXATION THAT MAY BE RELEVANT TO PARTICULAR HOLDERS. HOLDERS ARE URGED TO CONSULT THEIR TAX ADVISORS AS TO THE PARTICULAR TAX CONSEQUENCES TO THEM OF THE RECEIPT OF CASH FOR THEIR SHARES PURSUANT TO THE OFFER OR THE MERGER UNDER ANY U.S. FEDERAL, STATE, FOREIGN, LOCAL OR OTHER TAX LAWS, OR UNDER ANY APPLICABLE INCOME TAX TREATY.

6. PriceRange of Shares; Dividends.

According to the Company' Annual Report on Form 10-K for the fiscal year ended December 31, 2020, the Shares are traded on NASDAQ under the symbol "DRNA." the Company has advised Parent that, as of the close of business on November 22, 2021, 78,129,378 Shares were outstanding. The following table sets forth, for the fiscal quarters indicated, the high and low sales prices per Share on NASDAQ with respect to the fiscal years ended December 31, 2019 and December 31, 2020 and, with respect to the fiscal year ended December 31, 2021, through November 23, 2021, using Share data reported in published financial sources.

Fiscal Year Ended December 31, 2019	**High**	**Low**
First Quarter	$ 14.95	$ 9.39
Second Quarter	16.95	10.70
Third Quarter	16.02	12.53
Fourth Quarter	27.68	13.19

Fiscal Year Ended December 31, 2020	**High**	**Low**
First Quarter	$ 22.97	$ 11.75
Second Quarter	25.97	16.61
Third Quarter	27.10	16.50
Fourth Quarter	25.68	17.76

Current Fiscal Year	**High**	**Low**
First Quarter	$ 29.90	$ 20.85
Second Quarter	38.64	24.18
Third Quarter	40.14	19.48
Fourth Quarter (through November 23, 2021)	38.14	19.06

On November 17, 2021, the trading day before the public announcement of the execution of the Merger Agreement, the reported closing sales price of the Shares on NASDAQ was $21.28. On November 23, 2021, the last full trading day prior to the commencement of the Offer, the reported closing sales price per Share on NASDAQ during normal trading hours was $37.98 per Share. The Offer Price represents an approximately 79.8% premium over the November 17, 2021 closing stock price.

The Company has never paid dividends on its common stock. In the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, the Company had indicated that it does not intend to pay dividends on its common stock in the foreseeable future and that, until such time as the Company pays cash dividends, stockholders of the Company must rely on increases in its stock price for appreciation of their investment. Additionally, under the terms of the Merger Agreement, the Company is not permitted to declare or pay any dividends on or make other distributions in respect of any of its equity interests. See Section 14—"Dividends and Distributions." **Stockholders are urged to obtain a current market quotation for the Shares.**

7. Possible Effects of the Offer on the Market for the Shares; NASDAQ Listing; Exchange Act Registration and Margin Regulations.

Possible Effects of the Offer on the Market for the Shares. If the Offer is successful, there will be no market for the Shares because Purchaser intends to consummate the Merger as soon as practicable (but in any event on the same date as) the Offer Acceptance Time and subject to the satisfaction or waiver of certain conditions set forth in the Merger Agreement.

NASDAQ Listing. The Shares are currently listed on NASDAQ. Immediately following the consummation of the Merger (which is expected to occur as soon as practicable (but in any event on the same date as) the Offer Acceptance Time), the Shares will no longer meet the requirements for continued listing on NASDAQ because the only stockholder will be Purchaser. Immediately following the consummation of the Merger, we intend to cause the Company to delist the Shares from NASDAQ.

Exchange Act Registration. The Shares currently are registered under the Exchange Act. The purchase of the Shares pursuant to the Offer may result in the Shares becoming eligible for deregistration under the Exchange Act. Registration of the Shares may be terminated by the Company upon application to the SEC if the outstanding Shares are not listed on a "national securities exchange" and if there are fewer than 300 holders of record of Shares.

We intend to seek to cause the Company to apply for termination of registration of the Shares as soon as possible after consummation of the Offer if the requirements for termination of registration are met. Termination of registration of the Shares under the Exchange Act would reduce the information required to be furnished by the Company to its stockholders and to the SEC and would make certain provisions of the Exchange Act (such as the short-swing profit recovery provisions of Section 16(b), the requirement of furnishing a proxy statement or information statement in connection with stockholders' meetings or actions in lieu of a stockholders' meeting pursuant to Sections 14(a) and 14(c) under the Exchange Act and the related requirement of furnishing an annual report to stockholders) no longer applicable with respect to the Shares. In addition, if the Shares are no longer registered under the Exchange Act, the requirements of Rule 13e-3 under the Exchange Act with respect to "going private" transactions would no longer be applicable to the Company. Furthermore, the ability of "affiliates" of the Company and persons holding "restricted securities" of the Company to dispose of such securities pursuant to Rule 144 under the Securities Act of 1933, as amended, may be impaired or eliminated. If registration of the Shares under the Exchange Act were terminated, the Shares would no longer be eligible for continued inclusion on the Board of Governors' of the Federal Reserve System (the "Federal Reserve Board's") list of "margin securities" or eligible for stock exchange listing.

If registration of the Shares is not terminated prior to the Merger, then the registration of the Shares under the Exchange Act will be terminated following completion of the Merger.

Margin Regulations. The Shares are currently "margin securities" under the regulations of the Federal Reserve Board, which has the effect, among other things, of allowing brokers to extend credit using such Shares as collateral. Depending upon factors similar to those described above regarding listing and market quotations, following the Offer, the Shares may no longer constitute "margin securities" for the purposes of the margin regulations of the Federal Reserve Board, in which event the Shares would be ineligible as collateral for margin loans made by brokers.

8. CertainInformation Concerning the Company.

The following description of the Company and its business was taken from the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2021, and is qualified in its entirety by reference to such Quarterly Report on Form 10-Q.

The Company is a biopharmaceutical company focused on discovering, developing, and commercializing medicines that are designed to leverage ribonucleic acid interference (RNAi) to silence selectively genes that cause or contribute to disease.

The Company is a Delaware corporation incorporated on October 24, 2006. The Company's corporate headquarters are located at 33 Hayden Avenue, Lexington, MA 02421. The Company's telephone number at such corporate headquarters is 617-621-8097.

Available Information. The Company is subject to the information and reporting requirements of the Exchange Act and in accordance therewith is obligated to file reports and other information with the SEC relating to its business, financial condition and other matters. Certain information, as of particular dates, concerning the Company's business, principal physical properties, capital structure, material pending litigation, operating results, financial condition, directors and officers (including their remuneration and stock options granted to them), the principal holders of the Company's securities, any material interests of such persons in transactions

with the Company, and other matters is required to be disclosed in proxy statements and periodic reports distributed to the Company's stockholders and filed with the SEC. Copies may be obtained by mail, upon payment of the SEC's customary charges, by writing to its principal office at 100 F Street, NE, Washington, DC 20549. The SEC also maintains an Internet website that contains reports, proxy statements and other information about issuers, such as the Company, who file electronically with the SEC. The address of that site is http://www.sec.gov. The Company also maintains an Internet website at https://dicerna.com. The information contained in, accessible from or connected to the Company's website is not incorporated into, or otherwise a part of, this Offer to Purchase or any of the Company's filings with the SEC. The website addresses referred to in this paragraph are inactive text references and are not intended to be actual links to the websites.

Sources of Information. Except as otherwise set forth herein, the information concerning the Company contained in this Offer to Purchase has been based upon publicly available documents and records on file with the SEC, other public sources and information provided by the Company. Although we have no knowledge that any such information contains any misstatements or omissions, none of Parent, Purchaser or any of their respective affiliates or assigns, the Information Agent or the Depository assumes responsibility for the accuracy or completeness of the information concerning the Company contained in such documents and records or for any failure by the Company to disclose events which may have occurred or may affect the significance or accuracy of any such information.

9. CertainInformation Concerning Parent and Purchaser.

General. Purchaser is a Delaware corporation with its principal offices located at c/o Novo Nordisk A/S, Novo Allé, DK-2880, Bagsvaerd, Denmark. The telephone number of Purchaser is +45 4444-8888. Purchaser is an indirect wholly owned subsidiary of Parent. Purchaser was formed for the purpose of making a tender offer for all of the Shares of the Company and has not engaged, and does not expect to engage, in any business other than in connection with the Offer and the Merger.

Parent is a Danish stock corporation (*aktieselskab*) with its principal offices located at Novo Nordisk A/S, Novo Allé, DK-2880, Bagsvaerd, Denmark. The telephone number of Parent is +45 4444-8888. Parent is a global healthcare company and a world leader in diabetes care. Parent has one of the broadest diabetes product portfolios in the industry. In addition, Parent also has a leading position within haemophilia and growth hormone therapy.

The name, citizenship, present principal occupation or employment and past material occupation, positions, offices or employment for at least the last five years for each director and each of the executive officers of Parent and Purchaser and certain other information are set forth in Schedule A hereto.

As of November 22, 2021, Parent beneficially owns 2,279,982 Shares.

During the last five years, none of Parent or Purchaser or, to the best knowledge of Parent and Purchaser, any of the persons listed in Schedule A hereto, (i) has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors) or (ii) was a party to any judicial or administrative proceeding (except for matters that were dismissed without sanction or settlement) that resulted in a judgment, decree or final order enjoining the person from future violations of, or prohibiting activities subject to, federal or state securities laws, or a finding of any violation of such laws.

Except as otherwise described in this Offer to Purchase, (i) none of Parent, Purchaser, any majority-owned subsidiary of Parent or Purchaser or, to the best knowledge of Parent and Purchaser, any of the persons listed in Schedule A hereto or any associate or any of the persons so listed beneficially owns or has any right to acquire, directly or indirectly, any Shares and (ii) none of Parent, Purchaser or, to the best knowledge of Parent and Purchaser, any of the persons or entities referred to above nor any director, executive officer or subsidiary of any of the foregoing has effected any transaction in the Shares during the past 60 days.

Except as otherwise described in this Offer to Purchase, none of Parent, Purchaser or, to the best knowledge of Parent and Purchaser, any of the persons listed in Schedule A hereto, has any contract, arrangement, understanding or relationship with any other person with respect to any securities of the Company, including, but not limited to, any contract, arrangement, understanding or relationship concerning the transfer or voting of such securities, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of loans, guarantees against loss, guarantees of profits, division of profits or loss or the giving or withholding of proxies.

Except as set forth in this Offer to Purchase, none of Parent, Purchaser or, to the best knowledge of Parent and Purchaser, any of the persons listed on Schedule A hereto, has had any business relationship or transaction with the Company or any of its executive officers, directors or affiliates that is required to be reported under the rules and regulations of the SEC applicable to the Offer. Except as set forth in this Offer to Purchase, there have been no contacts, negotiations or transactions between Parent or any of its subsidiaries or, to the best knowledge of Parent, any of the persons listed in Schedule A hereto, on the one hand, and the Company or its affiliates, on the other hand, concerning a merger, consolidation or acquisition, tender offer or other acquisition of securities, an election of directors or a sale or other transfer of a material amount of assets during the past two years.

Available Information. Pursuant to Rule 14d-3 under the Exchange Act, Parent and Purchaser filed with the SEC a Tender Offer Statement on Schedule TO (the "Schedule TO"), of which this Offer to Purchase forms a part, and exhibits to the Schedule TO. Copies of the Schedule TO and the exhibits thereto, and reports, proxy statements and other information may be obtained by mail, upon payment of the SEC's customary charges, by writing to its principal office at 100 F Street, NE, Washington, DC 20549. Parent filings are also available to the public on the SEC's website (http://www.sec.gov).

10. Backgroundof the Offer; Contacts with the Company.

Past Contacts or Negotiations between Parent and the Company. The following is a description of contacts between representatives of Parent or Purchaser with representatives of the Company that resulted in the execution of the Merger Agreement. For a review of the Company's activities relating to these contacts, please refer to the Company's Schedule 14D-9 being mailed to stockholders with this Offer to Purchase.

Background of the Offer and the Merger

The Company regularly meets with other biotechnology and pharmaceutical companies regarding a variety of topics and considers potential partnerships, licensing arrangements, joint ventures, collaborations and other strategic transactions. In particular, the Company maintains license and collaboration agreements with a number of biotechnology and pharmaceutical companies, including Parent, and from time to time engages in discussions as to modifications of those license and collaboration agreements. In August 2021, the Company was approached by Parent regarding a potential significant expansion of their relationship beyond the existing Collaboration Agreement with Parent, seeking to enter a new collaboration and licensing agreement around the Company's GalXC Plus technology and joint technology development to combine Parent and the Company's technologies to improve the GalXC Plus Platform (the "Novo Expansion"). The Company's senior management declined to pursue the Novo Expansion and determined that it was not in the strategic interests of the Company to form an additional collaboration at that time. At various points between August 2021 and September 2021, members of the Company's senior management discussed with members of the Company Board Parent's interest in a potential expansion of the relationship between the Company and Parent. Later in September 2021, Parent indicated its interest in exploring, absent the possibility to enter into the Novo Expansion, a potential strategic transaction involving a potential acquisition of the Company.

On September 21 and 22, 2021 the Company Board held regularly scheduled meetings with members of senior management and corporate legal counsel, Goodwin Procter LLP ("Goodwin"). These meetings were part of regularly scheduled meetings of the Company Board which included a periodic review of the Company's programs, platform, and strategy with the Company's management. During the course of these meetings, the

Company Board discussed Parent's indication that it had potential interest in an expanded collaboration involving GalXC Plus, and, absent a collaboration a strategic transaction with the Company, and the potential desirability of pursuing a potential strategic transaction with Parent, taking into consideration the Company's prospects and risks as a stand-alone company, depending on the nature and terms of that interest. In connection with such discussions, the Company Board invited representatives of SVB Leerink LLC ("SVB Leerink"), financial advisor to the Company, and Skadden, Arps, Slate, Meagher & Flom LLP ("Skadden"), transactional legal counsel to the Company, to attend portions of these meetings to discuss, among other things, the possible interest of Parent in a potential strategic transaction. Representatives of SVB Leerink reviewed certain preliminary illustrative financial analyses, which were developed using certain management forecasts related to the Company's proprietary and partnered programs but did not include any management forecasts with respect to the Company's broader RNAi platforms. With respect to the Company's proprietary and partnered programs, these management forecasts did not differ materially from the management forecasts reflected in the summarized scenarios in "—Certain Financial Projections" in the Company's Schedule 14D-9. Representatives of Skadden reviewed legal matters, including fiduciary duties.

On October 7, 2021, Lars Jørgensen, Chief Executive Officer of Parent called Dr. Fambrough to discuss Parent's interest in a potential acquisition of the Company. Later that day, Mr. Jørgensen submitted a letter to the Company providing for a non-binding proposal to acquire all of the outstanding common stock of the Company at $32.50 per Share in cash, subject to due diligence and other conditions (the "October 7 Proposal").

Later that day, the Company Board held a meeting by teleconference, which included senior management and representatives of Centerview Partners, LLC ("Centerview"), financial advisor to the Company, SVB Leerink, Skadden, and Goodwin to discuss the details of the October 7 Proposal. The Company Board reviewed the terms of the proposal. Representatives of Skadden reviewed legal matters, including fiduciary duties. Representatives of Centerview and SVB Leerink provided perspectives regarding the October 7 Proposal and potential next steps in connection with the Company Board's review of Parent's interest and the possibility of pursuing a strategic transaction, including the process for senior management to update the management forecasts with respect to the Company's broader RNAi platforms, financial analyses to be conducted and the possibility of contacting additional parties. Following discussions, the Company Board authorized senior management to work with Centerview and SVB Leerink to proceed with the steps discussed. The Board determined to hold another meeting after Centerview and SVB Leerink had the opportunity to perform financial analyses with respect to the Company and the October 7 Proposal.

Between October 11 and 15, 2021, based on discussions with the Company Board, Dr. Fambrough and representatives of Centerview contacted two global pharmaceutical companies, Company A and Company B, (who were viewed), based on discussions with members of the Company Board as the most likely to engage based on their knowledge of the Company), to determine their interest in pursuing a strategic transaction, informing them that another global pharmaceutical company had expressed interest in pursuing a potential strategic transaction involving the Company. On October 15, 2021, a representative of Company B communicated to a representative of Centerview that Company B was not interested in pursuing a strategic transaction involving the Company.

On October 18, 2021, the Company Board held a meeting by videoconference, which included senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Representatives of Skadden discussed legal matters, including fiduciary duties. Representatives of Centerview provided an update regarding outreach to Company A and Company B, including that Company B indicated it was not interested in pursuing a strategic transaction with the Company, and that there had been no further communications with Company A. Members of the Company's senior management and representatives of Centerview and SVB Leerink reviewed financial projections and the underlying assumptions prepared by the Company's senior management relating to the Company's programs and RNAi platforms (which, other than immaterial differences, are reflected in the summarized scenarios in "— Certain Financial Projections") in the Company's Schedule 14D-9, and representatives of Centerview and SVB Leerink reviewed preliminary illustrative financial analyses. After reviewing the information presented and considering Parent's October 7 Proposal and potential next steps, the Company Board

determined that the October 7 Proposal was not acceptable and that the Company should continue to explore Parent's interest to assess whether that interest could result in a transaction that would be in the best interests of the Company and its shareholders. The Company Board instructed Dr. Fambrough to advise Parent that while its current proposal was not sufficient to serve as the basis for a strategic transaction, the Company Board would be open to considering a proposal that provided appropriate recognition of the Company's value. The Company Board also determined not to contact additional parties at that time (given that Company A and Company B were viewed as the most likely to engage given their knowledge of the Company and given the risk that a leak could be disruptive to the Company's personnel and third party relationships and could adversely impact Parent's interest in continuing to pursue a strategy transaction), but to retain the possibility of doing so in the future if the Company Board determined doing so to be appropriate.

At the direction of the Company Board, on October 19, 2021, Dr. Fambrough called Mr. Jørgensen to express the Company's openness to a potential strategic transaction, but that the Company Board did not view the $32.50 per Share offered in the October 7 Proposal to be sufficiently compelling to serve as the basis for access to due diligence negotiation of a potential strategic transaction. Mr. Jørgensen stated that Parent would consider increasing the proposed price.

On October 21, 2021, Parent submitted a revised proposal to the Company to acquire all of the outstanding common stock of the Company at $35.75 per Share in cash (the "October 21 Proposal").

Dr. Fambrough subsequently updated the Company Board regarding receipt of Parent's revised proposal and that a representative of Company A had scheduled a phone call with him on October 26, 2021 to discuss Company A's potential interest in pursuing a strategic transaction.

On October 22, 2021, the Company Board held a meeting by videoconference, which included senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Representatives of Centerview reviewed the economic terms of the revised October 21 Proposal and potential responses to the October 21 Proposal. The Board also discussed Company A's possible interest in a strategic transaction and the upcoming phone call scheduled between Dr. Fambrough and a representative of Company A as well as perspectives (including with senior management and the Company's financial advisors) on whether or not any additional parties not previously contacted would likely be interested in pursuing a strategic transaction on attractive terms. Representatives of Skadden summarized the key terms of a proposed non-disclosure agreement with Parent proposed to be entered into in the event Parent was afforded access to due diligence information in connection with its evaluation of a potential strategic transaction. Following further discussion, the Company Board determined to continue discussions as to a potential strategic transaction with Parent, and provide Parent with access to due diligence, if Parent increased its proposed offer price to at least $38.00 per Share. The Company Board also determined not to contact additional parties at that time, but to retain the possibility of doing so in the future if the Company Board determined doing so to be appropriate.

At the direction of the Company Board, on October 25, 2021, Dr. Fambrough called Mr. Jørgensen to express the Company's willingness to allow Parent access to due diligence if Parent improved its offer to $38.00 per Share. Mr. Jørgensen indicated that Parent believed that its current proposal fully valued the Company at $35.75 per Share but that in an effort to pursue a strategic transaction without delay, he believed Parent could provide more value and could be willing to increase its proposed price to $38.00 per Share. Mr. Jørgensen also advised Dr. Fambrough that Parent would provide a letter confirming its revised proposal and expressed Parent's interest in pursuing a transaction that could potentially close by the end of the year. Later that day, a representative of the Company provided a representative of Parent with an initial draft non-disclosure agreement.

On October 26, 2021, Mr. Jørgensen called Dr. Fambrough to inform him that Parent was prepared to increase its offer but, in exchange for Parent's commitment to increase the offer price to $38.00 per Share, Parent was requesting four weeks of exclusivity. Dr. Fambrough communicated that he believed that the Company Board was unlikely to accept the four-week exclusivity request at that time, but that he would speak to the Company Board about the request.

On October 26, 2021, at the direction of the Company Board, Dr. Fambrough spoke with an executive of Company A to discuss Company A's interest in a potential acquisition of the Company, during which the executive of Company A communicated that Company A potentially had interest in exploring such a transaction. The same day, representatives of Centerview spoke with the representatives of Company A, who indicated that Company A expected to respond later that day as to whether it would be interested in exploring a strategic transaction.

On October 27, 2021, the Company Board held a meeting by videoconference, which included senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Dr. Fambrough updated the Company Board regarding the communications with representatives of Parent including regarding its willingness to indicate an increased proposed value and request for exclusivity, and communications with representatives of Company A regarding its potential interest in a strategic transaction. Representatives of Centerview also provided an update, noting that Company A was evaluating its interest in exploring a potential acquisition of the Company. The Company Board discussed matters including Parent's interest and request for exclusivity, the status of communications with Parent, next steps and concerns around confidentiality of a potential strategic transaction during the due diligence process and the effort to minimize disruption to the organization and reduce the risk of internal and external leaks. Following further discussion, the Company Board determined that the Company should not provide Parent with the requested exclusivity but should provide access to due diligence if Parent would proceed without exclusivity. The Company Board authorized Dr. Fambrough to communicate (and Dr. Fambrough communicated later that day) its response to Parent.

On October 27, 2021, a representative of Parent sent to a representative of the Company a draft of the non-disclosure agreement which included the reference to a period of exclusive negotiations between the Company and Parent. Later on October 27, 2021, Mr. Jørgensen submitted Parent's revised proposal to the Company to acquire all of the outstanding common stock of the Company at $38.00 per Share in cash, that did not contain the previously requested four-week exclusivity period (the "October 27 Proposal").

Later that day, Company A indicated its interest in exploring a potential strategic transaction involving a potential acquisition of the Company to representatives of Centerview and separately to Dr. Fambrough. Also later that day, a representative of Skadden provided a representative of Company A's legal counsel with an initial draft nondisclosure agreement.

On October 27 and 28, 2021, the Company entered into separate non-disclosure agreements with each of Parent and Company A, in anticipation of exchanging confidential information to evaluate a potential strategic transaction. The non-disclosure agreement entered into by the Company with Parent contained a standstill. The non-disclosure agreement entered into by the Company with Company A did not contain a standstill.

On October 28, 2021, a representative of Skadden provided a representative of Davis Polk & Wardwell LLP, legal counsel to Parent ("Davis Polk") with an initial draft of the Merger Agreement prepared by Skadden. During the period from October 28, 2021 through November 17, 2021, Skadden and Davis Polk discussed and exchanged drafts of the Merger Agreement and the corresponding disclosure schedules.

On October 29, 2021, the Company granted Parent and its legal and financial advisors access to due diligence materials through a virtual data room. In addition to their review of the virtual data room, Parent and its advisors participated in calls and in-person meetings with the Company's senior management and its representatives as part of Parent's due diligence investigation. Such due diligence calls and meetings and Parent's confirmatory due diligence investigation continued through the execution of the Merger Agreement.

On October 29, 2021, the Company's management met via teleconference with Parent and provided a management presentation. Also on October 29, 2021, the Company's management provided a management presentation to Company A.

On November 5, 2021, a representative of Company A called Dr. Fambrough and provided a verbal indication of potential interest in considering a strategic transaction to acquire all of the outstanding common stock of the Company at $29.00 per Share in cash. In light of the Company Board's previous instruction that Parent only receive access to due diligence materials if it improved its indicated interest to at least $38.00 per Share, Dr. Fambrough informed the representative of Company A that he believed the Company Board would require Company A to significantly improve the value of its verbal indication of interest to receive access to due diligence materials. On the same day, representatives of Centerview also spoke with representatives of Company A, and consistent with prior discussions with the Company Board, informed them that Company A would need to express interest at a significantly higher value in order to obtain access to due diligence materials.

On November 5, 2021, the Company Board held a meeting by videoconference, which included senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Dr. Fambrough and representatives of Centerview provided an update on the status of due diligence and interactions with Parent. Dr. Fambrough and representatives of Centerview also provided an update on discussions with Company A, and reported Company A's verbal indication of interest of $29.00 per Share in cash. After discussion, the Company Board confirmed its support for communicating to Company A that it would not be able to progress in due diligence without a significant increase in indicated value. The Company Board considered next steps and whether it would be beneficial to contact additional parties, and after discussing (including considering input from senior management and representatives of the Company's financial advisors), determined that it was unlikely additional parties would in fact engage or offer terms competitive with the October 27 Proposal, that a leak could be disruptive to the Company's personnel and third party relationships and could adversely impact Parent's or Company A's interest in continuing to pursue a strategic transaction, and concluded not to contact additional parties at that time.

On November 5, 2021, representatives of Company A held a call with representatives of Centerview. Representatives of Centerview communicated to Company A the Company Board's view that Company A's verbal indication of interest of $29.00 per Share in cash was insufficient to progress in due diligence and that Company A would need to increase its offer significantly and in a timely fashion in order to move forward in the negotiation of a potential acquisition of the Company.

On November 5, 2021, members of the Company's and Parent's senior management teams planned in-person meetings by Parent to the Company's main offices and laboratory in Lexington, Massachusetts on November 11, 2021. That same day, members of Parent's senior management expressed interest in targeting signing a Merger Agreement the evening of November 17 and announcing on November 18 in order to be in a position to close the acquisition before the end of the year.

On November 8, 2021, representatives of Company A held a call with Dr. Fambrough and representatives of Centerview. The representatives of Company A made a revised verbal indication of interest to acquire all of the outstanding common stock of the Company at $33.00 per Share in cash. Dr. Fambrough informed the representatives of Company A that he believed the Company Board would require Company A to significantly increase its revised verbal indication of interest to receive access to due diligence materials.

On November 8, 2021, the Company Board held a meeting by teleconference, which included senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Dr. Fambrough updated the Company Board on the planned timing for the strategic transaction with Parent, Parent's progress with due diligence, and Parent's planned in-person visit on November 10 and 11. The Company Board discussed the importance of confidentiality during the in-person visit. Dr. Fambrough also updated the Company Board that Company A had improved its verbal indication of interest to a price of $33.00 per Share, and that he had communicated to Company A his belief that the Company Board would require Company A to significantly increase its revised verbal indication of interest in order to proceed with due diligence and negotiation of a potential acquisition of the Company. Following discussion, the Company Board concluded that Company A had not moved sufficiently in price, despite the Company's prior feedback that it must significantly improve its proposed price in order to receive access to due diligence materials.

Later that day on November 8, 2021, at the prior instruction of the Company Board, a representative of Centerview contacted a representative of Company A to inform Company A of the Company Board's view that Company A's verbal indication of interest at $33.00 per Share was insufficient to progress into due diligence and that Company A was encouraged to submit an improved offer in a timely fashion if Company A wanted to pursue a potential strategic transaction.

Also on November 8, 2021, Davis Polk exchanged a draft of the Merger Agreement with Skadden.

On November 10 and 11, 2021, representatives of the Company management, Parent and Centerview met at the Company's offices in Lexington, Massachusetts for a number of in-person meetings.

On November 12, 2021, following discussion of material open issues, including the scope of the conditions to closing (including the definition of a material adverse effect) and termination provisions, the circumstances in which a termination fee would be payable by the Company, the parties' commitment to obtaining the regulatory approvals for the transaction and extensions to the outside date of the Merger Agreement, and the treatment of equity awards in the proposed transaction, Skadden exchanged a draft of the Merger Agreement and a draft of the Disclosure Schedules with Davis Polk.

Later on November 12, 2021, the Company Board held a meeting by teleconference, which included senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Dr. Fambrough and Centerview provided an update on interactions with Parent and Company A. Representatives of Skadden reviewed key terms and issues in negotiation of the Merger Agreement. The Company Board authorized Dr. Fambrough to continue negotiations with Parent and to seek an increase in its offer price to a value greater than $38.00 per Share. The Company Board also instructed representatives of Skadden and senior management as to the Company's position on the material open issues under the draft Merger Agreement.

Following the November 12, 2021 Company Board meeting and continuing through November 17, 2021, representatives of Skadden and Davis Polk negotiated open terms on the Merger Agreement and related transaction documents, including the termination fee, Parent's level of commitment to secure antitrust approval, and the treatment of equity awards in the proposed strategic transaction with Parent.

On November 13, 2021, Mr. Jørgensen called Dr. Fambrough to discuss the progress of the transaction process. Mr. Jørgensen informed Dr. Fambrough that Parent's due diligence review was almost complete. The two discussed integration and employee retention following the strategic transaction. As instructed by the Company Board, Dr. Fambrough informed Mr. Jørgensen of the importance of the acceleration of all employee equity awards. Finally, Dr. Fambrough reminded Mr. Jørgensen that, prior to obtaining access to due diligence, he indicated Parent could find value greater than $38.00 per Share. Dr. Fambrough suggested that Parent improve its offer price to $40.00 per Share in cash, and Mr. Jørgensen indicated that Parent would respond to this request on November 15.

On November 15, 2021, Skadden sent Davis Polk an updated draft of the Disclosure Schedules.

On November 16, 2021, Mr. Jørgensen called Dr. Fambrough to discuss the Company's request that Parent increase its offer to greater than $38.00 per Share. Mr. Jørgensen verbally indicated that Parent would increase its offer price to $38.25 per Share but not beyond and would agree to the treatment of equity awards proposed by the Company.

Later that day, Davis Polk sent to Skadden an updated Merger Agreement including a proposed price of $38.25 per Share and the treatment of equity awards as agreed by Parent. Davis Polk also sent to Skadden an updated draft of the Disclosure Schedules.

On November 16, 2021, the Company Board held a meeting by teleconference, which included senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Skadden reviewed with the board the increased price of $38.25 per Share included in the recent draft of the Merger Agreement sent to Skadden by Davis Polk. Additionally, representatives of Centerview confirmed that they had heard nothing further from Company A since Centerview's previous conversation with Company A on November 8 when Centerview informed Company A that Company A would need to significantly increase its verbal indication of interest of $33.00 per Share in cash if Company A wished to pursue a potential acquisition of the Company. Following discussion, the Company Board approved pursuing a strategic transaction with Parent on the basis of Parent's offer price of $38.25. The Company Board considered that neither Centerview nor SVB Leerink had any conflicts of interest that would limit their ability to represent the Company as financial advisors in connection with the strategic transaction with Parent. The Company Board approved the entry into engagement letters with Centerview and SVB Leerink to serve as financial advisors to the Company in connection with the strategic transaction with Parent. Later that day, the Company entered into engagement letters with each of Centerview and SVB Leerink.

On November 17, 2021, Skadden returned to Davis Polk a revised version of the Merger Agreement and a revised draft of the Disclosure Schedules. Over the course of the November 17, 2021, Skadden and Davis Polk exchanged final comments on the Merger Agreement and Disclosure Schedules. Later that day, Skadden and Davis Polk finalized the Merger Agreement and Disclosure Schedules for execution by the Company and Parent.

On November 17, 2021, the Company Board held a meeting by teleconference, which included members of senior management and representatives of Centerview, SVB Leerink, Skadden, and Goodwin. Representatives of Skadden updated the Company Board on the resolution of terms of the Merger Agreement and reviewed other legal matters, including fiduciary duties. Representatives of Centerview and SVB Leerink reviewed with the Company Board their financial analysis of the consideration of the Offer Price. The Company Board then discussed the structure of the strategic transaction and reasons for pursuing the strategic transaction.

Later that evening, the Company Board held a second meeting by teleconference, which included members of senior management and representatives of Centerview, SVB Leerink, Skadden and Goodwin. Representatives of Skadden updated the board of the final terms of the Merger Agreement. Centerview and SVB Leerink both rendered to the Company Board separate oral opinions, which were subsequently confirmed by the delivery of separate written opinions, dated November 17, 2021, which as of such date and based upon and subject to the various assumptions made, procedures followed, matters considered and qualifications and limitations on the review undertaken in preparing each such opinion as set forth therein, that the Offer Price proposed to be paid to the holders of Shares (other than as specified in such opinion) in the Offer pursuant to the Merger Agreement was fair, from a financial point of view, to such holders. For a detailed discussion of Centerview's and SVB Leerink's opinions, please see "—Opinion of the Company's Financial Advisors—Centerview—Opinion of Centerview" and "Opinions of the Company's Financial Advisors—SVB Leerink—Opinion of SVB Leerink" in the Company's Schedule 14D-9. The opinions delivered by Centerview and SVB Leerink are attached to the Company's Schedule 14D-9 as Annex I and II, respectively. The Company Board then discussed the strategic transaction structure and reasons for pursuing a strategic transaction. Following discussion, the Company Board unanimously (i) determined that the Merger Agreement, the Offer and the Merger are fair to, and in the best interest of, the Company and its stockholders; (ii) declared that it is advisable for the Company to enter into the Merger Agreement; (iii) approved the execution, delivery and performance by the Company of the Merger Agreement and the consummation of the transactions contemplated by the Merger Agreement, including the Offer and the Merger; (iv) agreed that the Merger shall be effected under Section 251(h) of the DGCL; (v) resolved to recommend that the Company's stockholders accept the Offer and tender their Shares pursuant to the Offer; and (vi) declared that the Chief Executive Officer, was thereby authorized to execute and deliver the Merger Agreement in the form presented to the Company Board.

Following the second Company Board meeting on November 17, 2021, before the start of trading on Nasdaq on November 18, 2021, the Company, Parent, and Purchaser executed and delivered the Merger Agreement.

Before the opening of trading on Nasdaq on November 18, 2021, the Company and Parent each released a press release announcing the execution of the Merger Agreement and the forthcoming commencement of a tender offer to acquire all the outstanding common stock of the Company for the Offer Price, and the Company filed a current report on Form 8-K.

On November 24, 2021, Purchaser commenced the Offer and the Company filed a Schedule 14D-9.

11. Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements.

Purpose of the Offer and Plans for the Company.

Purpose of the Offer. The purpose of the Offer and the Merger is for Parent and its affiliates, through Purchaser, to acquire control of, and the entire equity interest in, the Company. Pursuant to the Merger, Parent will acquire all of the stock of the Company not purchased pursuant to the Offer or otherwise. Stockholders of the Company who sell their Shares in the Offer will cease to have any equity interest in the Company or any right to participate in its earnings and future growth.

Merger Without a Stockholder Vote. If the Offer is consummated, we will not seek the approval of the Company's remaining public stockholders before effecting the Merger. Section 251(h) of the DGCL provides that following consummation of a successful tender offer for a public corporation, and subject to certain statutory provisions, if the acquiring corporation owns at least the amount of shares of each class of stock of the target corporation that would otherwise be required to adopt a merger agreement for the target corporation, and the other stockholders receive the same consideration for their stock in the merger as was payable in the tender offer, the acquiring corporation can effect a merger without a vote of the stockholders of the target corporation. Accordingly, if we consummate the Offer, we intend to effect the closing of the Merger (the "Closing") without a vote of the stockholders of the Company in accordance with Section 251(h) of the DGCL, upon the terms and subject to the satisfaction or waiver of the conditions to the Merger, as soon as practicable after the consummation of the Offer. Accordingly, we do not expect there to be a significant period of time between the consummation of the Offer and the consummation of the Merger.

Plans for the Company. At the Effective Time, the certificate of incorporation of the Company will be amended and restated in its entirety pursuant to the terms of the Merger Agreement. As of the Effective Time, the bylaws of the Surviving Corporation will be amended and restated to conform to the bylaws of Purchaser as in effect immediately prior to the Effective Time, except that references to the name of Purchaser will be replaced by references to the name of the Surviving Corporation. Purchaser's directors and officers immediately prior to the Effective Time will be the initial directors and officers of the Surviving Corporation until their respective successors are duly elected and qualified, or their earlier death, resignation or removal. See "Summary of the Merger Agreement—Board of Directors and Officers" below.

Parent and Purchaser are conducting a detailed review of the Company and its assets, corporate structure, capitalization, indebtedness, operations, properties, policies, management and personnel, and will consider which changes would be desirable in light of the circumstances that exist upon completion of the Offer and the Merger. Parent and Purchaser will continue to evaluate the business and operations of the Company during the pendency of the Offer and after the consummation of the Offer and the Merger and will take such actions as they deem appropriate under the circumstances then existing. Thereafter, Parent intends to review such information as part of a comprehensive review of the Company's business, operations, capitalization, indebtedness and management with a view to optimizing development of the Company's potential in conjunction with the Company's or Parent's existing businesses. Possible changes could include changes in the Company's business, corporate

structure, certificate of incorporation, bylaws, capitalization, board of directors and management. Plans may change based on further analysis and Parent, Purchaser and, after completion of the Offer and the Merger, the reconstituted Company Board, reserve the right to change their plans and intentions at any time, as deemed appropriate.

Except as disclosed in this Offer to Purchase, Parent and Purchaser do not have any present plan or proposal that would result in the acquisition by any person of additional securities of the Company, the disposition of securities of the Company, an extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving the Company or the purchase, sale or transfer of a material amount of assets of the Company.

Summary of the Merger Agreement and Certain Other Agreements.

Merger Agreement

The following summary of certain provisions of the Merger Agreement and all other provisions of the Merger Agreement discussed herein are qualified by reference to the Merger Agreement itself, which is incorporated herein by reference. We have filed a copy of the Merger Agreement as Exhibit (d)(1) to the Schedule TO. The Merger Agreement may be examined and copies may be obtained at the places and in the manner set forth in Section 9 —"Certain Information Concerning Parent and Purchaser." Stockholders and other interested parties should read the Merger Agreement for a more complete description of the provisions summarized below. Capitalized terms used herein and not otherwise defined have the respective meanings set forth in the Merger Agreement.

The Merger Agreement has been filed with the SEC and incorporated by reference herein to provide investors and stockholders with information regarding the terms of the Offer and the Merger. It is not intended to provide any other factual information about Parent, Purchaser or the Company. The representations, warranties and covenants contained in the Merger Agreement were made only as of specified dates for the purposes of such agreement, were (except as expressly set forth therein) solely for the benefit of the parties to such agreement and may be subject to qualifications and limitations agreed upon by such parties. In particular, in reviewing the representations, warranties and covenants contained in the Merger Agreement and any description thereof contained or incorporated by reference herein, it is important to bear in mind that such representations, warranties and covenants were negotiated with the principal purpose of allocating risk among the parties, rather than establishing matters as facts. Such representations, warranties and covenants may also be subject to a contractual standard of materiality different from those generally applicable to stockholders and reports and documents filed with the SEC, and in some cases were qualified by disclosures set forth in confidential disclosure schedules that were provided by the Company to Parent and Purchaser but not filed with the SEC as part of the Merger Agreement. Investors and stockholders are not third-party beneficiaries under the Merger Agreement, except with respect to their right to receive the Offer Price following the Offer Acceptance Time or to receive the Merger Consideration (as defined below). Accordingly, investors and stockholders should not rely on such representations, warranties and covenants as characterizations of the actual state of facts or circumstances described therein. Information concerning the subject matter of such representations, warranties and covenants, which do not purport to be accurate as of the date of this Offer to Purchase, may have changed since the date of the Merger Agreement, which subsequent information may or may not be fully reflected in the parties' public disclosures.

The Offer

The Merger Agreement provides that Purchaser will commence the Offer no later than November 24, 2021. Purchaser's obligation to accept for payment and pay for Shares validly tendered in the Offer is subject to the satisfaction or, to the extent waivable by Parent or Purchaser, the waiver of the Offer Conditions that are described in Section 13—"Conditions of the Offer." Subject to the satisfaction or waiver of the Offer Conditions that are described in Section 13—"Conditions of the Offer," the Merger Agreement provides that Purchaser will,

and Parent will cause Purchaser to, promptly after Expiration Date, accept for payment all Shares tendered and not validly withdrawn pursuant to the Offer and, promptly after the Offer Acceptance Time, pay for such Shares. The Offer will expire at one minute after 11:59 p.m., Eastern Time on December 22, 2021, unless we extend the Offer pursuant to the terms of the Merger Agreement.

Purchaser expressly reserves the right to (i) increase the Offer Price, (ii) waive any Offer Condition and (iii) make any other changes in the terms and conditions of the Offer that are not inconsistent with the terms of the Merger Agreement, except that the Company's prior written approval is required for Parent or Purchaser to:

- decrease the Offer Price;
- change the form of consideration payable in the Offer;
- decrease the maximum number of Shares sought to be purchased in the Offer;
- impose conditions or requirements on the Offer in addition to the Offer Conditions;
- amend, modify or waive the Minimum Condition, the Termination Condition, the HSR Condition or the Governmental Impediment Condition;
- amend or modify any other term of the Offer in a manner that reasonably could adversely affect, any holder of Shares in its capacity as such;
- terminate the Offer or accelerate, extend or otherwise change the Expiration Date except as required or provided by the terms of the Merger Agreement; or
- provide any "subsequent offering period" (or any extension thereof) within the meaning of Rule 14d-11 under the Exchange Act.

The Merger Agreement contains provisions to govern the circumstances under which Purchaser is required to, and Parent is required to cause Purchaser to, extend the Offer. Specifically, the Merger Agreement provides that:

- if, as of the then scheduled Expiration Date, any Offer Condition has not been satisfied (unless such condition is waivable by Purchaser or Parent and has been waived), Purchaser, in its discretion may (and without the Company's or any other person's consent) extend the Offer for additional periods of up to ten business days per extension, to permit such Offer Condition to be satisfied;
- Purchaser has agreed to extend the Offer from time to time for any period required by any legal requirement, any interpretation or position of the SEC or its staff or Nasdaq applicable to the Offer, and for periods of up to ten business days per extension until any waiting period or any extension thereof applicable to the consummation of the Offer under the HSR Act has expired or terminated; and
- in the event any Offer Condition is not satisfied and has not been waived (to the extent waivable by Purchaser or Parent) as of the then-scheduled Expiration Date, Purchaser has agreed to, upon the Company's request, extend the Offer on one or more occasions for an additional period of up to ten business days per extension, to permit such Offer Condition to be satisfied.

However, Purchaser is not required to extend the Offer beyond the earlier to occur of the valid termination of the Merger Agreement in compliance with its terms and the End Date (defined in the Merger Agreement as May 17, 2022, or as late as September 17, 2022, in the event the End Date has been extended as provided in the Merger Agreement) (such earlier occurrence, the "Extension Deadline") and may not extend the Offer beyond the Extension Deadline without the Company's prior written consent. Subject to the parties' respective termination rights under the Merger Agreement, Purchaser will not terminate or withdraw the Offer or permit the Offer to expire, prior to the Extension Deadline without the Company's prior written consent.

Upon any valid termination of the Merger Agreement, Purchaser has agreed that it will immediately, irrevocably and unconditionally terminate the Offer and Purchaser will not acquire any Shares pursuant to the Offer.

The Merger

The Merger Agreement provides that, following completion of the Offer and subject to the terms and conditions of the Merger Agreement, and in accordance with Section 251(h) of the DGCL, at the Effective Time, Purchaser will be merged with and into the Company, the separate existence of Purchaser will cease, and the Company will continue as the Surviving Corporation in the Merger. Accordingly, Parent, Purchaser and the Company have agreed to take all necessary action to cause the Merger to become effective as soon as practicable following (but in any event on the same date as) the Offer Acceptance Time without a vote of the Company's stockholders in accordance with Section 251(h) of the DGCL, upon the terms and subject to the satisfaction or waiver of the conditions to the Merger.

As of the Effective Time, subject to the terms and conditions of the Merger Agreement, the certificate of incorporation of Purchaser, as in effect immediately prior to the Effective Time, will be the certificate of incorporation of the Surviving Corporation until thereafter amended in accordance with the provisions thereof and applicable legal requirements, subject to the indemnification provisions contained in the Merger Agreement.

As of the Effective Time, subject to the terms and conditions of the Merger Agreement, the bylaws of the Surviving Corporation will be amended and restated to conform to the bylaws of Purchaser, as in effect immediately prior to the Effective Time, until thereafter amended in accordance with the provisions thereof and applicable legal requirements (subject to the indemnification provisions contained in the Merger Agreement), except that references to the name of Purchaser shall be replaced by references to the name of the Surviving Corporation

As of the Effective Time and until the sixth anniversary thereof, the certificate of incorporation, bylaws and other charter and organizational documents of the Surviving Corporation and each of its subsidiaries will contain provisions no less favorable with respect to indemnification, advancement of expenses and exculpation of individuals who were, prior to the Effective Time, directors, officers and employees of the Company or its subsidiaries or any of their predecessor entities, than are presently set forth in the certificate of incorporation, bylaws and other charter and organizational documents of the Company and each of its subsidiaries, as amended through the Effective Time, which provisions will not be amended, repealed or otherwise modified in any manner that would adversely affect the rights thereunder of any such individuals, except as required by applicable legal requirements.

The obligations of the Company, Parent and Purchaser to complete the Merger are subject to the satisfaction or valid waiver as of the Closing of the following conditions:

- there has not been issued by any governmental body of competent jurisdiction in which Parent or the Company has business operations, and remaining in effect any temporary restraining order, preliminary or permanent injunction preventing the consummation of the Merger, and no legal requirement has been promulgated, enacted, issued or deemed applicable to the Merger by any governmental body in any jurisdiction in which Parent or the Company has business operations, which prohibits or makes illegal the consummation of the Merger; and
- Purchaser (or Parent on Purchaser's behalf) must have accepted for payment all Shares validly tendered (and not validly withdrawn) pursuant to the Offer.

Board of Directors and Officers

Following the Effective Time, the board of directors and officers of the Surviving Corporation will be the respective individuals who served as the directors and officers of Purchaser as of immediately prior to the Effective Time, until their respective successors have been duly elected and qualified, or until their earlier death, resignation or removal.

Conversion of Capital Stock at the Effective Time

Shares outstanding immediately prior to the Effective Time (other than (i) Shares held by the Company (or held in the treasury of the Company), which will be canceled and retired and cease to exist without consideration or payment (ii) Shares held by Parent, Purchaser or any other direct or indirect wholly owned subsidiary of Parent or the Company, which will be converted into such number of shares of the Surviving Corporation such that immediately following the Merger such holders hold the same percentage of interest in the Surviving Corporation as they owned in the Company immediately prior to the Merger (collectively, the "Excluded Shares") or (iii) and Shares held by a holder who properly exercises and perfects appraisal rights in accordance with Section 262 of the DGCL with respect to such Shares) will be converted at the Effective Time into the right to receive $38.25 per Share (the "Merger Consideration"), net to the seller in cash without interest and subject to any applicable withholding of taxes.

Each share of Purchaser's common stock outstanding immediately prior to the Effective Time will be converted into one share of common stock of the Surviving Corporation.

Promptly after the Offer Acceptance Time, Parent will deposit, or will cause to be deposited, with American Stock Transfer & Trust Company, LLC (the "Paying Agent"), cash in amounts sufficient to make the payment of the aggregate Offer Price. On or prior to the Closing date, Parent will deposit, or will cause to be deposited, with the Paying Agent cash as and when required in amounts sufficient to pay the aggregate Merger Consideration in the Merger.

Treatment of Equity Awards

- *Company Options*. Prior to the Effective Time, the Company may, in its discretion, accelerate the exercisability of any option to purchase Shares granted pursuant to a Company Equity Plan (other than the Company ESPP) (each a "Company Option"). At the Effective Time, each Company Option that is then outstanding and unexercised, and which has a per share exercise price that is less than the Merger Consideration, will be cancelled and converted into the right to receive a cash payment equal to (i) the excess, if any, of (x) the Merger Consideration over (y) the exercise price payable per Share under such Company Option multiplied by (ii) the total number of Shares subject to such Company Option immediately prior to the Effective Time (without regard to vesting).
- *Company RSUs*: At the Effective Time, each restricted stock unit to receive Shares granted pursuant to a Company Equity Plan (each a "Company RSU") that is then outstanding will be cancelled and converted into the right to receive a cash payment equal to (A) the Merger Consideration multiplied by (B) the total number of Shares subject to such Company RSU immediately prior to the Effective Time (without regard to vesting).
- *Company ESPP*. The Company will take all actions necessary pursuant to the terms of the Company's 2014 Employee Stock Purchase Plan (the "Company ESPP") or otherwise to (A) provide that (i) no new Offering Period (as defined in the Company ESPP) will be commenced under the Company ESPP following November 17, 2021, (ii) there will be no increase in the amount of participants' payroll deduction elections under the Company ESPP during the current Offering Period from those in effect as of November 17, 2021, (iii) no individuals will commence participation in the Company ESPP during the period from November 17, 2021 through the Effective Time and (iv) each purchase right issued pursuant to the Company ESPP will be fully exercised on the earlier of (x) the scheduled purchase date for such Offering Period and (y) the date that is seven business days prior to the Effective Time (with any participant payroll deductions not applied to the purchase of Shares returned to the participant), and (B) terminate the Company ESPP effective immediately prior to the Effective Time.

Representations and Warranties

In the Merger Agreement, the Company has made representations and warranties to Parent and Purchaser with respect to, among other things:

- corporate matters, such as due organization, organizational documents, good standing, qualification, power and authority;
- capitalization;
- authority relative to the Merger Agreement;
- required consents and approvals, and no violations of organizational documents, contracts or applicable law as a result of the Offer or Merger;
- SEC filings and financial statements;
- accuracy of information supplied for purposes of the Offer documents and the Schedule 14D-9;
- disclosure controls and internal controls over financial reporting;
- absence of certain changes and Material Adverse Effect from December 31, 2020, through the date of the Merger Agreement;
- real property;
- intellectual property;
- data privacy;
- material contracts;
- absence of undisclosed liabilities;
- compliance with legal requirements;
- regulatory matters;
- compliance with anti-corruption and anti-bribery laws;
- permits and licenses;
- tax matters;
- employees and employee benefit plans, including ERISA and certain related matters;
- labor matters;
- environmental matters;
- insurance;
- absence of litigation;
- state takeover statutes;
- opinion of the Company's financial advisor; and
- brokers' fees and expenses.

Some of the representations and warranties in the Merger Agreement made by the Company are qualified as to "materiality" or "Material Adverse Effect." A "Material Adverse Effect" means any event, occurrence, circumstance, change or effect which, individually or in the aggregate, has had or would reasonably be expected to have a material adverse effect on the business, assets, condition (financial or otherwise) or results of operations of the Company taken as a whole. The definition of "Material Adverse Effect" excludes the following

from constituting or being taken into account in determining whether there has been, or would reasonably be expected to be a Material Adverse Effect:

(i) any change in the market price or trading volume of the Company's stock or change in the Company's credit ratings (except that that the underlying causes of any such change may be considered in determining whether a Material Adverse Effect has occurred to the extent not otherwise excluded by this definition);

(ii) the announcement, pendency or performance of the Transactions (other than for the purposes of any representation or warranty contained in Section 3.21 of the Merger Agreement);

(iii) any event, occurrence, circumstance, change or effect generally affecting the industries in which the Company and its subsidiaries (together, the "Acquired Corporations") operate or in the economy generally or other general business, financial or market conditions;

(iv) any event occurrence, circumstance, change or effect arising directly or indirectly from or otherwise relating to general changes in the financial, credit, banking, securities or capital markets in the United States or any other country or region in the world (including interest rates, exchange rates, tariffs, trade wars and credit markets);

(v) any event, occurrence, circumstance, change or effect arising directly or indirectly from or otherwise relating to any political or social conditions (or changes in such conditions) in the United States or any other country or region in the world, act of terrorism, war, national or international calamity, natural disaster, acts of god, epidemic, pandemic or any other similar event;

(vi) the failure of the Company to meet internal or analysts' expectations or projections; *provided* that the underlying causes of such failure may be considered in determining whether a Material Adverse Effect has occurred to the extent not otherwise excluded by this definition;

(vii) any adverse effect arising from any action taken by the Company at the written direction or request of Parent or any action required to be taken by the Company pursuant to the Merger Agreement;

(viii) any event, occurrence, circumstance, change or effect resulting or arising from the identity of, or any facts or circumstances relating to, Parent, Purchaser or any of their respective affiliates;

(ix) any event, occurrence, circumstance, change or effect arising directly or indirectly from or otherwise relating to any change or proposed change in, or any compliance with or action taken for the purpose of complying with any change or proposed change in, any legal requirement or GAAP (or interpretations of any applicable legal requirements or GAAP); or

(x) any actual or potential sequester, stoppage, shutdown, default or similar event or occurrence by or involving any Governmental Body affecting a national or federal government as a whole;

except that, to the extent such events, circumstances, conditions, changes, developments or effects referred to in clauses (iii), (iv), (v), (ix) or (x) may be taken into account in determining whether there is, or would be reasonably expected to be, a Material Adverse Effect to the extent such event, occurrence, circumstance, change or effect disproportionately affects the Acquired Corporations relative to other participants in the industries in which the Acquired Corporations operate

In the Merger Agreement, Parent and Purchaser have made representations and warranties to the Company with respect to:

- corporate matters, such as due organization, good standing, power and authority;
- the formation and activities of Purchaser;
- authority relative to the Merger Agreement;
- required consents and approvals, and no violations of laws, governance documents or agreements;

- accuracy of information supplied for purposes of the Offer documents and the Schedule 14D-9;
- absence of litigation;
- sufficiency of funds to consummate the Offer and the Merger;
- ownership of securities of the Company;
- independent investigation regarding the Company;

Some of the representations and warranties in the Merger Agreement made by Parent and Purchaser are qualified as to "materiality," the ability to consummate the transactions contemplated by the Merger Agreement or "Parent Material Adverse Effect." For purposes of the Merger Agreement, a "Parent Material Adverse Effect" means any effect, change, event or occurrence that would or would reasonably be expected to, individually or in the aggregate, materially impair, prevent or materially delay Parent's or Purchaser's ability to consummate the Transactions in a timely manner on the terms set forth herein.

None of the representations and warranties of the parties to the Merger Agreement contained in the Merger Agreement or in any schedule, instrument or other document delivered pursuant to the Merger Agreement will survive the Effective Time.

Access to Information

From the date of the Merger Agreement until the earlier of the Effective Time and the termination of the Merger Agreement pursuant to its terms, upon reasonable advance notice to the Company, the Acquired Corporations will, and will cause the respective Representatives of the Acquired Corporations to provide Parent and Parent's Representatives (as defined in the Merger Agreement) with reasonable access during normal business hours of the Company to the Company's designated Representatives and assets and to all existing books, records, documents and information relating to the Acquired Corporations, and promptly provide Parent and Parent's Representatives with all reasonably requested information regarding the business of the Acquired Corporations and such additional financial, operating and other data and information regarding the Acquired Corporations, as Parent may reasonably request, in each case for any reasonable business purpose related to the consummation of the Transactions; provided, however, that any such access will be conducted at Parent's expense, at a reasonable time, under the supervision of appropriate personnel of the Acquired Corporations and in such a manner as not to unreasonably interfere with the normal operation of the business of the Acquired Corporations and subject to any reasonable restrictions imposed in connection with the COVID-19 pandemic. Nothing herein will require any of the Acquired Corporations to disclose any information to Parent if such disclosure would, in its reasonable discretion and after notice to Parent, (i) jeopardize any attorney-client or other legal privilege (so long as the Acquired Corporations have reasonably cooperated with Parent to permit such inspection of or to disclose such information on a basis that does not waive such privilege with respect thereto) or (ii) contravene any applicable legal requirement (so long as the Acquired Corporations has reasonably cooperated with Parent to permit disclosure to the extent permitted by legal requirements). With respect to the information disclosed pursuant to this paragraph, Parent will comply with, and will cause Parent's Representatives to comply with, all obligations under the Confidential Disclosure Agreement dated October 27, 2021, between the Company and Parent. Company and Parent also acknowledge and agree that Parent and the Company are also parties to the Collaboration and License Agreement, dated November 15, 2019, which will continue to apply with respect to the information disclosed pursuant thereto in accordance with its terms.

Conduct of Business Pending the Merger

The Company has agreed that, from the date of the Merger Agreement until the earlier of the Effective Time and the termination of the Merger Agreement pursuant to its terms it will, and will cause Acquired Corporations to, use reasonable best efforts to conduct its business in the ordinary course and to preserve intact its material business organizations and relationships with third parties except as expressly provided by the Merger Agreement or required by applicable legal requirements, as consented to in writing by Parent (which consent may

not be unreasonably withheld, delayed or conditioned), for any action required to be taken, reasonably taken or not taken pursuant to any COVID-19 measures as are reasonably necessary to protect the health and safety of the Acquired Corporations' employees and other individuals having business dealings with the Acquired Corporations, provided that unless doing so is impracticable due to emergency or urgent circumstances, the Company will provide advance notice to and reasonably consult with Parent prior to or promptly following the taking of any action that would be otherwise prohibited or restricted by the Merger Agreement . In addition, without Parent's written consent (which cannot be unreasonably withheld in certain cases), the Company will not, and will cause each of its Acquired Corporations not to, among other things and subject to specified exceptions (including specified ordinary course exceptions)

- establish a record date for, declare, set aside, pay any dividend or make any other distribution in respect of any shares of its capital stock (including the Shares); repurchase, redeem or otherwise reacquire any of the Shares, or any rights, warrants or options to acquire any of the Shares (other than to (1) repurchase Shares outstanding as of the date of the Merger Agreement pursuant to the Company's right to purchase Shares held by a Company Associate only upon termination of such person's employment or engagement by the Company, (2) repurchase Company Options or Company RSUs or (3) satisfy the exercise price and/or tax obligations with respect to the Company Options upon exercise);
- split, combine, subdivide or reclassify any Shares or other equity interests;
- sell, issue, grant, deliver, pledge, transfer, encumber or authorize the sale, issuance, grant, delivery, pledge, transfer or encumbrance of (A) any capital stock, equity interest or other security, (B) any option, call, warrant, restricted securities or right to acquire any capital stock, equity interest or other security, or (C) any instrument convertible into or exchangeable for any capital stock, equity interest or other security; *provided*, *however*, the Company may issue Shares as required to be issued upon the exercise of Company Options or settlement of Company RSUs that, in each case, are outstanding as of the date of the Merger Agreement and as required pursuant to the terms of the Company Equity Plan governing such awards as in effect on the date of this Merger Agreement, and may, subject to Section 6.4 of the Merger Agreement, issue any Shares issuable to participants in the Company ESPP;
- except as required under any Employee Plan (as defined in the Merger Agreement) in effect on November 17, 2021, or as otherwise contemplated by the Merger Agreement, (i) establish, adopt, enter into, terminate or materially amend any Employee Plan (or any plan, program, arrangement or agreement that would be an Employee Plan if it were in existence on November 17, 2021), (ii) amend or waive any of its material rights under, or accelerate the vesting under, any provision of any of the Employee Plans (or any plan, program, arrangement or agreement that would be an Employee Plan if it were in existence on November 17, 2021), (iii) grant or increase any severance, retention or termination pay to any current or former employee, officer, director or independent contractor of any of the Acquired Corporations, (iv) grant any employee, officer, director or independent contractor any of the Acquired Corporations any increase in compensation or benefits, (v) grant any equity, equity-based or other incentive awards to, or discretionarily accelerate the vesting or payment of any such awards held by, any current or former employee, officer, director or independent contractor of any of the Acquired Corporations, (vi) hire any Key Employees (as defined in the Merger Agreement) or (vii) terminate the employment of any Key Employees other than for cause (except that the Company may: (A) provide increases in base salary or wages of not more than 3% to non-Key Employees in the ordinary course of business consistent with past practice; (B) amend any Employee Plan to the extent required by applicable legal requirements; (C) enter into at-will employment agreements with non-Key Employees in the ordinary course of business consistent with past practice and (D) enter into agreements with consultants in the ordinary course of business consistent with past practice (and on terms consistent with the terms entered into with consultants by the Company); in the case of clauses (C) and (D), provided that such employment or consulting agreements are terminable without penalty on less than 90 days' advance notice and do not provide for severance, change in control or other material contractual benefits);

- amend or permit the adoption of any amendment to the Company's certificate of incorporation or bylaws or other charter or organizational documents;
- form any subsidiary, acquire any equity interest in any other entity or enter into any material joint venture, partnership or similar arrangement.
- make or authorize any capital expenditure (except that Acquired Corporations may make capital expenditures that do not exceed $300,000 individually (with consent not to be unreasonably withheld for expenditures exceeding $300,000) or $4,000,000 in the aggregate);
- acquire, lease, license, sublicense, pledge, sell or otherwise dispose of, divest or spin-off, abandon, waive, create or incur any Encumbrance (other than any Permitted Encumbrances) on, relinquish or permit to lapse, transfer or assign any material right or other material asset or property (other than Intellectual Property Rights, which are addressed below), except (A) in the ordinary course of business, (B) pursuant to dispositions of obsolete, surplus or worn out assets that are no longer useful in the conduct of the business of the Acquired Corporations, (C) capital expenditures permitted by clause (vii) of this Section 5.2(b) or (D) transactions between the Company and a wholly owned Acquired Corporation or between wholly owned Acquired Corporations;
- acquire, lease, license, sublicense, pledge, sell, or otherwise dispose of, divest or spin-off, abandon, waive, create or incur any Encumbrance (other than certain Permitted Encumbrances as described in the Merger Agreement) on, relinquish or permit to lapse (other than any Patent expiring at the end of its statutory term), grant any other right or immunity under (including any option, right of first refusal or other preferential right or covenant not to sue), transfer or assign, or fail to take any action necessary to maintain, enforce or protect, any Intellectual Property Right, except (A) granting non-exclusive licenses (1) pursuant to clinical trial agreements or supply agreements in which clinical trials or supply services are being performed for an Acquired Corporation, or other similar agreements, in each case, that are entered into by an Acquired Corporation in the ordinary course of business, and (2) where the grant of rights to use any Intellectual Property Rights are incidental, and not material to, any performance under each such agreement and (B) transactions between the Company and a wholly owned Acquired Corporation or between wholly owned Acquired Corporations;
- lend money or make capital contributions or advances to or make investments in, any person, or incur, issue or guarantee any indebtedness (except for advances to employees and consultants for travel and other business related expenses in the ordinary course of business consistent with past practice and in compliance with the Company's policies related thereto), other than between the Company and a wholly owned Acquired Corporation or between wholly owned Acquired Corporations;
- (A) amend or modify in any material respect, or voluntarily terminate, any Material Contract or (B) enter into any contract that would constitute a Material Contract if it were in effect on the date of the Merger Agreement;
- except as required by applicable legal requirements or GAAP, (A) make any material change to any accounting method or accounting period used for tax purposes that has a material effect on taxes; (B) make, rescind or change any material tax election; (C) file a material amended tax return; (D) enter into a closing agreement with any Governmental Body regarding any material tax liability or assessment; (E) settle, compromise or consent to any material tax claim or assessment or surrender a right to a material tax refund, offset or other reduction in tax liability; (F) waive or extend the statute of limitations with respect to any material tax or material tax return (except in connection with automatic extensions of time to file tax returns granted in the ordinary course of business); or (G) or take any other similar action outside of the ordinary course of business relating to the filing of any tax return or the payment of any tax, if such election, adoption, change, amendment, agreement, settlement, surrender, consent or other action would have the effect of materially increasing the tax liability of any Acquired Corporation for any period ending after the Closing Date or materially decreasing any tax attribute of any Acquired Corporation existing on the Closing Date;

- settle, release, waive or compromise any legal proceeding or other claim (or threatened legal proceeding or other claim) against any Acquired Corporation, other than any settlement, release, waiver or compromise that (A) results solely in monetary obligations involving only the payment of monies by the Acquired Corporations of not more than $25,000 in the aggregate (excluding monetary obligations that are funded by an indemnity obligation to, or an insurance policy of, any Acquired Corporation) or (B) results in no monetary or other material non-monetary obligation of any Acquired Corporation;
- enter into, amend or terminate any collective bargaining agreement;
- adopt or implement any stockholder rights plan or similar arrangement;
- adopt a plan or agreement of complete or partial liquidation or dissolution, merger, consolidation, restructuring, recapitalization or other reorganization of the Company or any of the Acquired Corporations;
- authorize, or agree or commit to take, any of the foregoing actions.

Filings, Consents and Approvals

Each of Parent, Purchaser and the Company agree to use their reasonable best efforts to take or cause to be taken promptly any and all steps necessary to avoid or eliminate each and every impediment under the antitrust laws, that may be asserted by any Governmental Body or any other party, so as to enable the Closing to occur as promptly as practicable, but in no case later than the End Date, including providing as promptly as reasonably practicable all information required by any Governmental Body pursuant to its evaluation of the Transactions under the HSR Act or other applicable Antitrust Laws (including any Request for Additional Information pursuant to the HSR Act); provided, however, that, notwithstanding anything to the contrary contained in the Merger Agreement, (x) neither Parent nor Purchaser will be obligated to take any of the following actions if such actions, individually or in the aggregate, would materially impair the anticipated benefits of the Transactions, taken as a whole, to Parent (and, without Parent's prior written consent, no Acquired Corporation will take any of the following actions in furtherance of this paragraph): (i) proposing, negotiating, committing to or effecting, by consent decree, hold separate order or otherwise, the sale, divestiture, license, hold separate or other disposition of any asset, interest or business; (ii) terminating, relinquishing, modifying, transferring, assigning, restructuring, or waiving existing agreements, collaborations, relationships, ventures, contractual rights, obligations or other arrangements; and (iii) any other behavioral undertakings and commitments whatsoever including but not limited to creating or consenting to create any relationships, ventures, contractual rights, obligations, or other arrangements and, in each case, to enter, or offer to enter, into agreements and stipulate to the entry of an order or decree or file appropriate applications with any Governmental Body in connection with any of the foregoing and (y) Parent will not be required to take any actions described in subclauses (x)(i) through (x)(iii) above with respect to its business, assets or operations. Each of Parent, Purchaser and the Company will defend through litigation on the merits any claim asserted in court by any party under Antitrust Laws in order to avoid entry of, or to have vacated or terminated, any decree, order or judgment (whether temporary, preliminary or permanent) that could restrain, delay, or prevent the Closing by the End Date.

Subject to the terms and conditions of the Merger Agreement, each of the parties will (and will cause their respective affiliates, if applicable, to): (i) promptly, but in no event later than five business days after the date hereof, unless otherwise mutually agreed to by each of Parent, Purchaser and the Company, make an appropriate filing of all notification and report forms as required by the HSR Act with respect to the Transactions and (ii) cooperate with each other in determining whether, and promptly preparing and making, but in no event later than five business days after the date hereof, any other filings, notifications or other consents are required to be made with, or obtained from, any other Governmental Bodies in connection with the Transactions. Each of Parent, Purchaser and the Company agrees not to withdraw their filing under the HSR Act without the prior written consent of the other Party, and each Party agrees not to extend any waiting period under the HSR Act or

enter into any agreement with any Governmental Authority to delay, or otherwise not to consummate as soon as practicable, any of the Transactions contemplated by the Merger Agreement except with the prior written consent of the other Party.

Without limiting the generality of anything contained in Section 6.2 of the Merger Agreement, until the earlier of the Effective Time or the termination of the Merger Agreement pursuant to its terms, each Party will (i) give the other parties prompt notice of the making or commencement of any request, inquiry, investigation, action or legal proceeding brought by a Governmental Body or brought by a third party before any Governmental Body, in each case, with respect to the Transactions under the Antitrust Laws, (ii) keep the other parties reasonably informed as to the status of any such request, inquiry, investigation, action or legal proceeding, (iii) promptly inform the other parties of, and give the other party reasonable advance notice of, and the opportunity to participate in, any communication to or from the FTC, DOJ, or any other Governmental Body in connection with any such request, inquiry, investigation, action or legal proceeding, (iv) promptly furnish to the other party, subject to an appropriate confidentiality agreement to limit disclosure to counsel and outside consultants, with copies of documents provided to or received from any Governmental Body in connection with any such request, inquiry, investigation, action or legal proceeding (other than highly sensitive or valuation information (which can be redacted)), (v) subject to an appropriate confidentiality agreement to limit disclosure to counsel and outside consultants, consult and cooperate with the other Parties and consider in good faith the views of the other Parties in connection with any analysis, appearance, presentation, memorandum, brief, argument, opinion or proposal made or submitted in connection with any such request, inquiry, investigation, action or legal proceeding, and (vi) except as may be prohibited by any Governmental Body or by any legal requirement, in connection with any such request, inquiry, investigation, action or legal proceeding in respect of the Transactions, permit authorized Representatives of the other party to be present at each meeting or conference relating to such request, inquiry, investigation, action or legal proceeding and to have access to and be consulted in connection with any argument, opinion or proposal made or submitted to any Governmental Body in connection with such request, inquiry, investigation, action or legal proceeding.

Employee Benefits

For a period of one year following the Effective Time, Parent has agreed to provide, or cause to be provided, to each employee of the Company or its subsidiaries who is employed by the Company or its Subsidiaries as of immediately prior to the Effective Time and who continues to be actively employed by the Surviving Corporation (or any affiliate thereof) during such one-year period (each, a “Continuing Employee”) with (i) a base salary or wage rate that is no less than that provided to such Continuing Employee by any Acquired Corporation immediately prior to the Effective Time, (ii) annual cash incentive compensation opportunities that are no less favorable, in the aggregate, than those provided to such Continuing Employee by any Acquired Corporation immediately prior to the Effective Time and (iii) other compensation and employee benefits (other than equity compensation and other long-term incentives, change in control, retention, transition, stay or similar arrangements) that in the aggregate are substantially comparable to the compensation and employee benefits (other than equity compensation and other long-term incentives, change in control, retention, transition, stay or similar arrangements) provided to such Continuing Employee by any Acquired Corporation immediately prior to the Effective Time. For a period of one year following the Effective Time, Parent will cause each Continuing Employee (other than Continuing Employees who have contractual severance protection from the Company and its subsidiaries) to participate in the severance program of Parent applicable to United States employees (as in effect on November 17, 2021 and made available to the Company on or prior to such date) and will cause such Continuing Employees to be credited with their years of service with the Company or a Subsidiary for purposes of determining the amount of severance payments and benefits thereunder; provided that the minimum weeks of severance payable to an eligible Continuing Employee under such severance program will be 13 weeks, notwithstanding any provision of the program to the contrary.

To the extent that service is relevant for eligibility or vesting under any benefit plan of Parent and/or the Surviving Corporation (each such plan, a "Parent Plan"), then, following the Effective Time, Parent will ensure that such Parent Plan will, for purposes of eligibility and vesting, but not for purposes of benefit accrual, credit Continuing Employees for service prior to the Effective Time with the Company and its affiliates or their respective predecessors to the same extent that such service was recognized prior to the Effective Time under the corresponding benefit plan of the Company. In addition, Parent and/or the Surviving Corporation will credit each Continuing Employee with paid time off equal to the paid time off the Continuing Employee had accrued, but had not used, with the Company as of the Effective Time. For purposes of determining the amount of paid time off only, to the extent that service is relevant for paid time off levels, Parent will ensure that any paid time off plan of Parent and/or the Surviving Corporation will, for purposes of paid time off levels, credit Continuing Employees for service prior to the Effective Time with the Company to the same extent that such service was recognized prior to the Effective Time.

Following the Effective Time, Parent or an affiliate of Parent will (i) waive any preexisting condition limitations otherwise applicable to Continuing Employees and their eligible dependents under any plan of Parent or an Affiliate that provides health benefits in which Continuing Employees are eligible to participate following the Effective Time, other than any limitations that were in effect with respect to such employees immediately prior to the Effective Time under the corresponding Employee Plan, (ii) for the calendar year in which the Effective Time occurs, honor any deductible, co-payment and out-of-pocket maximums incurred by the Continuing Employees and their eligible dependents under the health plans in which they participated immediately prior to transitioning into a plan of Parent or an Affiliate during the portion of such calendar year prior to such transition in satisfying any deductibles, co-payments or out-of-pocket maximums under the corresponding health plans of Parent or an Affiliate and (iii) waive any waiting period limitation or evidence of insurability requirement that would otherwise be applicable to a Continuing Employee and his or her eligible dependents on or after the Effective Time, in each case to the extent such Continuing Employee or eligible dependent had satisfied any similar limitation or requirement under an analogous Employee Plan prior to the Effective Time.

The Company's board of directors (the "Company Board") (or the appropriate committee thereof) will adopt resolutions and take such corporate action as is necessary or appropriate to terminate the Company 401(k) Savings Plan (the "Company 401(k) Plan"), effective as of the day prior to the Closing Date, contingent upon the occurrence of the Closing, unless Parent notifies the Company in writing not less than 5 business days before the Offer Acceptance Time that it has determined not to terminate the Company 401(k) Plan. If the Company 401(k) Plan is terminated, Parent will, or will cause one of its affiliates to, have in effect a tax qualified defined contribution retirement plan as soon as reasonably practicable following the Effective Time that includes a qualified cash or deferred arrangement within the meaning of Section 401(k) of the Code (the "Parent 401(k) Plan") in which each Continuing Employee who is actively employed at the Closing and was a participant in the Company 401(k) Plan will be eligible to participate as soon as reasonably practicable following the Closing, and as soon as practicable following the Closing, the account balances under the Company 401(k) Plan will be distributed to the participants, and Parent will, to the extent permitted by the Parent 401(k) Plan, permit such Continuing Employees to make rollover contributions to the Parent 401(k) Plan of "eligible rollover distributions" within the meaning of Section 401(a)(31) of the Code (excluding promissory notes evidencing participant loans), in the form of cash, in an amount equal to the full account balance distributed to such Continuing Employee from the Company 401(k) Plan. The Company Board (or the appropriate committee thereof) will adopt resolutions and take such corporate action as is necessary or appropriate to terminate each other Employee Plan that not less than 5 business days prior to the Closing Date Parent requests that the Company terminate effective as of the Closing Date, contingent upon the occurrence of the Closing. All resolutions, notices, participant communications or other documents issued, adopted or executed in connection with the termination of the Company 401(k) Plan and any other Employee Plan will be subject to Parent's prior review and reasonable comment.

No provision of the Merger Agreement is intended to, or will constitute the establishment or adoption of or an amendment to any employee benefit plan for purposes of ERISA or otherwise, and no current or former employee or any other individual associated therewith will be regarded for any purpose as a third-party beneficiary of the Agreement or have the right to enforce the provisions hereof. Nothing in the Merger Agreement will be construed to create a right in any person to employment with Parent, the Surviving Corporation or any other affiliate of the Surviving Corporation or to any compensation or benefits and the employment of each Continuing Employee will be "at will" employment.

Directors' and Officers' Indemnification and Insurance

Parent has agreed that, for a period of six years from the Effective Time, all rights to indemnification, advancement of expenses and exculpation from liabilities for acts or omissions occurring at or prior to the Effective Time (whether asserted or claimed prior to, at or after the Effective Time) now existing in favor of the current or former directors or officers of the Company and its subsidiaries and any indemnification agreement or other similar agreements of the Company and any of its subsidiaries, in each case as in effect on the date of the Merger Agreement, will continue in full force and effect in accordance with their respective terms, and Parent will cause the Surviving Corporation and its subsidiaries to perform its obligations thereunder. Parent will cause the certificate of incorporation, bylaws and other charter and organizational documents of the Surviving Corporation and its subsidiaries to contain provisions with respect to indemnification, advancement of expenses and exculpation of director, officer and employee (or comparable) liability that are no less favorable to the Indemnified Persons than those set forth in any Acquired Corporations' organizational documents as of the Effective Time, which provisions thereafter will not, for a period of at least six years from the Effective Time, be amended, altered, repealed or otherwise modified in any manner that would adversely affect the rights thereunder of the Indemnified Persons, except as required by applicable legal requirements.

In addition, Parent has agreed that, after the Effective Time, Parent will cause the Surviving Corporation and its subsidiaries to, and the Surviving Corporation agrees that it will, indemnify and hold harmless each individual who is as of the date of the Merger Agreement, or who becomes prior to the Effective Time, a director or officer of the Company or its subsidiaries or who is as of the date of the Merger Agreement, or who thereafter commences prior to the Effective Time, serving at the request of the Company or its subsidiaries as a director or officer of another person (the "Indemnified Persons"), against all claims, losses, liabilities, damages, judgments, inquiries, fines and reasonable fees, costs and expenses, including attorneys' fees and disbursements, incurred in connection with any claim, action, suit or proceeding, whether civil, criminal, administrative or investigative (including with respect to matters existing or occurring at or prior to the Effective Time, including the Merger Agreement and the transactions and actions contemplated thereby), arising out of or pertaining to the fact that the Indemnified Person is or was a director or officer of the Company or its subsidiaries or is or was serving at the request of the Company or its subsidiaries as a director or officer of another person, whether asserted or claimed prior to, at or after the Effective Time, to the fullest extent permitted under applicable legal requirements. The Merger Agreement provides that, in the event of any such claim, action, suit or proceeding, each Indemnified Person will be entitled to advancement of expenses incurred in the defense of any such claim, action, suit or proceeding from the Surviving Corporation or its subsidiaries, as applicable. If and only to the extent required by the DGCL, any Indemnified Person to whom expenses are advanced will be required to provide an undertaking to repay such advances if it is ultimately determined by final adjudication that such Indemnified Person is not entitled to indemnification. Further, the Surviving Corporation and its subsidiaries, as applicable, will reasonably cooperate in the defense of any such matter.

Prior to the Closing Date, in consultation with Parent, the Company will use commercially reasonable efforts to purchase (and if the Company does not purchase prior to the Closing Date, the Surviving Corporation may purchase on the Closing Date, in lieu of complying with the final sentence of this paragraph),"tail" directors' and officers' liability insurance for the Acquired Corporations and their current and former directors and officers who are currently covered by the directors' and officers' liability insurance coverage currently maintained by or for the benefit of the Acquired Corporations, such tail insurance to provide coverage in an amount not less than the

existing coverage and to have other terms not less favorable to the insured persons than the directors' and officers' liability insurance coverage currently maintained by or for the benefit of the Acquired Corporations with respect to claims arising from facts or events that occurred at or before the Effective Time; provided that in no event will the cost of any such tail insurance exceed the Maximum Amount. Parent and the Surviving Corporation will maintain such insurance policy in full force and effect for a period of six years following the Closing Date, and continue to honor the obligations thereunder. In the event that as of the Closing Date the "tail" directors' and officers' liability insurance policy under the first sentence of this paragraph has not been purchased, for a period of six years from and after the Effective Time, Parent and the Surviving Corporation will either cause to be maintained in effect the current policies of directors' and officers' liability insurance maintained by or for the benefit of the Acquired Corporations or provide substitute policies for the Acquired Corporations and their current and former directors and officers who are currently covered by the directors' and officers' liability insurance coverage currently maintained by or for the benefit of the Acquired Corporations, in either case, of not less than the existing coverage and having other terms not less favorable to the insured persons than the directors' and officers' liability insurance coverage currently maintained by or for the benefit of the Acquired Corporations with respect to claims arising from facts or events that occurred at or before the Effective Time (with insurance carriers having at least an "A" financial strength rating by A.M. Best with respect to directors' and officers' liability insurance), except that in no event will Parent or the Surviving Corporation be required to pay with respect to such insurance policies more than 350% of the aggregate annual premium most recently paid by the Acquired Corporations prior to the date of the Merger Agreement (the "Maximum Amount"), and if the Surviving Corporation is unable to obtain the insurance required by this paragraph it will obtain as much comparable insurance as possible for the years within such six-year period for a premium equal to the Maximum Amount.

The rights to advancement, exculpation and indemnification above (i) will survive the Offer Acceptance Time and the Effective Time; (ii) are intended to benefit, and will be enforceable by, each indemnified or insured party (including the Indemnified Persons) and his or her heirs or representatives; and (iii) are in addition to, and not in substitution for, any other rights to indemnification, advancement of expenses, exculpation or contribution that any such person may have by contract or otherwise.

Reasonable Best Efforts

Subject to the terms of the Merger Agreement (including the limitations described above in connection with the actions required to be taken by Parent under any antitrust laws), Parent and Purchaser has agreed to use its respective reasonable best efforts to take, or cause to be taken, all actions necessary to consummate the Offer and the Merger and make effective the other Transactions. In particular, each party has agreed to use its reasonable best efforts to (i) make all filings (if any) and give all notices (if any) required to be made and given by such party pursuant to any Material Contract in connection with the Offer and the Merger and the other Transactions to the extent requested in writing by Parent, (b) seek each consent (if any) required to be obtained pursuant to any Material Contract by such Party in connection with the Transactions to the extent requested in writing by Parent; *provided*, *however*, that in connection with obtaining any such consent, the Parties will have no obligation to pay any consent fee or to agree to any changes to any of the terms of such Material Contract and (c) subject to the same limitations as included in the proviso to Section 6.2(a) of the Merger Agreement, seek to lift any restraint, injunction or other legal bar to the Offer or the Merger brought by any third person against such party.

Stockholder Litigation

The Company will give Parent the opportunity to participate in the Company's defense or settlement of any litigation against the Company and/or its directors or officers relating to the Transactions and will give due consideration to Parent's advice with respect to such litigation. However, the Company will not settle any such litigation without Parent's prior written consent (which consent will not be unreasonably withheld, conditioned or delayed). The Company will promptly notify Parent of any such litigation and will keep Parent reasonably and promptly informed with respect to the status thereof.

Takeover Laws

If any "moratorium," "control share acquisition," "fair price," "supermajority," "affiliate transactions," or "business combination statute or regulation" or other similar state anti-takeover laws and regulations (the "Takeover Laws") may become, or may purport to be, applicable to the Transactions, Parent and the Company (and members of their respective boards of directors) have agreed to use their respective reasonable best efforts to grant such approvals and take such actions as are necessary so that the Transactions may be consummated as promptly as practicable on the terms and conditions contemplated by the Merger Agreement and otherwise act to lawfully eliminate the effect of any Takeover Law on any of the Transactions.

Section 16 Matters

The Company and the Company Board will, to the extent necessary, take appropriate action, prior to or as of the Offer Acceptance Time, to approve, for the purposes of Section 16(b) of the Exchange Act, the disposition and cancellation (or deemed disposition and cancellation) of Shares, Company RSUs and Company Options in the Merger by applicable individuals and to cause such dispositions and/or cancellations to be exempt under Rule 16b-3 promulgated under the Exchange Act.

Parent's Obligations

Parent will ensure that Purchaser duly performs, satisfies and discharges on a timely basis each of the covenants, obligations and liabilities applicable to Purchaser under the Merger Agreement, and Parent will be jointly and severally liable with Purchaser for the due and timely performance and satisfaction of each of said covenants, obligations and liabilities.

Stock Exchange Delisting and Deregistration

Prior to the Closing Date, the Company will cooperate with Parent and use its reasonable best efforts to take, or cause to be taken, all actions, and do or cause to be done all things, reasonably necessary, proper or advisable on its part under applicable legal requirements and rules and policies of Nasdaq to enable the delisting by the Surviving Corporation of the Shares from Nasdaq and the deregistration of the Shares under the Exchange Act as promptly as practicable after the Effective Time.

Notification of Certain Events

Subject to applicable legal requirements, each of the Company and Parent will promptly notify the other of (i) any notice or other communication received by such party from any Governmental Body in connection with the Merger Agreement, the Offer, the Merger or the other Transactions, or from any person alleging that the consent of such person is or may be required in connection with the Offer, the Merger or the other Transactions; or (ii) any legal proceeding commenced or, to any Party's knowledge, threatened in writing against, such party or any of its subsidiaries or otherwise relating to, involving or affecting such party or any of its subsidiaries, in each case in connection with, arising from or otherwise relating to the Offer, the Merger or any other Transaction.

No Solicitation.

Except as described below, until the earlier of the Effective Time or the valid termination of the Merger Agreement pursuant to its terms, the Acquired Corporations will not, and will cause their Representatives not to, directly or indirectly:

(i) continue any solicitation, knowing encouragement, discussions or negotiations with any persons that may be ongoing as of the date of the Merger Agreement with respect to an Acquisition Proposal;

(ii) (A) solicit, initiate or knowingly facilitate or encourage (including by way of furnishing non-public information) any inquiries regarding, or the making of any proposal or offer that constitutes, or could

reasonably be expected to lead to, an Acquisition Proposal, (B) engage in, continue or otherwise participate in any discussions or negotiations regarding, or furnish to any other person any non-public information in connection with, or for the purpose of soliciting or knowingly encouraging or facilitating, an Acquisition Proposal or any proposal or offer that could reasonably be expected to lead to an Acquisition Proposal or (C) enter into any letter of intent, acquisition agreement, agreement in principle or similar agreement with respect to an Acquisition Proposal or any proposal or offer that could reasonably be expected to lead to an Acquisition Proposal; or

(iii) waive or release any person from, forebear in the enforcement of, or amend any standstill agreement or any standstill provisions of any other contract.

Notwithstanding the above limitations or anything to the contrary contained in the Merger Agreement, if at any time on or after the date of the Merger Agreement and prior to the Offer Acceptance Time any Acquired Corporation or any of their Representatives receives an unsolicited bona fide Acquisition Proposal from any person, (i) the Company and its Representatives may contact such person solely to clarify the terms and conditions thereof and (ii) if the Company Board determines in good faith, after consultation with financial advisors and outside legal counsel, that such Acquisition Proposal constitutes or could reasonably be expected to lead to a Superior Offer, then the Company and its Representatives may take the following actions:

- furnish, pursuant to an Acceptable Confidentiality Agreement, information (including non-public information) with respect to the Acquired Corporations to the person who has made such Acquisition Proposal; provided that the Company will as promptly as practicable (and no later than one business day) provide to Parent any non-public information concerning the Acquired Corporations that is provided to any person to the extent access to such information was not previously provided to Parent or its Representatives; and
- engage in or otherwise participate in discussions or negotiations with the person making such Acquisition Proposal.

Until the earlier of the Effective Time and the termination of the Merger Agreement pursuant to its terms, the Company is required to (i) promptly (and in any event within one business day) notify Parent if any inquiries, proposals or offers with respect to an Acquisition Proposal are received by any Acquired Corporation and provide to Parent a copy of any written Acquisition Proposal (including any proposed term sheet, letter of intent, acquisition agreement or similar agreement with respect thereto) and a summary of any material unwritten terms and conditions thereof, and (ii) keep Parent reasonably informed of any material developments, discussions or negotiations regarding any Acquisition Proposal on a prompt basis (and in any event within one business day of such material development, discussion or negotiation).

“Acceptable Confidentiality Agreement” means any customary confidentiality agreement that (i) contains provisions that are not materially less favorable to the Company than those contained in the Confidentiality Agreement (it being understood that such agreement need not contain any “standstill” or similar provisions or otherwise prohibit the making of any Acquisition Proposal) and (ii) does not prohibit the Company from providing any information to Parent in accordance with, and otherwise complying with, this provisions.

“Acquisition Proposal” means any proposal or offer from any person (other than Parent and its affiliates) or “group,” within the meaning of Section 13(d) of the Exchange Act, relating to, in a single transaction or series of related transactions, any (A) acquisition of assets of the Company equal to more than 20% of the Company’s consolidated assets or to which more than 20% of the Company’s revenues or earnings on a consolidated basis are attributable, (B) issuance or acquisition of more than 20% of the Company’s outstanding common stock, (C) recapitalization, tender offer or exchange offer that, if consummated, would result in any person or group beneficially owning more than 20% of the Company’s outstanding common stock or (D) merger, consolidation, amalgamation, share exchange, business combination, recapitalization, liquidation, dissolution or similar transaction involving the Company that, if consummated, would result in any person or group beneficially owning more than 20% of the outstanding common stock, in each case other than the Transactions.

"Superior Offer" means a bona fide written Acquisition Proposal that the Company Board determines, in its good-faith judgment, after consultation with outside legal counsel and its financial advisors, is reasonably likely, to be consummated in accordance with its terms, taking into account all legal, regulatory, timing and financing aspects (including certainty of closing) of the proposal and the person making the proposal and other aspects of the Acquisition Proposal that the Company Board deems relevant, and, if consummated, would result in a transaction more favorable to the Company's stockholders (solely in their capacity as such) from a financial point of view than the Transactions (including after giving effect to proposals, if any, made by Parent pursuant to Section 6.1(b)(i) of the Merger Agreement); provided that for purposes of the definition of "Superior Offer," all references to "20%" in the definition of Acquisition Proposal are deemed to be references to "50%."

Nothing in the Merger Agreement will prohibit the Company from (i) taking and disclosing to the stockholders of the Company a position contemplated by Rule 14e-2(a), Rule 14d-9 or Item 1012(a) of Regulation M-A promulgated under the Exchange Act, including any "stop, look and listen" communication pursuant to Rule 14d-9(f) promulgated under the Exchange Act, or (ii) making any disclosure to the stockholders of the Company that is required by applicable legal requirements.

In the event any Acquired Corporation or any Representative of an Acquired Corporation (acting in its capacity as such on behalf of the Acquired Corporation) takes any action which, if taken by the Company, would constitute a breach of the obligations described above, the Company will be deemed to be in breach of the Merger Agreement.

Recommendation Change

As described above, and subject to the provisions described below, the Company Board has determined to recommend that the stockholders of the Company accept the Offer and tender their Shares to Purchaser in the Offer. The foregoing recommendation is referred to herein as the "Company Board Recommendation." The Company Board also agreed to include the Company Board Recommendation with respect to the Offer in the Schedule 14D-9 and has permitted Parent to refer to such recommendation in this Offer to Purchase and documents related to the Offer.

Except as described below, prior to the Effective Time or the termination of the Merger Agreement pursuant to its terms, neither the Company Board nor any committee thereof may:

(i) (A) withdraw (or modify in a manner adverse to Parent or Purchaser), or publicly propose to withdraw (or modify in a manner adverse to Parent or Purchaser), the Company Board Recommendation or (B) adopt, approve, recommend or declare advisable, or publicly propose to adopt, approve, recommend or declare advisable, any Acquisition Proposal (any action described in this clause (i) being referred to as a "Company Adverse Change Recommendation");

(ii) adopt, approve, recommend or declare advisable, or propose to approve, recommend or declare advisable, or allow the Company to execute or enter into any Contract with respect to any Acquisition Proposal, or requiring, or reasonably expected to cause, the Company to abandon, terminate, delay or fail to consummate, or that would otherwise materially impede, interfere with or be inconsistent with, the Transactions (other than an Acceptable Confidentiality Agreement).

Notwithstanding anything to the contrary in the Merger Agreement, at any time prior to the Offer Acceptance Time, the Company Board may make a Company Adverse Change Recommendation Change in response to a Superior Offer and/or terminate the Merger Agreement in order to enter into a definitive agreement providing for the consummation of a transaction (or series of related transactions) that the Company Board determines, in good faith, constitutes a Superior Offer (a "Specified Agreement") with respect to such Superior Offer. However, such action may only be taken if:

(i) the Company Board determines in good faith, after consultation with the Company's outside legal counsel and financial advisors, that such action is required by the fiduciary duties of the Company Board to the Company's stockholders under applicable legal requirements;

(ii) the Company will have given Parent prior written notice of its intention to consider making a Company Adverse Change Recommendation or terminating the Merger Agreement at least four business days prior to making any such Company Adverse Change Recommendation or termination (a "Determination Notice") (which notice will not constitute a Company Adverse Change Recommendation or termination) and, if desired by Parent, during such four business day period will have negotiated in good faith with respect to any revisions to the terms of the Merger Agreement or another proposal to the extent proposed by Parent so that such Acquisition Proposal would cease to constitute a Superior Offer;

(iii) (1) the Company will have provided to Parent information with respect to such Acquisition Proposal in accordance with the terms of the Merger Agreement, (2) the Company will have given Parent the four business day period after the Determination Notice to propose revisions to the terms of the Merger Agreement or make another proposal so that such Acquisition Proposal would cease to constitute a Superior Offer, and (3) after giving effect to any proposals made by Parent during such period, if any, after consultation with outside legal counsel and financial advisors, the Company Board will have determined, in good faith, that such Acquisition Proposal is a Superior Offer and that making the Company Adverse Change Recommendation or terminating the Merger Agreement is required by the fiduciary duties of the Company Board to the Company's stockholders under applicable legal requirements. Issuance of any "stop, look and listen" communication by or on behalf of the Company will not be considered a Company Adverse Change Recommendation and will not require the giving of a Determination Notice or compliance with the procedures set forth in the Merger Agreement.

These requirements above also apply to any material amendment to any Acquisition Proposal and require a new Determination Notice, except that the references above to four business days will be deemed to be two business days.

The issuance of any "stop, look and listen" communication by or on behalf of the Company pursuant to Rule 14d-9(f) will not be considered a Company Adverse Recommendation Change and will not require the Company to give a Determination Notice or comply with the foregoing provisions.

Other than in connection with an Acquisition Proposal, the Company Board may make a Company Adverse Change Recommendation in response to an Intervening Event if:

(i) the Company Board determines in good faith, after consultation with the Company's outside legal counsel and financial advisors, that such action is required by the fiduciary duties of the Company Board to the Company's stockholders under applicable legal requirements;

(ii) the Company will have given Parent a Determination Notice at least four business days prior to making any such Company Adverse Change Recommendation and, if desired by Parent, during such four business day period will have negotiated in good faith with respect to any revisions to the terms of the Merger Agreement or another proposal to the extent proposed by Parent so that a Company Adverse Change Recommendation would no longer be necessary; and

(iii) (1) the Company will have specified in reasonable detail the facts and circumstances that render a Company Adverse Change Recommendation necessary, (2) the Company will have given Parent the four business day period after the Determination Notice to propose revisions to the terms of the Merger Agreement or make another proposal so that a Company Adverse Change Recommendation would no longer be necessary, and (3) after giving effect to the proposals made by Parent during such period, if any, after consultation with outside legal counsel and financial advisors, the Company Board determined, in good faith, that making the Company Adverse Change Recommendation is required by the fiduciary duties of the Company Board to the Company's stockholders under applicable legal requirements.

"Intervening Event" means any material event, fact, development or occurrence that affects the business, assets or operations of the Company that is unknown to, and not reasonably foreseeable by, the Company Board

as of the date of the Merger Agreement, or if known to the Company Board as of the date of the Merger Agreement, the material consequences of which were not known to, and not reasonably foreseeable by, the Company Board as of the date of the Merger Agreement.

Termination

The Merger Agreement may be terminated prior to the Effective Time (or prior to such earlier time as set forth in this section) as follows:

(i) at any time prior to the Offer Acceptance Time, by mutual written consent of Parent and the Company;

(ii) At any time prior to the Offer Acceptance Time, by either Parent or the Company, if the Closing has not occurred on or prior to 11:59 p.m., Eastern Time, on May 17, 2022 (the "End Date"); provided, however, that (A) if on the End Date all of the Offer Conditions, other than the HSR Condition or the Governmental Impediment Condition (solely in respect of the HSR Act or the antitrust laws of any jurisdiction in which Parent or the Company has business operations) have not been satisfied or waived by Parent or Purchaser, to the extent waivable by Parent or Purchaser (other than conditions that by their nature are to be satisfied at the Offer Acceptance Time, each of which is then capable of being satisfied), then the End Date will automatically be extended by a period of four months; and (B) the right to terminate the Merger Agreement pursuant to this paragraph will not be available to any party whose material breach of the Merger Agreement has caused or resulted in the Offer not being consummated by such date (such termination, an "Outside Date Termination");

(iii) by either Parent or the Company if a Governmental Body of competent jurisdiction issued an order, decree or ruling, or has taken any other action, having the effect of permanently restraining, enjoining or otherwise prohibiting the acceptance for payment of Shares pursuant to the Offer or the Merger or making consummation of the Offer or the Merger illegal, which order, decree, ruling or other action is final and nonappealable;

(iv) by Parent at any time prior to the Offer Acceptance Time, if: (i) the Company Board fails to include the Company Board Recommendation in the Schedule 14D-9 when mailed, or effects a Company Adverse Change Recommendation, or (ii) in the case of a tender offer or exchange offer subject to Regulation 14D under the Exchange Act, other than the Offer, the Company Board fails to recommend, in a Solicitation/Recommendation Statement on Schedule 14D-9, rejection of such tender offer or exchange offer within ten business days of the commencement of such tender offer or exchange offer;

(v) by the Company, at any time prior to the Offer Acceptance Time, in order to accept a Superior Offer and substantially concurrently enter into a binding written definitive acquisition agreement providing for the consummation of a transaction which the Company Board determined, in good faith, constitutes a Superior Offer (a "Superior Offer Termination"); provided that no Acquired Corporation is in material breach of Section 5.3 of the Merger Agreement or in willful breach of Section 6.1(b)(i) of the Merger Agreement in relation to such Superior Offer;

(vi) by Parent at any time prior to the Offer Acceptance Time, if the Company breaches any representation or warranty contained in the Merger Agreement or fails to perform any covenant or obligation in the Merger Agreement, such that a condition to the Offer regarding the accuracy of the Company's representations and warranties or the Company's compliance with its covenants would not be satisfied and cannot be cured by the Company by the End Date, or if capable of being cured in such time period, has not been cured within thirty days of the date Parent gives the Company written notice of such breach or failure to perform; *provided, however*, that Parent will not have the right to terminate this Merger Agreement pursuant to this if either Parent or Purchaser is then in material breach of any representation, warranty, covenant or obligation hereunder;

(vii) by the Company at any time prior to the Offer Acceptance Time, if a breach of any representation or warranty contained in the Merger Agreement or failure to perform any covenant or obligation in the

Merger Agreement on the part of Parent or Purchaser will have occurred, in each case, if such breach or failure would reasonably be expected to prevent Parent or Purchaser from consummating the Transactions and such breach or failure cannot be cured by Parent or Purchaser, as applicable, by the End Date, or, if capable of being cured in such time period, has not been cured within thirty days of the date the Company gives Parent written notice of such breach or failure to perform. However, the Company will not have the right to terminate the Merger Agreement pursuant to this section if the Company is then in material breach of any representation, warranty, covenant or obligation hereunder

(viii) by the Company (i) if following the expiration of the Offer, Purchaser failed to accept for payment all Shares validly tendered (and not validly withdrawn) pursuant to the Offer in accordance with the Merger Agreement or (ii) if, following the Offer Acceptance Time, Purchaser fails to purchase all Shares validly tendered (and not validly withdrawn) pursuant to the Offer in accordance with the Merger Agreement.

(ix) by Parent at any time prior to the Offer Acceptance Time, if the Company knowingly and intentionally breaches any of its obligations pursuant to the non-solicitation provisions in any material respect.

Effect of Termination

If the Merger Agreement is terminated pursuant to its terms, the Merger Agreement will be of no further force or effect and there will be no liability on the part of Parent, Purchaser or the Company (or any of their respective former, current or future officers, directors, partners, stockholders, managers, members or affiliates) following any such termination, provided that (i) certain specified provisions of the Merger Agreement will survive, including those described in " —*Company Termination Fee*" below, (ii) the Confidentiality Agreement will survive the termination of the Merger Agreement and remain in full force and effect in accordance with its terms, (iii) the Collaboration and License Agreement, dated November 15, 2019, between Parent and the Company will survive the termination of the Merger Agreement and will remain in full force and effect in accordance with its terms and (iv) the termination of the Merger Agreement will not relieve any party from liability for fraud or willful breach of the covenants or obligations in the Merger Agreement prior to termination.

Company Termination Fee

The Company has agreed to pay (or cause to be paid to) Parent a termination fee of $100 million in cash (the "Termination Fee") if:

(i) the Merger Agreement is terminated by the Company pursuant to a Superior Offer Termination;

(ii) the Merger Agreement is terminated by Parent at any time prior to the Offer Acceptance Time, if: (i) the Company Board fail to include the Company Board Recommendation in the Schedule 14D-9 when mailed, or effect a Company Adverse Recommendation Change; or (ii) in the case of a tender offer or exchange offer subject to Regulation 14D under the Exchange Act, other than the Offer, the Company Board fail to recommend, in a Solicitation/Recommendation Statement on Schedule 14D-9, rejection of such tender offer or exchange offer within ten business days of the commencement of such tender offer or exchange offer; or

(iii) (x) the Merger Agreement is terminated by Parent or the Company pursuant to the Outside Date Termination, subject to specified exceptions or by Parent at any time prior to the Offer Acceptance Time, as a result of a willful breach of the Company's non-solicitation obligations under the Merger Agreement or by Parent as a result of willful and material breach of the representations and warranties and covenants and agreements set forth in the Merger Agreement; (y) any person publicly discloses a *bona fide* Acquisition Proposal after the date of the Merger Agreement and prior to such termination and such Acquisition Proposal has not been publicly withdrawn prior to such termination and (z) within twelve months of such termination the Company has entered into a definitive agreement with respect to

an Acquisition Proposal (which Acquisition Proposal is subsequently consummated, whether during or following such twelve-month period) or consummated an Acquisition Proposal; provided that for purposes of clause (z) the references to "20%" in the definition of "Acquisition Proposal" will be deemed to be references to "50%."

In the event of any termination described above, (i) payment from the Company to Parent of the Termination Fee will be the sole and exclusive remedy of Parent, Purchaser or any of their respective Affiliates against the Acquired Corporations and any of their respective former, current or future officers, directors, partners, stockholders, managers, members or affiliates (collectively, "Company Related Parties") and will constitute liquidated damages for any loss suffered as a result of the failure of the Offer or the Merger to be consummated or for a breach or failure to perform hereunder or otherwise, and (ii) upon payment of such amount(s), none of the Company Related Parties will have any further liability or obligation relating to or arising out of the Merger Agreement or the Transactions and none of Parent, Purchaser or any of their respective affiliates will be entitled to bring or maintain any claim, action or proceeding against any Company Related Party or any of its affiliates relating to or arising out of the Merger Agreement or the Transactions.

In the event the Company fails to timely pay any amount due pursuant to this section, and the Parent commences a legal proceeding which results in judgment against the Company, the Company will pay Parent its reasonable and documented costs and expenses (including reasonable and documented attorneys' fees) in connection with such suit, together with interest.

Specific Performance

The parties have agreed that irreparable damage would occur in the event that any of the provisions of the Merger Agreement were not performed in accordance with their specific terms or were otherwise breached. The parties further agreed that the parties will be entitled to an injunction or injunctions, specific performance or other equitable relief to prevent breaches of the Merger Agreement and to enforce specifically the terms and provisions of the Merger Agreement, without proof of damages or otherwise, in addition to any other remedy to which they are entitled under the Merger Agreement.

Expenses

Except as otherwise provided in the Merger Agreement, all fees and expenses incurred by the parties in connection with the Merger Agreement and the Transactions will be paid by the party incurring such expenses, whether or not the Offer and Merger are consummated.

Transfer Taxes

The Company will bear all transfer, documentary, sales, use, stamp, registration and other similar taxes and fees imposed with respect to the transfer of Shares pursuant to the Merger subject to certain exceptions. Specifically, none of Parent, Purchaser and the Surviving Corporation will be liable for transfer and other similar taxes under any circumstance if the payment of the Offer Price or the Merger Consideration is to be made to a person who is not the person in whose name the tendered Shares are registered on the Company's stock transfer books.

Offer Conditions

The Offer Conditions are described in Section 13—"Conditions to the Offer."

Confidentiality Agreements

Parent and the Company entered into a confidentiality agreement, dated October 27, 2021 (the "Confidentiality Agreement"). Under the terms of the Confidentiality Agreement, Parent and the Company

agreed that, subject to certain exceptions including the ability to make disclosures required by applicable law, any non-public information the Company may make available to Parent will not be disclosed or used for any purpose other than the evaluation, negotiation and completion of the possible negotiated transaction involving Parent and the Company. The Confidentiality Agreement includes a standstill provision for the benefit of the Company.

Previously, Parent and the Company entered into a Mutual Confidentiality Agreement, dated August 14, 2018 and amended on August 14, 2019, and a Confidential Disclosure Agreement, effective March 9, 2021, for purposes of exchanging confidential information for the evaluation of potential scientific or business relationships (collectively, the "Prior Confidentiality Agreements"). None of the Prior Confidentiality Agreements contains any standstill provision.

This summary of the Confidentiality Agreement and the Prior Confidentiality Agreements is only a summary and is qualified in its entirety by reference to the Confidentiality Agreement, which is filed as Exhibit (d)(2) of the Schedule TO and is incorporated herein by reference, and by reference to the Prior Confidentiality Agreements, which are filed as Exhibits (d)(5), (d)(6) and (d)(7) of the Schedule TO.

Collaboration Agreement

On November 15, 2019, the Company and Parent entered into a Collaboration and License Agreement (the "Collaboration Agreement"). Under the terms of the Collaboration Agreement, the Company and Parent seek to use GalXC to explore more than 30 gene targets associated with liver disease with the goal of delivering multiple clinical candidates for disorders including chronic liver disease, non-alcoholic steatohepatitis, type 2 diabetes, obesity, and rare diseases. The Company will conduct and fund discovery and preclinical development to clinical candidate selection for each liver cell target. Parent will be responsible for all further development and the commercialization of each candidate selected for development, with the Company manufacturing clinical candidates selected for Phase 1-related clinical development, subject to reimbursement for its manufacturing costs. In addition, the Company will assist Parent with the Investigational New Drug filing for the first development candidate. The Company also retains the ability to opt in to co-development of a total of two programs during clinical development in Phases 1-3, subject to limitations in the event of a change in control. If the Company exercises a co-development option, it also has an option to co-promote the product in the United States, subject to limitations in the event of a change in control of the Company. Additionally, the Company may lead the development and commercialization of two programs targeting orphan liver diseases, with Parent retaining the ability to opt in to both programs in Phases 1-3. The Company and Parent will share in profits and losses for the Company's orphan liver and Parent products should both parties elect to co-develop.

The Company is working exclusively with Parent during the research collaboration period on the discovery, research, development, and commercialization of hepatocyte targets subject to certain exclusions including those targets subject to the Company's existing partnerships, and Parent is, during a specified discovery period, working exclusively with the Company in any new research and development of compounds and products directed to collaboration targets using small interfering RNA conjugated to the sugar N-acetyl-D-galactosamine to reduce the expression of specific target genes in the liver. Under the Collaboration Agreement, the Company is providing Parent with exclusive and non-exclusive licenses and manufacturing support to enable Parent to commercialize products derived from or containing compounds developed pursuant to such agreement.

Under the terms of the Collaboration Agreement, Parent paid the Company an upfront payment of $175.0 million, which was subject to delivery of target information, in January 2020. The Company is also eligible to receive an additional $75.0 million ($25.0 million at the end of each of the first three years of the Collaboration Agreement), contingent upon the Company delivering GalXC molecules for a defined number of targets, and additional payments totaling up to approximately $357.5 million per target upon achievement of specified development, regulatory, and commercial milestones. In addition, Parent will pay the Company mid-single-digits to mid-teens royalties on product sales on a country-by-country and product-by-product basis

until the later of 10 years after the date of first commercial sale of each product in such country, expiration of specified patent rights in such country, or the expiration of specified regulatory exclusivity in such country for GalXC products, subject to royalty step-down provisions set forth in the agreement.

During the fourth quarter of 2020, Parent nominated its first candidate under the Collaboration Agreement. Pursuant to the agreement, upon achievement of proof of principle of the first nominated candidate, the Company earned a $2.5 million milestone, which the Company received in February 2021. Also during the fourth quarter of 2020, Parent confirmed that the Company met its annual obligation to deliver GalXC molecules for a defined number of targets for the first year of the Collaboration Agreement, entitling the Company to a $25.0 million payment, which the Company received in February 2021. This summary and description of the terms of the Collaboration Agreement is qualified in its entirety by reference to the full text of the Collaboration Agreement, a copy of which is filed as Exhibit (d)(3) of the Schedule TO and is incorporated herein by reference.

Share Issuance Agreement

In connection with the Collaboration Agreement, the Company and Parent entered into a share issuance agreement (the "Share Issuance Agreement") on November 15, 2019, pursuant to which the Company agreed to issue to Parent 2,279,982 shares of the Company's common stock, par value $0.0001 per share, at a purchase price of $21.93 per share, for an aggregate purchase price of approximately $50.0 million. Among other things, the Share Issuance Agreement grants Parent certain registration and participation rights with respect to the shares purchased by Parent pursuant to the Share Issuance Agreement. This summary and description of the terms of the Share Issuance Agreement is qualified in its entirety by reference to the full text of the Share Issuance Agreement, a copy of which is filed as Exhibit (d)(4) of the Schedule TO and is incorporated herein by reference.

12. Sourceand Amount of Funds.

The Offer is not conditioned upon Parent's or Purchaser's ability to finance the purchase of Shares pursuant to the Offer. Parent and Purchaser estimate that the total amount of funds required to consummate the Merger (including payments for Company Options, Company RSUs and other payments referred to in the Merger Agreement) pursuant to the Merger Agreement and to purchase all of the Shares pursuant to the Offer and the Merger Agreement will be approximately $3.2 billion. Parent will provide Purchaser with sufficient funds to purchase all Shares validly tendered (and not validly withdrawn) in the Offer, to provide funding for the Merger and to make payments for outstanding Company Options and any outstanding Company RSUs pursuant to the Merger Agreement. Parent has sufficient funds to satisfy all of Purchaser's payment obligations under the Merger Agreement and resulting from the transactions contemplated by the Merger Agreement. However, Parent may elect to finance a portion of these amounts.

13. Conditionsof the Offer.

The obligation of Purchaser to accept for payment and pay for Shares validly tendered (and not validly withdrawn) pursuant to the Offer is subject to the satisfaction of the conditions set forth in clauses (a) through (h) below. Accordingly, notwithstanding any other provision of the Offer or the Merger Agreement to the contrary, Purchaser shall not be required to accept for payment or (subject to any applicable rules and regulations of the SEC, including Rule 14e-1(c) under the Exchange Act) pay for, and may delay the acceptance for payment of, or (subject to any such rules and regulations) the payment for, any tendered Shares, and, to the extent permitted by the Merger Agreement, may terminate the Offer: (i) upon termination of the Merger Agreement; and (ii) at any scheduled Expiration Date (subject to any extensions of the Offer pursuant to Section 1.1(c) of the Merger Agreement), if: (A) the Minimum Condition, the Termination Condition, the HSR Condition and Governmental Impediment Condition shall not be satisfied by one minute after 11:59 p.m. Eastern Time on the Expiration Date; or (B) any of the additional conditions set forth below shall not be satisfied or waived in writing by Parent:

(a) there shall have been validly tendered (and not validly withdrawn) Shares that, considered together with all other Shares (if any) beneficially owned by Parent and its affiliates, represent one more Share than 50% of the sum of the total number of Shares outstanding at the time of the expiration of the Offer;

(b) (i) the representations and warranties of the Company set forth in Section 3.3(a) – (e) (Capitalization, Etc.) of the Merger Agreement shall be accurate except for any *de minimis* inaccuracies as of the date of the Merger Agreement and at and as of the Offer Acceptance Time as if made on and as of the Offer Acceptance Time (except to the extent any such representation or warranty expressly relates to an earlier date or period, in which case as of such date or period);

(ii) the representations and warranties of the Company set forth in Sections 3.1 (Due Organization; Subsidiaries, Etc.), 3.2 (Certificate of Incorporation and Bylaws), Section 3.3(f) (Capitalization, Etc.) 3.20 (Authority; Binding Nature of Agreement), 3.22 (Takeover Laws), 3.23 (Opinion of Financial Advisors) and 3.24 (Brokers and Other Advisors) of the Merger Agreement shall be accurate (disregarding for this purpose all "Material Adverse Effect" and "materiality" qualifications contained in such representations and warranties) in all material respects as of the date of the Merger Agreement and at and as of the Offer Acceptance Time as if made on and as of the Offer Acceptance Time (except to the extent any such representation or warranty expressly relates to an earlier date or period, in which case as of such date or period);

(iii) the representations and warranties of the Company set forth in Section 3.5(b) (No Material Adverse Effect) of the Merger Agreement shall be accurate in all respects as of the date of the Merger Agreement and at and as of the Offer Acceptance Time as if made on and as of the Offer Acceptance Time with respect to the earlier period set forth in Section 3.5(b);

(iv) the representations and warranties of the Company set forth in the Merger Agreement (other than those referred to in clauses (i), (ii) and (iii) above) shall be accurate (disregarding for this purpose all "Material Adverse Effect" and "materiality" qualifications contained in such representations and warranties) as of the date of the Merger Agreement and at and as of the Offer Acceptance Time as if made on and as of the Offer Acceptance Time (except to the extent any such representation or warranty expressly relates to an earlier date or period, in which case as of such date or period), except where the failure of such representations and warranties to be so true and correct has not had, and would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect;

(c) the Company shall have complied with or performed in all material respects the covenants and agreements it is required to comply with or perform at or prior to the Offer Acceptance Time;

(d) since the date of the Merger Agreement, there shall not have occurred any event, occurrence, circumstance, change or effect which has had, or would reasonably be expected to have, a Material Adverse Effect;

(e) the waiting period (or any extension thereof) applicable to the Offer under the HSR Act shall have expired or been terminated;

(f) Parent and Purchaser shall have received a certificate executed on behalf of the Company by an executive officer of the Company confirming that the conditions set forth in paragraphs (b), (c) and (d) have been satisfied;

(g) there shall not have been issued by any governmental body of competent jurisdiction in any jurisdiction in which Parent or the Company has business operations, and remain in effect any temporary restraining order, preliminary or permanent injunction preventing the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger, nor shall any legal requirement have been promulgated, enacted, issued or deemed applicable to the Offer or the Merger by any governmental body in any jurisdiction in which Parent or the Company has business operations which prohibits or makes illegal the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger; and

(h) the Merger Agreement shall not have been terminated in accordance with its terms.

The foregoing conditions are for the sole benefit of Parent and Purchaser and (except for the Minimum Condition and the Termination Condition) may be waived to the extent permitted by law by Parent and Purchaser, in whole or in part at any time and from time to time, in the sole discretion of Parent and Purchaser. The failure by Parent or Purchaser at any time to exercise any of the foregoing rights will not be deemed a waiver of any such right and each such right will be deemed an ongoing right which may be asserted at any time and from time to time prior to the expiration of the Offer (except for conditions relating to government regulatory approvals).

14. Dividends and Distributions.

The Merger Agreement provides that the Company will not, between the date of the Merger Agreement and the Effective Time, establish a record date for, declare, accrue, set aside, pay any dividend or make any other distribution in respect of any shares of its capital stock (including the Shares), repurchase, redeem or otherwise reacquire any of the Shares, or any rights, warrants or options to acquire any of the Shares (other than to (1) repurchase Shares outstanding as of the date of the Merger Agreement pursuant to the Company's right to purchase Shares held by a Company Associate (as defined in the Merger Agreement) only upon termination of such person's employment or engagement by the Company, (2) repurchase Company Options or Company RSUs or (3) satisfy the exercise price and/or tax obligations with respect to the Company Options upon exercise). See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements—Summary of the Merger Agreement—Conduct of Business Pending the Merger."

15. Certain Legal Matters; Regulatory Approvals.

General. Except as otherwise set forth in this Offer to Purchase, based on Parent's and Purchaser's review of publicly available filings by the Company with the SEC and other information regarding the Company, Parent and Purchaser are not aware of any licenses or other regulatory permits which appear to be material to the business of the Company and which might be adversely affected by the acquisition of Shares by Purchaser or Parent pursuant to the Offer or of any approval or other action by any governmental, administrative or regulatory agency or authority which would be required for the acquisition or ownership of Shares by Purchaser or Parent pursuant to the Offer. In addition, except as set forth below, Parent and Purchaser are not aware of any filings, approvals or other actions by or with any governmental body or administrative or regulatory agency that would be required for Parent's and Purchaser's acquisition or ownership of the Shares. Should any such approval or other action be required, Parent and Purchaser currently expect that such approval or action, except as described below under "State Takeover Laws," would be sought or taken. There can be no assurance that any such approval or action, if needed, would be obtained or, if obtained, that it will be obtained without substantial conditions, and there can be no assurance that, in the event that such approvals were not obtained or such other actions were not taken, adverse consequences might not result to the Company's or Parent's business or that certain parts of the Company's or Parent's business might not have to be disposed of or held separate. In such an event, we may not be required to purchase any Shares in the Offer. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements—Summary of the Merger Agreement—Filings, Consents and Approvals", Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements—Summary of the Merger Agreement—Reasonable Best Efforts" and Section 13—"Conditions of the Offer."

Antitrust. Under the HSR Act, and the rules and regulations promulgated thereunder by the FTC, certain transactions may not be consummated until certain information and documentary materials have been furnished for review to the FTC and the Antitrust Division of the DOJ (the "Antitrust Division") and certain waiting period requirements have been satisfied. These requirements apply to Parent by virtue of Purchaser's acquisition of the Shares in the Offer (and the Merger).

Under the HSR Act, the purchase of Shares in the Offer may not be completed until the expiration of a 15-calendar-day waiting period following the filing of certain required information and documentary material concerning the Offer (and the Merger) with the FTC and the Antitrust Division, unless the waiting period is

earlier terminated by the FTC and the Antitrust Division. The parties filed such Premerger Notification and Report Forms under the HSR Act with the FTC and the Antitrust Division in connection with the purchase of Shares in the Offer and the Merger on November 22, 2021. Under the HSR Act, the required waiting period will expire at 11:59 p.m., Eastern Time on the 15th calendar day after the filing by Parent, unless earlier terminated by the FTC and the Antitrust Division or Parent receives a request for additional information or documentary material ("Second Request") from either the FTC or the Antitrust Division prior to that time. If a Second Request issues, the waiting period with respect to the Offer would be extended for an additional period of ten calendar days following the date of Parent's substantial compliance with that request. The FTC or the Antitrust Division may terminate the additional ten-day waiting period before its expiration. If either the 15-day or ten-day waiting period expires on a Saturday, Sunday or federal holiday, then the period is extended until 11:59 p.m. of the next day that is not a Saturday, Sunday or federal holiday. Only one additional waiting period pursuant to a Second Request is authorized by the HSR Act rules. After that time, the timing of the purchase of Shares in the Offer could be delayed only by court order or with Parent's consent. It is also possible that Parent and the Company could enter into a timing agreement with the FTC or the Antitrust Division that could affect the timing of the purchase of Shares in the Offer. Complying with a Second Request can take a significant period of time. Although the Company is also required to file certain information and documentary material with the FTC and the Antitrust Division in connection with the Offer, the Company's failure to comply with its own Second Request in a timely manner would not change the waiting period with respect to the purchase of Shares in the Offer.

The FTC and the Antitrust Division frequently scrutinize the legality of transactions under the U.S. antitrust laws, such as Purchaser's acquisition of Shares in the Offer (and the Merger). At any time before or after Purchaser's purchase of Shares in the Offer (and the Merger), the FTC or the Antitrust Division could take any action under the antitrust laws that it either considers necessary or desirable in the public interest, including seeking to enjoin the purchase of Shares in the Offer (and the Merger), the divestiture of Shares purchased in the Offer and Merger or the divestiture of substantial assets of Parent, the Company or any of their respective subsidiaries or affiliates. At any time before or after the completion of the Offer and the Merger, and notwithstanding the termination or expiration of the waiting period under the HSR Act, any state may also bring legal action under federal and state antitrust laws and consumer protection laws as they deem necessary. Private parties also may bring legal actions under the antitrust laws under certain circumstances. See Section 13—"Conditions of the Offer."

Parent also conducts business outside of the United States. However, based on a review of the information currently available relating to the countries and businesses in which Parent and the Company are engaged, Parent and Purchaser believe that no mandatory antitrust premerger notification filing is required outside the United States, and approval of any non-U.S. antitrust authority is not a condition to the consummation of the Offer or the Merger.

Based upon an examination of publicly available and other information relating to the businesses in which the Company is engaged, Parent and Purchaser believe that the acquisition of Shares in the Offer (and the Merger) should not violate applicable antitrust laws. Nevertheless, Parent and Purchaser cannot be certain that a challenge to the Offer (and the Merger) on antitrust grounds will not be made, or, if such challenge is made, what the result will be. See Section 13—"Conditions of the Offer."

Stockholder Vote Not Required. the Company has represented in the Merger Agreement that it has the corporate power and authority to execute and deliver and to perform its obligations under the Merger Agreement and to consummate the Transactions and that the Merger Agreement has been duly executed and delivered by the Company. Section 251(h) of the DGCL provides that a stockholder vote is not required to authorize a merger if certain requirements are met, including that (i) the acquiring company consummates an offer for all of the outstanding stock of the company to be acquired that, absent Section 251(h) of the DGCL, would be entitled to vote on the merger, and (ii) following the consummation of such tender offer, the acquiring company owns at least such percentage of the stock of the company to be acquired that, absent Section 251(h) of the DGCL, would

be required to adopt the merger agreement. If the Minimum Condition is satisfied and we accept Shares for payment pursuant to the Offer, we will hold a sufficient number of Shares to ensure that the Company will not be required to submit the adoption of the Merger Agreement to a vote of its stockholders. Following the consummation of the Offer and subject to the satisfaction of the remaining conditions set forth in the Merger Agreement, Purchaser, Parent and the Company will take all necessary and appropriate action to effect the Merger as promptly as practicable without a vote of stockholders of the Company in accordance with Section 251(h) of the DGCL. See Section 11—"Purpose of the Offer and Plans for the Company; Summary of the Merger Agreement and Certain Other Agreements."

State Takeover Laws. A number of states (including Delaware, where the Company is incorporated) have adopted takeover laws and regulations which purport, to varying degrees, to be applicable to attempts to acquire securities of corporations which are incorporated in such states or which have substantial assets, stockholders, principal executive offices or principal places of business therein.

As a Delaware corporation, the Company has not opted out of Section 203 of the DGCL. In general, Section 203 of the DGCL would prevent an "interested stockholder" (generally defined in Section 203 of the DGCL as a person beneficially owning 15% or more of a corporation's voting stock) from engaging in a "business combination" (as defined in Section 203 of the DGCL) with a Delaware corporation for three years following the time such person became an interested stockholder unless: (i) before such person became an interested stockholder, the board of directors of the corporation approved the transaction in which the interested stockholder became an interested stockholder or approved the business combination; (ii) upon consummation of the transaction which resulted in the interested stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced (excluding for purposes of determining the number of shares of outstanding stock held by directors who are also officers and by employee stock plans that do not allow plan participants to determine confidentially whether to tender shares); or (iii) following the transaction in which such person became an interested stockholder, the business combination is (a) approved by the board of directors of the corporation and (b) authorized at a meeting of stockholders by the affirmative vote of the holders of at least $66^{2}/_{3}$% of the outstanding voting stock of the corporation not owned by the interested stockholder.

The Company has represented to us in the Merger Agreement that it has taken all actions necessary or appropriate to exempt the execution, delivery, and performance of the Merger Agreement and the Offer, the Merger, and the other transactions contemplated by the Merger Agreement from Section 203 of the DGCL and any other "moratorium," "control share acquisition," "fair price," "super majority," "affiliate transactions," or "business combination" or other similar state anti-takeover laws and regulations. Purchaser has not attempted to comply with any other state takeover statutes in connection with the Offer or the Merger. Purchaser reserves the right to challenge the validity or applicability of any state law allegedly applicable to the Offer, Merger, the Merger Agreement or the transactions contemplated thereby, and nothing in this Offer to Purchase or any action taken in connection herewith is intended as a waiver of that right. In the event that it is asserted that one or more takeover statutes apply to the Offer or the Merger, and it is not determined by an appropriate court that such statute or statutes do not apply or are invalid as applied to the Offer, Merger, or the Merger Agreement, as applicable, Purchaser may be required to file certain documents with, or receive approvals from, the relevant state authorities, and Purchaser might be unable to accept for payment or purchase Shares tendered pursuant to the Offer or be delayed in continuing or consummating the Offer. In such case, Purchaser may not be obligated to accept for purchase, or pay for, any Shares tendered. See Section 13—"Conditions of the Offer."

Appraisal Rights. No appraisal rights are available to the holders of Shares in connection with the Offer. However, if the Offer is successful and the Merger is consummated, stockholders of the Company who (i) did not tender their Shares in the Offer, (ii) otherwise comply with the applicable requirements and procedures of Section 262 of the DGCL and (iii) do not thereafter withdraw their demand for appraisal of such Shares or otherwise lose their appraisal rights, in each case in accordance with the DGCL, will be entitled to demand appraisal of their Shares and receive in lieu of the consideration payable in the Offer a cash payment equal to the

"fair value" of their Shares, as determined by the Delaware Court of Chancery, in accordance with Section 262 of the DGCL. If you choose to exercise your appraisal rights in connection with the Merger and you properly demand and perfect such rights in accordance with Section 262 of the DGCL, you may be entitled to payment for your Shares based on a judicial determination of the fair value of your Shares.

Any such judicial determination of the fair value of the Shares could be based upon considerations other than or in addition to the price paid in the Offer and the market value of the Shares. Stockholders should recognize that the value so determined could be higher or lower than the price per Share paid pursuant to the Offer or the per Share price to be paid in the Merger. Moreover, the Company may argue in an appraisal proceeding that, for purposes of such a proceeding, the fair value of the Shares is less than the price paid in the Offer and the Merger.

Under Section 262 of the DGCL, where a merger is approved under Section 251(h), either a constituent corporation before the effective date of the merger, or the surviving corporation within ten days thereafter, shall notify each of the holders of any class or series of stock of such constituent corporation who are entitled to appraisal rights of the approval of the merger or consolidation and that appraisal rights are available for any or all shares of such class or series of stock of such constituent corporation, and shall include in such notice a copy of Section 262 of the DGCL. **The Schedule 14D-9 constitutes the formal notice of appraisal rights under Section 262 of the DGCL.**

As described more fully in the Schedule 14D-9, if a stockholder elects to exercise appraisal rights under Section 262 of the DGCL, the stockholder must (i) prior to the later of the consummation of the Offer and 20 days after the mailing of the Schedule 14D-9, deliver to the Company a written demand for appraisal of his, her or its Shares, which demand must reasonably inform the Company of the identity of the stockholder and that the stockholder is demanding appraisal, (ii) not tender his, her or its Shares in the Offer, (iii) continuously hold of record the Shares from the date on which the written demand for appraisal is made through the Effective Time and (iv) comply with the procedures of Section 262 of the DGCL for perfecting appraisal rights thereafter.

The foregoing summary of the rights of dissenting stockholders under the DGCL does not purport to be a statement of the procedures to be followed by stockholders desiring to exercise any appraisal rights under Delaware law. The preservation and exercise of appraisal rights require strict and timely adherence to the applicable provisions of Delaware law which will be set forth in their entirety in the notice of merger. The foregoing discussion is not a complete statement of law pertaining to appraisal rights under Delaware law and is qualified in its entirety by reference to Delaware law, including without limitation, Section 262 of the DGCL, a copy of which is included as Annex III to the Schedule 14D-9.

The information provided above is for informational purposes only with respect to your alternatives if the Merger is consummated. Any stockholder who desires to exercise his, her or its appraisal rights should review carefully Section 262 of the DGCL and is urged to consult his, her or its legal advisor before electing or attempting to exercise such rights. The foregoing summary does not constitute any legal or other advice nor does it constitute a recommendation that the Company's stockholders exercise appraisal rights under Section 262 of the DGCL.

If you tender your Shares into the Offer, you will not be entitled to exercise appraisal rights with respect to your Shares but, instead, subject to the conditions to the Offer, you will receive the Offer Price for your Shares.

"Going Private" Transactions. Rule 13e-3 under the Exchange Act is applicable to certain "going private" transactions and may under certain circumstances be applicable to the Merger. However, Rule 13e-3 will be inapplicable if (i) the Shares are deregistered under the Exchange Act prior to the Merger or another business combination or (ii) the Merger or other business combination is consummated within one year after the purchase of the Shares pursuant to the Offer and the amount paid per Share in the Merger or other business combination is at least equal to the amount paid per Share in the Offer. Neither Parent nor Purchaser believes that Rule 13e-3 will be applicable to the Merger.

Legal Proceedings Relating to the Tender Offer. None.

16. Feesand Expenses.

Parent has retained the Depository and the Information Agent in connection with the Offer. The Depository and the Information Agent will receive customary compensation, reimbursement for reasonable out-of-pocket expenses and indemnification against certain liabilities in connection with the Offer, including certain liabilities under the federal securities laws.

As part of the services included in such retention, the Information Agent may contact holders of Shares by personal interview, mail, electronic mail, telephone, telex, telegraph and other methods of electronic communication and may request brokers, dealers, commercial banks, trust companies and other nominees to forward the Offer materials to beneficial holders of Shares.

Except as set forth above, neither Parent nor Purchaser will pay any fees or commissions to any broker or dealer or other person for soliciting tenders of Shares pursuant to the Offer. Brokers, dealers, commercial banks and trust companies will upon request be reimbursed by us for customary mailing and handling expenses incurred by them in forwarding the offering material to their customers.

17. Miscellaneous.

The Offer is being made to all holders of the Shares. We are not aware of any jurisdiction in which the making of the Offer or the acceptance thereof would be prohibited by securities, “blue sky” or other valid laws of such jurisdiction. If we become aware of any U.S. state in which the making of the Offer or the acceptance of Shares pursuant thereto would not be in compliance with an administrative or judicial action taken pursuant to a U.S. state statute, we will make a good faith effort to comply with any such law. If, after such good faith effort, we cannot comply with any such law, the Offer will not be made to the holders of Shares in such state. In any jurisdictions where applicable laws require the Offer to be made by a licensed broker or dealer, the Offer shall be deemed to be made on behalf of Purchaser by one or more registered brokers or dealers licensed under the laws of such jurisdiction to be designated by Purchaser.

Parent and Purchaser have filed with the SEC the Schedule TO (including exhibits) in accordance with the Exchange Act, furnishing certain additional information with respect to the Offer, and may file amendments thereto. The Schedule TO and any amendments thereto, including exhibits, may be examined and copies may be obtained from the SEC in the manner set forth in Section 8—“Certain Information Concerning the Company” under “Available Information.”

The Offer does not constitute a solicitation of proxies for any meeting of the Company’s stockholders. Any solicitation of proxies which Purchaser or any of its affiliates might seek would be made only pursuant to separate proxy materials complying with the requirements of Section 14(a) of the Exchange Act.

No person has been authorized to give any information or make any representation on behalf of Parent or Purchaser not contained in this Offer to Purchase or in the Letter of Transmittal and, if given or made, such information or representation must not be relied upon as having been authorized. No broker, dealer, bank, trust company, fiduciary or other person shall be deemed to be an agent of Purchaser, the Depository or the Information Agent for the purpose of the Offer. Neither delivery of this Offer to Purchase nor any purchase pursuant to the Offer will, under any circumstances, create any implication that there has been no change in the affairs of Parent, Purchaser, the Company or any of their respective subsidiaries since the date as of which information is furnished or the date of this Offer to Purchase.

Novo Nordisk A/S
NNUS New Research, Inc.
November 24, 2021

SCHEDULE A

INFORMATION CONCERNING MEMBERS OF THE BOARDS OF DIRECTORS AND THE EXECUTIVE OFFICERS OF PURCHASER AND PARENT.

1. Directors and Executive Officers of Purchaser.

The following table sets forth information about the directors and executive officers of Purchaser as of November 23, 2021.

Name, Country of Citizenship, Position	Present Principal Occupation or Employment; Material Positions Held During the Past Five Years; Certain Other Information
Jamie Haney United States of America Director	Ms. Haney joined Novo Nordisk in August 2020 as Corporate Vice President and General Counsel. Prior to joining Novo Nordisk, Ms. Haney was Managing Director at Eli Lilly Suisse. For three years, Jamie served as Assistant Corporate Secretary/Corporate Securities and Antitrust Counsel. She has also worked as an attorney at a leading international law firm focusing on complex commercial securities and antitrust cases
Ulrich Christian Otte Denmark Director and President	Mr. Otte has served as Senior Vice President of Finance and Operations at Novo Nordisk Inc. since September 2020. Prior to joining Novo Nordisk Inc., Mr. Otte was Corporate Vice President of Finance for Novo Nordisk China. Mr. Otte has been employed at Novo Nordisk since 2000.
Tomas Haagen Denmark Director	Mr. Haagen serves as Group General Counsel and Company Secretary of Novo Nordisk. He also serves as Chairman of the boards of Danske Bestyrelsesadvokater, Holm Kommunikation A/S and Grosserer Vilhelm Albertsens Fond. From 1998 to 2018, Mr. Haagen served as Partner and Managing Partner of Gorrissen Federspiel.

2. Directors and Executive Officers of Parent.

The following table sets forth information about the directors and executive officers of Parent as of November 23, 2021.

Name, Country of Citizenship, Position	Present Principal Occupation or Employment; Material Positions Held During the Past Five Years; Certain Other Information
Lars Fruergaard Jørgensen Denmark President and Chief Executive Officer	Mr. Jørgensen joined Novo Nordisk in 1991 as an economist in Health Care, Economy & Planning and has over the years completed overseas postings in the Netherlands, the U.S. and Japan. In 2004 he was appointed senior vice president for IT & Corporate Development. In January 2013 he was appointed executive vice president and chief information officer assuming responsibility for IT, Quality & Corporate Development. In November 2014 he took over the responsibilities for Corporate People & Organisation and Business Assurance and became chief of staff. Mr. Jørgensen was appointed president and chief executive officer in January 2017.
Monique Carter United Kingdom and Ireland Executive Vice President and Head of People & Organisation	Ms. Carter joined Novo Nordisk in November 2018 as SVP for Global People and Organization and was promoted to executive vice president in August 2019. Prior to joining Novo Nordisk Ms. Carter was Group HR Director and member of the Executive

Name, Country of Citizenship, Position	Present Principal Occupation or Employment; Material Positions Held During the Past Five Years; Certain Other Information
	committee at GKN plc, UK. Ms. Carter was at GKN plc from 2014 to 2018. Ms. Carter worked in the chemicals industry from 2005 to 2014 starting with ICI plc, UK (which later became part of Akzo Nobel, the Netherlands). Ms. Carter later moved to Singapore to head up the APAC Regional HR while in the Decorative paints division of ICI plc. In 2010 Ms. Carter became leader of HR for the specialty chemicals businesses of AkzoNobel in the Netherlands after the acquisition of ICI plc by Akzo Nobel. Prior to ICI plc, Ms. Carter held HR positions in a number of international companies.
Maziar Mike Doustdar Austria and Iran Executive Vice President and Head of International Operations	Mr. Doustdar joined Novo Nordisk in 1992 as an office clerk in Vienna, Austria. From 1993 through 2007 he took up various positions in finance, IT, logistics, operations and marketing, within various parts of Novo Nordisk's emerging markets, first in Vienna and subsequently in Athens and Zurich before he was appointed general manager of Novo Nordisk Near East, based in Turkey, in 2007. In 2010 Mr. Doustdar was promoted to vice president of Business Area Near East and in 2012 he re-located to Malaysia to head the Business Area Oceania South East Asia. In 2013 he was promoted to senior vice president of Novo Nordisk's International Operations, and in April 2015 Mr. Doustdar was promoted to executive vice president, continuing his responsibility for Novo Nordisk's International Operations. In September 2016 Mike Doustdar assumed additional geographical responsibility and was promoted to executive vice president for an expanded International Operations, leading all commercial units globally, except for the U.S. and Canada.
Ludovic Helfgott France Executive Vice President and Head of Biopharm	Mr. Helfgott joined Novo Nordisk in April 2019 as executive vice president and head of Biopharm. Mr. Helfgott joined Novo Nordisk from AstraZeneca, UK, where he was global vice president in charge of the company's Cardiovascular, Metabolism and Renal global franchise, supervising both assets in development and on the market. He joined AstraZeneca in 2005 in an international sales effectiveness role and has since held operational leadership roles with increasing responsibilities in Italy, Spain and at corporate headquarters. Prior to this, Mr. Helfgott was with McKinsey & Company in Paris, Moscow and Brussels from 1998 to 2005.
Karsten Munk Knudsen Denmark Executive Vice President and Chief Financial Officer (CFO)	Mr. Knudsen joined Novo Nordisk in 1999 as a business analyst in NNIT A/S, previously a subsidiary of Novo Nordisk, and has since held finance positions of growing size and complexity throughout the Novo Nordisk value chain. From 2010 to 2014 Mr. Knudsen was corporate vice president for Finance & IT at Novo Nordisk Inc. in the U.S. and in 2014 he was appointed senior vice president of Corporate Finance in Novo Nordisk. In February 2018 Mr. Knudsen was promoted to executive vice president and chief financial officer. In April 2019, Mr. Knudsen assumed further responsibilities as his function was expanded to cover Finance, Legal & Procurement.

Name, Country of Citizenship, Position	Present Principal Occupation or Employment; Material Positions Held During the Past Five Years; Certain Other Information
Doug Langa United States of America Executive Vice President and Head of North America Operations	Mr. Langa joined Novo Nordisk in 2011 as senior director of Managed Markets. In 2015 Mr. Langa was promoted to corporate vice president of Market Access in the U.S. and in 2016 he was appointed Senior Vice President of Market Access in the U.S. In this role he was responsible for securing formulary access with key payer customers for Novo Nordisk brands. In March 2017 Mr. Langa was appointed senior vice president, head of North America Operations and president of Novo Nordisk Inc., and in August 2017 Mr. Langa was promoted to executive vice president, continuing his responsibilities as head of North America Operations and president of Novo Nordisk Inc. Mr. Langa represents Novo Nordisk Inc. on the Board of Directors of the trade association PhRMA. Mr. Langa joined Novo Nordisk from GlaxoSmithKline, where he was the Senior Director of Payer Marketing. Prior to GlaxoSmithKline Mr. Langa spent the majority of his career at Johnson and Johnson, where he held various roles of increasing responsibility within Managed Markets, Sales Leadership and Marketing.
Martin Holst Lange Denmark Executive Vice President, Head of Development	Dr. Lange joined Novo Nordisk in 2002, working with growth hormone, GLP-2 and oral anti-diabetics as first operationally and subsequently medically responsible for several projects within Global Development. Dr. Lange worked two years in Novo Nordisk Inc., USA, from 2006-2008 in the Medical Department as Senior Medical Director. In 2008, Dr. Lange moved back to Denmark as Vice President, Medical & Science liraglutide during the submission and approval phase, transferring in 2010 upon US approval of Victoza® to insulin degludec in a similar position. From 2013 to 2017, he served as Corporate Project Vice President for Insulin & Diabetes Outcomes and subsequently Insulin & Devices, being responsible for the development and approval of the Novo Nordisk insulin portfolio. In January 2018, he was appointed Senior Vice President for Global Development, assuming the overall clinical development responsibilities of the Novo Nordisk pipeline. In March 2021, Dr. Lange was appointed Executive Vice President Development, Novo Nordisk A/S.
Marcus Schindler Germany Executive Vice President for Research & Early Development and Chief Scientific Officer	Dr. Schindler joined Novo Nordisk in January 2018 as Senior Vice President for External Innovation and Strategy. From March 2018 to 2021 he was Senior Vice President for Global Dr.ug Discovery and in March 2021 Dr. Schindler was appointed Executive Vice President Research & Early Development and Chief Scientific Officer. Prior to joining Novo Nordisk Dr. Schindler was Vice President, head of Cardiovascular and Metabolic Diseases innovative Medicines (CVMD iMed) at AstraZeneca, Sweden. From 2009-2012 he was head of Research at (OSI) Prosidion, Oxford, UK. From 2000-2008 he worked in various leadership roles at Boehringer Ingelheim, Germany after having started his career with Glaxo Wellcome/GSK, UK in 1997. Dr. Schindler holds a PhD from the University of Cambridge, UK. Dr. Schindler is an Adjunct

Name, Country of Citizenship, Position	Present Principal Occupation or Employment; Material Positions Held During the Past Five Years; Certain Other Information
	Professor of Pharmacology at the University of Gothenburg, Sweden.
Camilla Sylvest Denmark Executive Vice President and Head of Commercial Strategy & Corporate Affairs	Ms. Sylvest joined Novo Nordisk in 1996 as a trainee. From 1997 to 2008 Ms. Sylvest had roles in headquarters and regions within pricing, health economics, marketing and sales effectiveness. In 2003, she was appointed vice president of sales and marketing effectiveness in Region Europe. From 2008 to 2015 Ms. Sylvest headed up affiliates and business areas of growing size and complexity in Europe and Asia and in 2013 she was also appointed corporate vice president. In August 2015 Ms. Sylvest was appointed senior vice president and general manager of Novo Nordisk's Region China. In this role she was responsible for the company's activities in China, Taiwan and Hong Kong. In October 2017 Ms. Sylvest was promoted to executive vice president.
Henrik Wulff Denmark Executive Vice President and Head of Product Supply, Quality & IT	Mr. Wulff joined Novo Nordisk in 1998 in the logistic and planning function. From 2001 to 2008 he held different managerial roles within Novo Nordisk's manufacturing organization, Product Supply, before being appointed senior vice president of Diabetes API in Product Supply, Denmark. In 2012 Mr. Wulff was appointed senior vice president of the worldwide division Diabetes Finished Products. In 2013 he was promoted senior vice president of Product Supply globally. In April 2015 Mr. Wulff was promoted executive vice president and in 2019 his area of responsibility expanded to also cover Global IT and Global Quality.
Helge Lund Norway Director, Chair of the Board of Directors and Chair of the Nomination Committee	Mr. Lund is the Chair of the Board of Directors and the Chair of the Nomination Committee of Novo Nordisk. He also serves as Chair of the Board of BP p.l.c and Inkerman Holding AS, operating advisor to Clayton, Dublilier & Rice, and as a member of the boards of P/F Tjaldur and Belron SA. In addition, he is a member of the Board of Trustees of the International Crisis Group. From 2015 to 2016, Mr. Lund served as Chief Executive of BG Group plc. From 2004 to 2015, Mr. Lunch served as President and CEO of Equinor ASA. From 2002 to 2004, Mr. Lund was President and CEO of Aker Kvaerner ASA.
Jeppe Christiansen Denmark Director, Vice Chair of the Board of Directors and Chair of the Remuneration Committee	Mr. Christiansen is the Vice Chair of the Board of Directors and Chair of the Remuneration Committee of Parent. He is also CEO of Maj Invest Holding A/S and an Executive Director in two wholly owned subsidiaries of Maj Invest Holding A/S. He also serves as Chair of the board of Haldor Topsøe A/S, JEKC Holding ApS and Emlika Holding ApS, and two wholly owned subsidiaries of Emlika Holding ApS. Additionally, he is a Member of the Boards of Novo Holdings A/S, KIRKBI A/S, BellaBeat Inc., Pluto Naturfonden and Randers Regnskov, and a Member of the Board of Governers of Det Kgl. Vajsenhus. He is also an adjunct professor at Copenhagen Business School. From 2005 to 2009, Mr. Christiansen was CEO of LD Pensions. From 1999 to 2004, Mr. Christiansen served as Executive Director in Danske Bank A/S.

Name, Country of Citizenship, Position	Present Principal Occupation or Employment; Material Positions Held During the Past Five Years; Certain Other Information
Laurence Debroux France Director	Ms. Debroux is a Member of the Board of Directors, Chair of the Audit Committee, and a Member of Remuneration Committee of Novo Nordisk. Ms. Debroux is also a member of the boards of Exor N.V., Juventus Football Club S.p.A., and HEC Paris Business School. From 2015 to 2021, Ms. Debroux was the Group CFO and Executive Board Member of Heineken N.V. From 2010 to 2015, Ms. Debroux was CFO and Executive Board Member at JCDecaux SA. From 1996 to 2010, Ms. Debroux was the Chief Strategic Officer, CFO, and Deputy CFO at Sanofi Aventis SA.
Andreas Fibig Germany Director	Mr. Fibig is a Member of the Board of Directors and the Audit Committee of Novo Nordisk. Mr. Fibig is also Chair and CEO of International Flavors and Fragrances Inc. Mr. Fibig also serves as Chair of the German American Chamber of Commerce and as Executive Committee Member of the World Business Council for Sustainable Development. From 2008 to 2014, Mr. Fibig served as President and Chair of the board of management of Bayer HealthCare Pharmaceuticals. From 2006 to 2008, Mr. Fibig served as Senior Vice President of US Pharmaceutical Operations and president of Latin America, Africa and Middle East at Pfizer Inc.
Sylvie Grégoire Canada and United States of America Director	Ms. Grégoire Member of the Board of Directors, member of the Audit Committee, the Nomination Committee and the Research & Development Committee of Novo Nordisk. Ms. Grégoire also serves as Executive Chair of the board of EIP Pharma, Inc. and Member of the Board of Perkin Elmer Inc. From 2007 to 2013, Ms. Grégoire served as President of Human Genetic Therapies Shire PLC. From 2006 to 2007, Ms. Grégoire was Executive Chair of IDM Pharma Inc. From 2003 to 2004, Ms. Grégoire served as President and CEO of GlycoFi Inc.
Mette Bøjer Jensen Denmark Director	Ms. Jensen is a Member of the Board of Directors and a Member of the Nomination Committee of Novo Nordisk. Ms. Jensen is a Wash and Sterilisation Specialist in Product Supply at Novo Nordisk. Ms. Jensen has been employed at Novo Nordisk since 2001.
Kasim Kutay United Kingdom Director	Mr. Kutay is a Member of the Board of Directors and Member of the Nomination Committee and the Research & Development Committee of Novo Nordisk. Mr. Kutay serves as CEO of Novo Holdings A/S, and is a Member of the Boards of Novozymes A/S and Evotec SE. Mr. Kutay is also a Member of the Life Sciences Advisory Board of Gimv NV. From 2009 to 2016, Mr. Kutay served as Managing director and Co-head of Europe and Member of the Global Management Committee of Moelis & Co. From 2007 to 2009, Mr. Kutay was Managing director and head of Financial Solutions Group of SUN Group. Mr. Kutay was a Member of the Board of Governers (2006 to 2011) and a Member of the Investment Committee (2011 to 2016) of the School of Oriental and African Studies. From 2005 to 2016, Mr. Kutay also served as Member of the Board of Trustees of Northwick Park Institute for Medical Research. From 1989 to 2007, Mr. Kutay also held various

Name, Country of Citizenship, Position	Present Principal Occupation or Employment; Material Positions Held During the Past Five Years; Certain Other Information
	positions at Morgan Stanley, including Chair of the European Healthcare Group.
Anne Marie Kverneland Denmark Director	Ms. Kverneland is an employee-elected Member of the Board of Directors and member of the Remuneration Committee. Ms. Kverneland is a full-time union representative at Novo Nordisk.
Martin Mackay United States of America Director	Mr. Mackay is a Member of the Board of Directors, Chair of the Research & Development Committee and member of the Remuneration Committee of Novo Nordisk. Mr. Mackay is also co-founder, chair of the Board, CEO and holder of an executive leadership role overseeing all research and non-research functions at Rallybio LLC. Mr. Mackay is also a senior advisor to New Leaf Venture Partners, LLC. Mr. Mackay is a member of the boards of 5:01 Acquisition Corporation, and a member of the board and chair of the Science and Technology Committee of Charles River Laboratories International, Inc. From 2010 to 2013, Mr. Mackay was President of Global Research and Development at AstraZeneca plc. From 1995 to 2010, Mr. Mackay was President and senior vice president within Research and Development, and held other roles at Pfizer, Inc. Mr. Mackay was also a visiting professor at the Department of Pharmacy at King's College, London from 1998 to 2006, and at the Department of Biomedical Sciences at the University of Lincoln from 1998 to 2014.
Henrik Poulsen Denmark Director	Mr. Poulsen is a Member of the Board of Directors and member of the Audit Committee of Novo Nordisk. Mr. Poulsen serves as senior advisor to A.P. Møller Holding A/S and chair of Færch A/S. Mr. Poulsen is also deputy chair of the boards of ISS A/S and Carlsberg A/S. Additionally, Mr. Poulsen is a member of the supervisory board of Bertelsmann SE & Co. KGaA, and a board member of Novo Holdings A/S and Ørsted A/S. From 2012 to 2020, Mr. Poulsen was CEO and President of Ørsted A/S and CEO and President of TDC A/S from 2008 to 2012. From 2007 to 2008, Mr. Poulsen was also an operating executive of Kohlberg Kravis Roberts & Co. From 1999 to 2006, Mr. Poulsen held executive roles with the Lego Group.
Thomas Rantzau Denmark Director	Mr. Rantzau is an employee-elected Member of the Board of Directors (employee representative) and member of the Research & Development Committee of Novo Nordisk. He is employed as an Area Specialist in the Product Supply department of Novo Nordisk and has been employed at Novo Nordisk since 2004.
Stig Strøbæk Denmark Director	Mr. Strøbæk is an employee-elected Member of the Board of Directors (employee representative) and member of the Audit Committee. Mr. Strøbæk has been employed as an electrician and a full-time union representative at Novo Nordisk since 1992.

The common business address and telephone number for all the directors and executive officers is as follows:

c/o Novo Nordisk A/S, Novo Allé, DK-2880, Bagsvaerd, Denmark, telephone number: +45 4444-8888

The Letter of Transmittal, certificates for Shares and any other required documents should be sent by each stockholder of the Company or such stockholder's broker, dealer, commercial bank, trust company or other nominee to the Depository as follows:

The Depository for the Offer is:

American Stock Transfer & Trust Company, LLC

By Mail:
American Stock Transfer & Trust Co., LLC
Operations Center
Attn: Reorganization Department
6201 15th Avenue
Brooklyn, New York 11219

By Overnight Courier:
American Stock Transfer & Trust Co., LLC
Operations Center
Attn: Reorganization Department
6201 15th Avenue
Brooklyn, New York 11219

Any questions or requests for assistance may be directed to the Information Agent at its telephone number and location listed below. Requests for additional copies of this Offer to Purchase and the Letter of Transmittal may be directed to the Information Agent at its telephone number and location listed below. You may also contact your broker, dealer, commercial bank or trust company or other nominee for assistance concerning the Offer.

The Information Agent for the Offer is:

D.F. KING
An AST Company

D.F. King & Co., Inc.

48 Wall Street, 22nd Floor
New York, New York 10005
Email: drna@dfking.com

Shareholders may call toll free: (888) 542-7446
Banks and Brokers may call collect: (212) 269-5550

LETTER OF TRANSMITTAL

To accompany certificates of common stock, $0.0001 par value per share, of Dicerna Pharmaceuticals, Inc.

The undersigned represents that I (we) have full authority to surrender without restriction the certificate(s) listed below. You are hereby authorized and instructed to deliver to the address indicated below (unless otherwise instructed in the boxes in the following page) a check representing a cash payment for shares of common stock, par value $0.0001 per share, of Dicerna Pharmaceuticals, Inc. (the "Company") (collectively, the "Shares") tendered pursuant to this Letter of Transmittal, at a price of $38.25 per Share, net to the seller in cash, without interest and less any applicable withholding taxes, upon the terms and subject to the conditions set forth in the Offer to Purchase, dated November 24, 2021 (as it may be amended or supplemented from time to time, the "Offer to Purchase" and, together with this Letter of Transmittal, as it may be amended or supplemented from time to time, the "Offer").

THE OFFER AND WITHDRAWAL RIGHTS WILL EXPIRE AT ONE MINUTE AFTER 11:59 P.M., EASTERN TIME, ON DECEMBER 22, 2021, UNLESS THE OFFER IS EXTENDED OR EARLIER TERMINATED.

Method of delivery of the certificate(s) is at the option and risk of the owner thereof. *See Instruction 2.*

Mail or deliver this Letter of Transmittal, together with the certificate(s) representing your shares, to:

AST

If delivering by hand, express mail, courier, or other expedited service:

American Stock Transfer & Trust Co., LLC
Operations Center
Attn: Reorganization Department
6201 15th Avenue
Brooklyn, New York 11219

By mail:

American Stock Transfer & Trust Co., LLC
Operations Center
Attn: Reorganization Department
6201 15th Avenue
Brooklyn, New York 11219

Pursuant to the offer of NNUS New Research, Inc. ("Purchaser") to purchase all outstanding Shares of the Company, the undersigned encloses herewith and surrenders the following certificate(s) representing Shares of the Company:

DESCRIPTION OF SHARES SURRENDERED

Name(s) and Address(es) of Registered Owner(s) (If blank, please fill in exactly as name(s) appear(s) on share certificate(s))	Shares Surrendered (attached additional list if necessary)			
	Certificated Shares**			
	Certificate Number(s)*	Total Number of Shares Represented by Certificate(s)*	Number of Shares Surrendered**	Book Entry Shares Surrendered
	Total Shares			

* Need not be completed by book-entry stockholders.

** Unless otherwise indicated, it will be assumed that all shares of common stock represented by certificates described above are being surrendered hereby.

PLEASE READ THE INSTRUCTIONS ACCOMPANYING THIS LETTER OF TRANSMITTAL CAREFULLY BEFORE COMPLETING THIS LETTER OF TRANSMITTAL.

IF YOU WOULD LIKE ADDITIONAL COPIES OF THIS LETTER OF TRANSMITTAL OR ANY OF THE OTHER OFFERING DOCUMENTS, YOU SHOULD CONTACT THE INFORMATION AGENT, D.F. KING AT (888) 542-5550. YOU MAY ALSO CONTACT YOUR BROKER, DEALER, COMMERCIAL BANK, TRUST COMPANY OR OTHER NOMINEE FOR ASSISTANCE.

You have received this Letter of Transmittal in connection with the offer of NNUS New Research, Inc., a Delaware corporation ("Purchaser") and an indirect wholly-owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab* ("Parent"), to purchase all outstanding shares of common stock, par value $0.0001 per share, of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the "Company"), of the Company (collectively, the "Shares"), at a price of $38.25 per Share, net to the seller in cash, without interest and less any applicable withholding taxes, as described in the Offer to Purchase, dated November 24, 2021 (as it may be amended or supplemented from time to time, the "Offer to Purchase" and, together with this Letter of Transmittal, as it may be amended or supplemented from time to time, the "Offer").

You should use this Letter of Transmittal to deliver to American Stock Transfer & Trust Company LLC (the "Depository") Shares represented by stock certificates, or held in book-entry form on the books of the Company, for tender. If you are delivering your Shares by book-entry transfer to an account maintained by the Depository at The Depository Trust Company ("DTC"), you must use an Agent's Message (as defined in Instruction 2 below). In this Letter of Transmittal, stockholders who deliver certificates representing their Shares are referred to as "Certificate Stockholders," and stockholders who deliver their Shares through book-entry transfer are referred to as "Book-Entry Stockholders."

Purchaser is not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository. **Delivery of documents to DTC will not constitute delivery to the Depository.**

☐ **CHECK HERE IF TENDERED SHARES ARE BEING DELIVERED BY BOOK-ENTRY TRANSFER TO THE ACCOUNT MAINTAINED BY THE DEPOSITORY WITH DTC AND COMPLETE THE FOLLOWING (ONLY FINANCIAL INSTITUTIONS THAT ARE PARTICIPANTS IN DTC MAY DELIVER SHARES BY BOOK-ENTRY TRANSFER):**

Name of Tendering Institution: _____

DTC Participant Number: _____

Transaction Code Number: _____

NOTE: SIGNATURES MUST BE PROVIDED BELOW.
PLEASE READ THE ACCOMPANYING INSTRUCTIONS CAREFULLY.

Ladies and Gentlemen:

The undersigned hereby tenders to NNUS New Research, Inc., a Delaware corporation ("Purchaser") and an indirect wholly-owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab* ("Parent"), the above-described shares of common stock, par value $0.0001 per share, of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the "Company"), at a price of $38.25 per Share, net to the seller in cash, without interest and less any applicable withholding taxes, on the terms and subject to the conditions set forth in the Offer to Purchase, receipt of which is hereby acknowledged, and this Letter of Transmittal (as it may be amended or supplemented from time to time, this "Letter of Transmittal" and, together with the Offer to Purchase, as it may be amended or supplemented from time to time, the "Offer"). The undersigned understands that Purchaser reserves the right to transfer or assign, from time to time, in whole or in part, to one or more of its affiliates, the right to purchase the Shares tendered herewith.

On the terms and subject to the conditions of the Offer (including, if the Offer is extended or amended, the terms and conditions of such extension or amendment), subject to, and effective upon, acceptance for payment and payment for the Shares validly tendered herewith, and not validly withdrawn, prior to the Expiration Date (as defined in the Offer to Purchase) in accordance with the terms of the Offer, the undersigned hereby sells, assigns and transfers to, or upon the order of, Purchaser, all right, title and interest in and to all of the Shares being tendered hereby and any and all cash dividends, distributions, rights, other Shares or other securities issued or issuable in respect of such Shares on or after the date hereof (collectively, "Distributions"). By tendering shares in accordance with the procedures set forth herein, the undersigned also tenders the preferred stock purchase rights associated with the Shares. In addition, the undersigned hereby irrevocably appoints American Stock Transfer & Trust Company, LLC (the "Depository") the true and lawful agent and attorney-in-fact and proxy of the undersigned with respect to such Shares and any Distributions with full power of substitution (such proxies and power of attorney being deemed to be an irrevocable power coupled with an interest in the tendered shares) to the full extent of such stockholder's rights with respect to such Shares and any Distributions (a) to deliver certificates representing Shares (the "Share Certificates") and any Distributions, or transfer of ownership of such Shares and any Distributions on the account books maintained by DTC, together, in either such case, with all accompanying evidence of transfer and authenticity, to or upon the order of Purchaser, (b) to present such Shares and any Distributions for transfer on the books of the Company, and (c) to receive all benefits and otherwise exercise all rights of beneficial ownership of such Shares and any Distributions, all in accordance with the terms and subject to the conditions of the Offer.

The undersigned hereby irrevocably appoints each of the designees of Purchaser the attorneys-in-fact and proxies of the undersigned, each with full power of substitution, to the full extent of such stockholder's rights with respect to the Shares tendered hereby which have been accepted for payment and with respect to any Distributions. The designees of Purchaser will, with respect to the Shares and any associated Distributions for which the appointment is effective, be empowered to exercise all voting and any other rights of such stockholder, as they, in their sole discretion, may deem proper at any annual, special, adjourned or postponed meeting of the Company's stockholders, by written consent in lieu of any such meeting or otherwise. This proxy and power of attorney shall be irrevocable and coupled with an interest in the tendered Shares. Such appointment is effective when, and only to the extent that, Purchaser accepts the Shares tendered with this Letter of Transmittal for payment pursuant to the Offer. Upon the effectiveness of such appointment, without further action, all prior powers of attorney, proxies and consents given by the undersigned with respect to such Shares and any associated Distributions will be revoked and no subsequent powers of attorney, proxies, consents or revocations may be given (and, if given, will not be deemed effective). Purchaser reserves the right to require that, in order for Shares to be deemed validly tendered, immediately upon Purchaser's acceptance for payment of such Shares, Purchaser must be able to exercise full voting, consent and other rights, to the extent permitted under applicable law, with respect to such Shares and any associated Distributions, including voting at any meeting of stockholders or executing a written consent concerning any matter.

The undersigned hereby represents and warrants that the undersigned has full power and authority to tender, sell, assign and transfer the Shares and any Distributions tendered hereby and, when the same are accepted for payment by Purchaser, Purchaser will acquire good, marketable and unencumbered title thereto, free and clear of all liens, restrictions, charges and encumbrances and the same will not be subject to any adverse claim. The undersigned hereby represents and warrants that the undersigned is the registered owner of the Shares, or the Share Certificate(s) have been endorsed to the undersigned in blank, or the undersigned is a participant in DTC whose name appears on a security position listing as the owner of the

Shares. The undersigned will, upon request, execute and deliver any additional documents deemed by the Depository or Purchaser to be necessary or desirable to complete the sale, assignment and transfer of the Shares and any Distributions tendered hereby. In addition, the undersigned shall promptly remit and transfer to the Depository for the account of Purchaser any and all Distributions in respect of the Shares tendered hereby, accompanied by appropriate documentation of transfer and, pending such remittance or appropriate assurance thereof, Purchaser shall be entitled to all rights and privileges as owner of any such Distributions and may withhold the entire purchase price or deduct from the purchase price the amount or value thereof, as determined by Purchaser in its sole discretion.

It is understood that the undersigned will not receive payment for the Shares unless and until the Shares are accepted for payment and until the Share Certificate(s) owned by the undersigned are received by the Depository at the address set forth above, together with such additional documents as the Depository may require, or, in the case of Shares held in book-entry form, ownership of Shares is validly transferred on the account books maintained by DTC, and until the same are processed for payment by the Depository.

IT IS UNDERSTOOD THAT THE METHOD OF DELIVERY OF THE SHARES, THE SHARE CERTIFICATE(S) AND ALL OTHER REQUIRED DOCUMENTS (INCLUDING DELIVERY THROUGH DTC) IS AT THE OPTION AND RISK OF THE UNDERSIGNED AND THAT THE RISK OF LOSS OF SUCH SHARES, SHARE CERTIFICATE(S) AND OTHER DOCUMENTS SHALL PASS ONLY AFTER THE DEPOSITORY HAS ACTUALLY RECEIVED THE SHARES OR SHARE CERTIFICATE(S) (INCLUDING, IN THE CASE OF A BOOK-ENTRY TRANSFER, BY BOOK-ENTRY CONFIRMATION (AS DEFINED BELOW)). IF DELIVERY IS BY MAIL, IT IS RECOMMENDED THAT ALL SUCH DOCUMENTS BE SENT BY PROPERLY INSURED REGISTERED MAIL WITH RETURN RECEIPT REQUESTED. IN ALL CASES, SUFFICIENT TIME SHOULD BE ALLOWED TO ENSURE TIMELY DELIVERY.

All authority conferred or agreed to be conferred pursuant to this Letter of Transmittal shall not be affected by, and shall survive, the death or incapacity of the undersigned and any obligation of the undersigned hereunder shall be binding upon the heirs, executors, administrators, trustees in bankruptcy, personal representatives, successors and assigns of the undersigned. Except as stated in the Offer to Purchase, this tender is irrevocable.

The undersigned understands that the acceptance for payment by Purchaser of Shares tendered pursuant to one of the procedures described in Section 3 of the Offer to Purchase and in the instructions hereto will constitute a binding agreement between the undersigned and Purchaser upon the terms and subject to the conditions of the Offer.

Unless otherwise indicated herein under “Special Payment Instructions,” please issue the check for the purchase price in the name(s) of, and/or return any Share Certificates representing Shares not tendered or accepted for payment to, the registered owner(s) appearing under “Description of Shares Tendered.” Similarly, unless otherwise indicated under “Special Delivery Instructions,” please mail the check for the purchase price and/or return any Share Certificates representing Shares not tendered or accepted for payment (and accompanying documents, as appropriate) to the address(es) of the registered owner(s) appearing under “Description of Shares Tendered.” In the event that both the Special Delivery Instructions and the Special Payment Instructions are completed, please issue the check for the purchase price and/or issue any Share Certificates representing Shares not tendered or accepted for payment (and any accompanying documents, as appropriate) in the name of, and deliver such check and/or return such Share Certificates (and any accompanying documents, as appropriate) to, the person or persons so indicated. Unless otherwise indicated herein in the box titled “Special Payment Instructions,” please credit any Shares tendered hereby or by an Agent’s Message and delivered by book-entry transfer, but which are not purchased, by crediting the account at DTC designated above. The undersigned recognizes that Purchaser has no obligation pursuant to the Special Payment Instructions to transfer any Shares from the name of the registered owner thereof if Purchaser does not accept for payment any of the Shares so tendered.

SPECIAL PAYMENT INSTRUCTIONS
(See Instructions 1, 4, 5 and 7)

To be completed ONLY if Share Certificate(s) not tendered or not accepted for payment and/or the check for the purchase price in consideration of Shares accepted for payment are to be issued in the name of someone other than the undersigned or if Shares tendered by book-entry transfer which are not accepted for payment are to be returned by credit to an account maintained at DTC other than that designated above.

Issue: ☐ Check and/or ☐ Share Certificates to:

Name: _____
(Please Print)

Address: _____

_____

_____

(Include Zip Code)

_____
(Tax Identification or Social Security Number)

☐ **Credit Shares tendered by book-entry transfer that are not accepted for payment to the DTC account set forth below.**

_____
(DTC Account Number)

SPECIAL DELIVERY INSTRUCTIONS
(See Instructions 1, 4, 5 and 7)

To be completed ONLY if Share Certificate(s) not tendered or not accepted for payment and/or the check for the purchase price of Shares accepted for payment are to be sent to someone other than the undersigned or to the undersigned at an address other than that shown in the box titled “Description of Shares Tendered” above.

Deliver: ☐ Check(s) and/or ☐ Share Certificates to:

Name: _____
(Please Print)

Address: _____

_____

_____

(Include Zip Code)

IMPORTANT—SIGN HERE
(U.S. Holders Please Also Complete the Enclosed IRS Form W-9)
(Non-U.S. Holders Please Obtain and Complete IRS Form W-8BEN or Other Applicable IRS Form W-8)

_____

_____

(Signature(s) of Stockholder(s))

Dated: _____, 2021

(Must be signed by registered owner(s) exactly as name(s) appear(s) on Share Certificate(s) or on a security position listing or by person(s) authorized to become registered owner(s) by certificates and documents transmitted herewith. If signature is by trustees, executors, administrators, guardians, attorneys-in-fact, officers of corporations or others acting in a fiduciary or representative capacity, please set forth full title and see Instruction 5. For information concerning signature guarantees, see Instruction 1).

Name(s): _____

(Please Print)

Capacity (full title): _____

Address: _____

_____

(Include Zip Code)

Area Code and Telephone Number: _____

Tax Identification or
Social Security No.: _____

GUARANTEE OF SIGNATURE(S)
(For use by Eligible Institutions only;
see Instructions 1 and 5)

Name of Firm: _____

_____

(Include Zip Code)

Authorized Signature: _____

Name: _____

_____

(Please Type or Print)

Area Code and Telephone Number: _____

Dated: _____, 2021

_____

_____

Place medallion guarantee in space below:

INSTRUCTIONS

Forming Part of the Terms and Conditions of the Offer

1. **Guarantee of Signatures.** Except as otherwise provided below, all signatures on this Letter of Transmittal must be guaranteed by a financial institution (including most commercial banks, savings and loan associations and brokerage houses) that is a member in good standing of a recognized Medallion Program approved by the Securities Transfer Association, Inc., including the Security Transfer Agents Medallion Program, the New York Stock Exchange Medallion Signature Program and the Stock Exchanges Medallion Program (each, an "Eligible Institution"). Signatures on this Letter of Transmittal need not be guaranteed (a) if this Letter of Transmittal is signed by the registered owner(s) (which term, for purposes of this document, includes any participant in any of DTC's systems whose name appears on a security position listing as the owner of the Shares) of Shares tendered herewith and such registered owner has not completed the box titled "Special Payment Instructions" or the box titled "Special Delivery Instructions" on this Letter of Transmittal or (b) if such Shares are tendered for the account of an Eligible Institution. See Instruction 5.

2. **Delivery of Letter of Transmittal and Certificates or Book-Entry Confirmations.** This Letter of Transmittal is to be completed by stockholders if Share Certificates are to be forwarded herewith. If tenders are to be made pursuant to the procedures for tender by book-entry transfer set forth in Section 3 of the Offer to Purchase, an Agent's Message must be utilized. A manually executed facsimile of this document may be used in lieu of the original. Share Certificates representing all physically tendered Shares, or confirmation of any book-entry transfer into the Depository's account at DTC of Shares tendered by book-entry transfer ("Book Entry Confirmation"), as well as this Letter of Transmittal properly completed and duly executed with any required signature guarantees, or an Agent's Message in the case of a book-entry transfer, and any other documents required by this Letter of Transmittal, must be received by the Depository at its address set forth herein prior to the Expiration Date (as defined in the Offer to Purchase). Please do not send your Share Certificates directly to Purchaser, Parent, or the Company.

Purchaser is not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository.

A properly completed and duly executed Letter of Transmittal (or facsimile thereof) must accompany each such delivery of Share Certificates to the Depository.

The term "Agent's Message" means a message, transmitted through electronic means by DTC to, and received by, the Depository and forming part of a Book-Entry Confirmation, which states that DTC has received an express acknowledgment from the participant in DTC tendering the Shares which are the subject of such Book-Entry Confirmation that such participant has received and agrees to be bound by the terms of this Letter of Transmittal and that Purchaser may enforce such agreement against the participant. The term "Agent's Message" also includes any hard copy printout evidencing such message generated by a computer terminal maintained at the Depository's office.

THE METHOD OF DELIVERY OF THE SHARES, THIS LETTER OF TRANSMITTAL AND ALL OTHER REQUIRED DOCUMENTS, INCLUDING DELIVERY THROUGH DTC, IS AT THE ELECTION AND RISK OF THE TENDERING STOCKHOLDER. DELIVERY OF ALL SUCH DOCUMENTS WILL BE DEEMED MADE AND RISK OF LOSS OF THE SHARE CERTIFICATES SHALL PASS ONLY WHEN ACTUALLY RECEIVED BY THE DEPOSITORY (INCLUDING, IN THE CASE OF A BOOK-ENTRY TRANSFER, BY BOOK-ENTRY CONFIRMATION). IF SUCH DELIVERY IS BY MAIL, IT IS RECOMMENDED THAT ALL SUCH DOCUMENTS BE SENT BY PROPERLY INSURED REGISTERED MAIL WITH RETURN RECEIPT REQUESTED. IN ALL CASES, SUFFICIENT TIME SHOULD BE ALLOWED TO ENSURE TIMELY DELIVERY.

No alternative, conditional or contingent tenders will be accepted and no fractional Shares will be purchased. All tendering stockholders, by execution of this Letter of Transmittal (or facsimile thereof), waive any right to receive any notice of the acceptance of their Shares for payment.

All questions as to validity, form and eligibility (including time of receipt) of the surrender of any Share Certificate hereunder, including questions as to the proper completion or execution of any Letter of Transmittal, or other required documents and as to the proper form for transfer of any certificate of Shares, will be determined by Purchaser in its sole and absolute discretion (which may delegate power in whole or in part to the Depository) which determination will be final and binding. Purchaser reserves the absolute right to reject any and all tenders determined by it not to be in proper form or the acceptance for payment of or payment for which may be unlawful. Purchaser also reserves the absolute right to waive any defect or irregularity in the surrender of any Shares or Share Certificate(s) whether or not similar defects or irregularities are waived in the case of any other stockholder. A surrender will not be deemed to have been validly made until all defects and irregularities have been cured or waived. Purchaser and the Depository shall make reasonable efforts to notify any person of any defect in any Letter of Transmittal submitted to the Depository.

3. **Inadequate Space.** If the space provided herein is inadequate, the certificate numbers and/or the number of Shares should be listed on a separate schedule attached hereto and separately signed on each page thereof in the same manner as this Letter of Transmittal is signed.

4. **Partial Tenders** (**Applicable to Certificate Stockholders Only**)**.** If fewer than all the Shares evidenced by any Share Certificate delivered to the Depository are to be tendered, fill in the number of Shares which are to be tendered in the column titled "Number of Shares Tendered" in the box titled "Description of Shares Tendered." In such cases, new certificate(s) for the remainder of the Shares that were evidenced by the old certificate(s) but not tendered will be sent to the registered owner, unless otherwise provided in the appropriate box on this Letter of Transmittal, as soon as practicable after the Expiration Date. All Shares represented by Share Certificates delivered to the Depository will be deemed to have been tendered unless otherwise indicated.

5. **Signatures on Letter of Transmittal; Stock Powers and Endorsements.** If this Letter of Transmittal is signed by the registered owner(s) of the Shares tendered hereby, the signature(s) must correspond with the name(s) as written on the face of the Share Certificate(s) without alteration or any other change whatsoever.

If any Shares tendered hereby are owned of record by two or more joint owners, all such owners must sign this Letter of Transmittal.

If any tendered Shares are registered in the names of different holder(s), it will be necessary to complete, sign and submit as many separate Letters of Transmittal (or facsimiles thereof) as there are different registrations of such Shares.

If this Letter of Transmittal or any certificates or stock powers are signed by trustees, executors, administrators, guardians, attorneys-in-fact, officers of corporations or others acting in a fiduciary or representative capacity, such persons should so indicate when signing, and proper evidence satisfactory to Purchaser of their authority so to act must be submitted.

If this Letter of Transmittal is signed by the registered owner(s) of the Shares listed and transmitted hereby, no endorsements of Share Certificates or separate stock powers are required unless payment is to be made to, or Share Certificates representing Shares not tendered or accepted for payment are to be issued in the name of, a person other than the registered owner(s), in which case the Share Certificates representing the Shares tendered by this Letter of Transmittal must be endorsed or accompanied by appropriate stock powers, in either case, signed exactly as the name(s) of the registered owner(s) or holder(s) appear(s) on the Share Certificates. Signatures on such Share Certificates or stock powers must be guaranteed by an Eligible Institution.

If this Letter of Transmittal is signed by a person other than the registered owner(s) of the Share(s) listed, the Share Certificate(s) must be endorsed or accompanied by the appropriate stock powers, in either case, signed exactly as the name or names of the registered owner(s) or holder(s) appear(s) on the Share Certificate(s). Signatures on such Share Certificates or stock powers must be guaranteed by an Eligible Institution.

6. **Transfer Taxes.** Except as otherwise provided in this Instruction 6, Purchaser will pay any transfer taxes with respect to the transfer and sale of Shares to it or to its order pursuant to the Offer. For the

avoidance of doubt, transfer taxes do not include United States federal income or backup withholding taxes. If, however, payment of the purchase price is to be made to, or (in the circumstances permitted hereby) if Share Certificates not tendered or accepted for payment are to be registered in the name of, any person other than the registered owner(s), or if tendered Share Certificates are registered in the name of any person other than the person signing this Letter of Transmittal, it shall be a condition of payment that satisfactory evidence of the payment of any transfer taxes (whether imposed on the registered owner(s) or such person), or exemption therefrom, be submitted.

Except as provided in this Instruction 6, it will not be necessary for transfer tax stamps to be affixed to the Share Certificates listed in this Letter of Transmittal.

7. **Special Payment and Delivery Instructions.** If a check for the purchase price is to be issued, and/or Share Certificates representing Shares not tendered or accepted for payment are to be issued or returned to, a person other than the signer(s) of this Letter of Transmittal or to an address other than that shown in the box titled "Description of Shares Tendered" above, the appropriate boxes on this Letter of Transmittal should be completed. Stockholders delivering Shares tendered hereby or by Agent's Message by book-entry transfer may request that Shares not purchased be credited to an account maintained at DTC as such stockholder may designate in the box titled "Special Payment Instructions" herein. If no such instructions are given, all such Shares not purchased will be returned by crediting the same account at DTC as the account from which such Shares were delivered.

8. **Requests for Assistance or Additional Copies.** Questions or requests for assistance may be directed to the Information Agent or the Dealer Manager at their respective addresses and telephone numbers set forth below or to your broker, dealer, commercial bank or trust company. Additional copies of the Offer to Purchase, this Letter of Transmittal and other tender offer materials may be obtained from either the Information Agent or the Dealer Manager as set forth below, and will be furnished at Purchaser's expense.

9. **Backup Withholding.** Under U.S. federal income tax laws, the Depository may be required to withhold a portion of the amount of any payments made to certain stockholders pursuant to the Offer or the Merger, as applicable. Certain stockholders or payees (including, among others, corporations, non-resident foreign individuals and foreign entities) are exempt from backup withholding. In order to avoid backup withholding, each tendering stockholder or payee that is a United States person (for U.S. federal income tax purposes), must provide the Depository with such stockholder's or payee's correct taxpayer identification number ("TIN") and certify that such stockholder or payee is exempt from or not subject to such backup withholding by completing the attached IRS Form W-9. A tendering stockholder who is a foreign individual or a foreign entity should complete, sign, and submit to the Depository the appropriate IRS Form W-8. An appropriate IRS Form W-8 may be obtained from the Depository or downloaded from the Internal Revenue Service's website at the following address: *http://www.irs.gov.* Failure to complete the IRS Form W-9 or applicable IRS Form W-8 will not, by itself, cause Shares to be deemed invalidly tendered, but may require the Depository to withhold a portion of the amount of any payments made of the Offer Price pursuant to the Offer.

Backup withholding is not an additional tax. Rather, the tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund or credit may be obtained from the IRS provided that the required information is timely furnished to the IRS.

NOTE: FAILURE TO COMPLETE AND RETURN THE IRS FORM W-9 OR APPLICABLE IRS FORM W-8 MAY RESULT IN BACKUP WITHHOLDING OF A PORTION OF ANY PAYMENTS MADE TO YOU PURSUANT TO THE OFFER. PLEASE REVIEW THE "IMPORTANT TAX INFORMATION" SECTION BELOW.

10. **Lost, Destroyed, Mutilated or Stolen Share Certificates.** If any Share Certificate has been lost, destroyed, mutilated or stolen, the stockholder should promptly notify the Company's stock transfer agent, American Stock Transfer & Trust Company, LLC at (800) 937-5449. The stockholder will then be instructed as to the steps that must be taken in order to replace the Share Certificate. This Letter of Transmittal and related documents cannot be processed until the procedures for replacing lost, mutilated, destroyed or stolen Share Certificates have been followed.

11. **Waiver of Conditions.** Subject to the terms and conditions of the Merger Agreement (as defined in the Offer to Purchase) and the applicable rules and regulations of the Securities and Exchange Commission, the conditions of the Offer may be waived by Purchaser in whole or in part at any time and from time to time in its sole discretion.

IMPORTANT: THIS LETTER OF TRANSMITTAL (OR A MANUALLY EXECUTED FACSIMILE COPY THEREOF) OR AN AGENT'S MESSAGE, TOGETHER WITH SHARE CERTIFICATE(S) OR BOOK-ENTRY CONFIRMATION AND ALL OTHER REQUIRED DOCUMENTS, MUST BE RECEIVED BY THE DEPOSITORY PRIOR TO THE EXPIRATION DATE.

IMPORTANT TAX INFORMATION

Under United States federal income tax law, a stockholder that is a non-exempt United States person (for U.S. federal income tax purposes) whose tendered Shares are accepted for payment, or whose Shares are converted in the Merger, is required by law to provide the Depository (as payer) with such stockholder's correct taxpayer identification number ("TIN") on IRS Form W-9 below. If such stockholder is an individual, the TIN is such stockholder's social security number or individual taxpayer identification number. If the Depository is not provided with the correct TIN and certain other certifications are not made, the stockholder may be subject to penalties imposed by the Internal Revenue Service ("IRS") and payments that are made to such stockholder with respect to Shares purchased pursuant to the Offer, or converted in the Merger, may be subject to backup withholding.

If backup withholding applies, the Depository is required to withhold 24% of any payments of the purchase price made to the stockholder. Backup withholding is not an additional tax. Rather, the tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund or credit may be obtained from the IRS provided that the required information is timely furnished to the IRS.

IRS Form W-9

To prevent backup withholding on payments that are made to a United States stockholder with respect to Shares purchased pursuant to the Offer or converted in the Merger, as applicable, the stockholder is required to notify the Depository of such stockholder's correct TIN by completing IRS Form W-9 certifying, under penalties of perjury, (i) that the TIN provided on Form W-9 is correct (or that such stockholder is awaiting a TIN), (ii) that such stockholder is not subject to backup withholding because (a) such stockholder has not been notified by the IRS that such stockholder is subject to backup withholding as a result of a failure to report all interest or dividends, (b) the IRS has notified such stockholder that such stockholder is no longer subject to backup withholding or (c) such stockholder is exempt from backup withholding, and (iii) that such stockholder is a U.S. person.

What Number to Give the Depository

Each United States stockholder is generally required to give the Depository its social security number, individual taxpayer identification number or employer identification number. If the tendering stockholder has not been issued a TIN and has applied for a number or intends to apply for a number in the near future, the stockholder should write "Applied For" in Part I, sign and date the Form W-9. Notwithstanding that "Applied For" is written in Part I, the Depository will withhold 24% of all payments of the purchase price to such stockholder until a TIN is provided to the Depository. Such amounts will be refunded to such surrendering stockholder if a TIN is provided to the Depository within 60 days. We note that your IRS Form W-9, including your TIN, may be transferred from the Depository to the Paying Agent, in certain circumstances.

Please consult your accountant or tax advisor for further guidance regarding the completion of IRS Form W-9, IRS Form W-8BEN, or another version of IRS Form W-8 to avoid the application of backup withholding, or contact the Depository.

Form **W-9**

(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

>Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate single-member LLC

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) > _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) >

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			-			-				

or

Employer identification number

			-							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here **Signature of U.S. person >** **Date >**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

• Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)

• Form 1099-C (canceled debt)

• Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later*.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

• An individual who is a U.S. citizen or U.S. resident alien;

• A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

• An estate (other than a foreign estate); or

• A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

• In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;

• In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and

• In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a

C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	**THEN check the box for . . .**
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

1 See Form 1099-MISC, Miscellaneous Income, and its instructions.

2 However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/Businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct

TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodialaccount of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee[1] The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantortrust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

The Depository for the Offer to Purchase is:

If delivering by hand, express mail, courier, or other expedited service:	By mail:
American Stock Transfer & Trust Co., LLC Operations Center Attn: Reorganization Department 6201 15th Avenue Brooklyn, New York 11219	American Stock Transfer & Trust Co., LLC Operations Center Attn: Reorganization Department 6201 15th Avenue Brooklyn, New York 11219

DELIVERY OF THIS LETTER OF TRANSMITTAL TO AN ADDRESS OTHER THAN AS SET FORTH ABOVE WILL NOT CONSTITUTE A VALID DELIVERY TO THE DEPOSITORY.

Any questions or requests for assistance may be directed to the Information Agent at its telephone number and location listed below. Requests for additional copies of this Offer to Purchase and the Letter of Transmittal may be directed either to the Information Agent or the Dealer Manager at their respective telephone numbers and locations listed below. You may also contact your broker, dealer, commercial bank or trust company or other nominee for assistance concerning the Offer.

The Information Agent for the Offer is:

D.F. King & Co., Inc.

48 Wall Street, 22nd Floor
New York, New York 10005
Email: drna@dfking.com

Shareholders may call toll free: (888) 542-7446
Banks and Brokers may call collect: (212) 269-5550

Offer To Purchase For Cash
All Outstanding Shares of Common Stock
of

DICERNA PHARMACEUTICALS, INC.

a Delaware corporation
at
$38.25 NET PER SHARE
Pursuant to the Offer to Purchase dated November 24, 2021
by

NNUS NEW RESEARCH, INC.

an indirect wholly owned subsidiary of

NOVO NORDISK A/S

THE OFFER AND WITHDRAWAL RIGHTS WILL EXPIRE AT ONE MINUTE AFTER 11:59 P.M., EASTERN TIME, ON DECEMBER 22, 2021, UNLESS THE OFFER IS EXTENDED OR EARLIER TERMINATED.

November 24, 2021

To Brokers, Dealers, Commercial Banks, Trust Companies and Other Nominees:

We have been engaged by NNUS New Research, Inc., a Delaware corporation ("Purchaser") and an indirect wholly owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab* ("Parent"), to act as Information Agent in connection with Purchaser's offer to purchase all of the outstanding shares of common stock, par value $0.0001 per share (the "Shares"), of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the "Company"), at a price of $38.25 per Share, net to the holder in cash, without interest (the "Offer Price") and subject to any withholding of taxes, upon the terms and subject to the conditions set forth in the Offer to Purchase dated November 24, 2021 (the "Offer to Purchase"), and the related Letter of Transmittal (the "Letter of Transmittal" and which, together with the Offer to Purchase, each as may be amended or supplemented from time to time, constitute the "Offer") enclosed herewith. Please furnish copies of the enclosed materials to those of your clients for whom you hold Shares registered in your name or in the name of your nominee.

THE BOARD OF DIRECTORS OF THE COMPANY HAS UNANIMOUSLY RECOMMENDED THAT STOCKHOLDERS ACCEPT THE OFFER AND TENDER ALL OF THEIR SHARES TO PURCHASER PURSUANT TO THE OFFER.

The Offer is not subject to any financing condition. The Offer is subject to the conditions described in Section 13 of the Offer to Purchase.

For your information and for forwarding to your clients for whom you hold Shares registered in your name or in the name of your nominee, we are enclosing the following documents:

1. The Offer to Purchase;

2. The Letter of Transmittal for your use in accepting the Offer and tendering Shares and for the information of your clients, together with the included Internal Revenue Service Form W-9;

3. A form of letter which may be sent to your clients for whose accounts you hold Shares registered in your name or in the name of your nominee, with space provided for obtaining such clients' instructions with regard to the Offer; and

4. The Company's Solicitation/Recommendation Statement on Schedule 14D-9, dated November 24, 2021.

We urge you to contact your clients as promptly as possible. Please note that the Offer and withdrawal rights will expire at one minute after 11:59 p.m., Eastern Time, on December 22, 2021 (such date, or any subsequent date to which the expiration of the Offer is extended, the "Expiration Date"), unless the Offer is extended or earlier terminated.

The Offer is being made in connection with the Agreement and Plan of Merger, dated as of November 17, 2021 (together with any amendments or supplements thereto, the "Merger Agreement"), among the Company, Parent and Purchaser, pursuant to which, after the completion of the Offer and the satisfaction or waiver of certain conditions, Purchaser will be merged with and into the Company, without a vote of the Company's stockholders in accordance with Section 251(h) of the General Corporation Law of the State of Delaware (the "DGCL"), and the Company will be the surviving corporation and an indirect wholly owned subsidiary of Parent (such merger, the "Merger"). At the effective time of the Merger, all then outstanding Shares (other than (i) Shares held by the Company (or held in the Company's treasury), (ii) Shares held by Parent, Purchaser or any other direct or indirect wholly owned subsidiary of Parent or the Company and (iii) Shares held by stockholders who are entitled to appraisal rights under Section 262 of the DGCL and have properly exercised and perfected their respective demands for appraisal of such Shares in the time and manner provided in Section 262 of the DGCL and, as of the effective time of the Merger, have neither effectively withdrawn nor lost their rights to such appraisal and payment under the DGCL) will be converted into the right to receive consideration equal to the Offer Price, without interest and subject to any withholding of taxes, upon the terms and subject to the conditions set forth in the Offer to Purchase. **As a result of the Merger, the Company would cease to be a publicly traded company and will become wholly owned by Parent.**

THE BOARD OF DIRECTORS OF THE COMPANY HAS UNANIMOUSLY RECOMMENDED THAT STOCKHOLDERS ACCEPT THE OFFER AND TENDER ALL OF THEIR SHARES TO PURCHASER PURSUANT TO THE OFFER.

For Shares to be properly tendered pursuant to the Offer, the share certificates or confirmation of receipt of such Shares under the procedure for book-entry transfer, together with a properly completed and duly executed Letter of Transmittal, including any required signature guarantees, or, in the case of book-entry transfer, either such Letter of Transmittal or an Agent's Message (as defined in Section 3 of the Offer to Purchase) in lieu of such Letter of Transmittal, and any other documents required in the Letter of Transmittal, must be timely received by the American Stock Transfer & Trust Company, LLC (the "Depository"). **We are not providing for guaranteed delivery procedures. Therefore, stockholders of the Company must allow sufficient time for the necessary tender procedures to be completed during normal business hours of the Depository.**

Except as set forth in the Offer to Purchase, Purchaser will not pay any fees or commissions to any broker or dealer or other person, other than to us, as the information agent, and the Depository, for soliciting tenders of Shares pursuant to the Offer. Purchaser will, however, upon request, reimburse brokers, dealers, commercial banks, trust companies and other nominees for customary mailing and handling expenses incurred by them in forwarding the offering material to their customers. Purchaser will pay all stock transfer taxes applicable to its purchase of Shares pursuant to the Offer, subject to Instruction 6 of the Letter of Transmittal.

Any inquiries you may have with respect to the Offer should be addressed to, and additional copies of the enclosed materials may be obtained from, the undersigned at the address and telephone numbers set forth below.

Very truly yours,

D.F. King & Co., Inc.

Nothing contained herein or in the enclosed documents shall render you the agent of Parent, Purchaser, the Information Agent or the Depository or any affiliate of any of them or authorize you or any other person to use any document or make any statement on behalf of any of them in connection with the Offer other than the enclosed documents and the statements contained therein.

The Information Agent for the Offer is:

D.F. King & Co., Inc.

48 Wall Street, 22nd Floor
New York, New York 10005
Email: drna@dfking.com

Shareholders may call toll free: (888) 542-7446
Banks and Brokers may call collect: (212) 269-5550

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November 24, 2021

To Our Clients:

Enclosed for your consideration are the Offer to Purchase, dated November 24, 2021 (the "Offer to Purchase"), and the related Letter of Transmittal (the "Letter of Transmittal" and which, together with the Offer to Purchase, as each may be amended or supplemented from time to time, constitute, the "Offer") in connection with the offer by NNUS New Research, Inc., a Delaware corporation ("Purchaser") and an indirect wholly owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab* ("Parent"), to purchase, subject to certain conditions, including the satisfaction of the Minimum Condition, as defined in the Offer to Purchase, all of the outstanding shares of common stock, par value $0.0001 per share (the "Shares"), of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the "Company"), at a price of $38.25 per Share, net to the holder in cash, without interest (the "Offer Price") and subject to any withholding of taxes, upon the terms and subject to the conditions of the Offer.

THE BOARD OF DIRECTORS OF THE COMPANY HAS UNANIMOUSLY RECOMMENDED THAT YOU ACCEPT THE OFFER AND TENDER ALL OF YOUR SHARES PURSUANT TO THE OFFER.

We or our nominees are the holder of record of Shares held for your account. A tender of such Shares can be made only by us as the holder of record and pursuant to your instructions. The Letter of Transmittal accompanying this letter is furnished to you for your information only and cannot be used by you to tender Shares held by us for your account.

We request instructions as to whether you wish for us to tender any or all of the Shares held by us for your account, upon the terms and subject to the conditions set forth in the enclosed Offer to Purchase and the Letter of Transmittal.

Please note carefully the following:

1. The offer price for the Offer is $38.25 per Share, net to you in cash, without interest and subject to any withholding of taxes.

2. The Offer is being made for all outstanding Shares.

3. The Offer is being made in connection with the Agreement and Plan of Merger, dated as of November 17, 2021 (together with any amendments or supplements thereto, the "Merger Agreement"), among the Company, Parent and Purchaser, pursuant to which, after the completion of the Offer and the satisfaction or

waiver of certain conditions, Purchaser will be merged with and into the Company, without a vote of the Company's stockholders in accordance with Section 251(h) of the General Corporation Law of the State of Delaware (the "DGCL"), and the Company will be the surviving corporation and a direct wholly-owned subsidiary of Parent (such merger, the "Merger"). At the effective time of the Merger, all then outstanding Shares (other than (i) Shares held by the Company (or held in the Company's treasury), (ii) Shares held by Parent, Purchaser or any other direct or indirect wholly-owned subsidiary of Parent and Company, and (iii) Shares held by stockholders who are entitled to appraisal rights under Section 262 of the DGCL and have properly exercised and perfected their respective demands for appraisal of such Shares in the time and manner provided in Section 262 of the DGCL and, as of the effective time of the Merger, have neither effectively withdrawn nor lost their rights to such appraisal and payment under the DGCL) will be converted into the right to receive consideration equal to the Offer Price, without interest and subject to any withholding of taxes, upon the terms and subject to the conditions set forth in the Offer to Purchase. **As a result of the Merger, the Company would cease to be a publicly traded company and will become wholly owned by Parent.**

4. The Offer and withdrawal rights will expire at one minute after 11:59 p.m., Eastern Time, on December 22, 2021, unless the Offer is extended by Purchaser or earlier terminated.

5. The Offer is not subject to any financing condition. The Offer is subject to the conditions described in Section 13 of the Offer to Purchase.

6. **The Board of Directors of the Company has unanimously recommended that you accept the Offer and tender all of your shares pursuant to the Offer.**

7. Tendering stockholders who are record owners of their Shares and who tender directly to American Stock Transfer & Trust Company, LLC., the depository for the Offer, will not be obligated to pay brokerage fees, commissions or similar expenses or, except as otherwise provided in Instruction 6 of the Letter of Transmittal, stock transfer taxes with respect to the purchase of Shares by Purchaser pursuant to the Offer.

If you wish to have us tender any or all of your Shares, then please so instruct us by completing, executing, detaching and returning to us the Instruction Form on the detachable part hereof. An envelope to return your instructions to us is enclosed. If you authorize tender of your Shares, then all such Shares will be tendered unless otherwise specified on the Instruction Form.

Your prompt action is requested. Your Instruction Form should be forwarded to us in ample time to permit us to submit the tender on your behalf before the Expiration Date.

The Offer is being made to all holders of Shares. Purchaser is not aware of any jurisdiction in which the making of the Offer or the acceptance thereof would be prohibited by securities, "blue sky" or other valid laws of such jurisdiction. If Purchaser becomes aware of any U.S. state in which the making of the Offer or the acceptance of Shares pursuant thereto would not be in compliance with an administrative or judicial action taken pursuant to a U.S. state statute, Purchaser will make a good faith effort to comply with any such law. If, after such good faith effort, Purchaser cannot comply with any such law, the Offer will not be made to the holders of Shares in such state. In any jurisdictions where applicable laws require the Offer to be made by a licensed broker or dealer, the Offer shall be deemed to be made on behalf of Purchaser by one or more registered brokers or dealers licensed under the laws of such jurisdiction to be designated by Purchaser.

INSTRUCTION FORM
With Respect to the Offer to Purchase for Cash
All Outstanding Shares of Common Stock
of

DICERNA PHARMACEUTICALS, INC.

a Delaware corporation
at
$38.25 NET PER SHARE
Pursuant to the Offer to Purchase dated November 24, 2021
by

NNUS NEW RESEARCH, INC.

an indirect wholly owned subsidiary of

NOVO NORDISK A/S

The undersigned acknowledge(s) receipt of your letter and the enclosed Offer to Purchase, dated November 24, 2021 ("Offer to Purchase"), and the related Letter of Transmittal ("Letter of Transmittal" and which, together with the Offer to Purchase, each as may be amended or supplemented from time to time, constitute, the "Offer"), in connection with the offer by NNUS New Research, Inc., a Delaware corporation ("Purchaser") and an indirect wholly owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab*, to purchase, subject to certain conditions, including the satisfaction of the Minimum Condition, as defined in the Offer to Purchase, all of the outstanding shares of common stock, par value $0.0001 per share (the "Shares"), of Dicerna Pharmaceuticals, Inc., a Delaware corporation, at a price of $38.25 per Share, net to the holder in cash, without interest and subject to any withholding of taxes, upon the terms and subject to the conditions of the Offer.

The undersigned hereby instruct(s) you to tender to Purchaser the number of Shares indicated below or, if no number is indicated, all Shares held by you for the account of the undersigned, upon the terms and subject to the conditions set forth in the Offer. The undersigned understands and acknowledges that all questions as to validity, form and eligibility of the surrender of any certificate representing Shares submitted on my behalf will be determined by Purchaser and such determination shall be final and binding.

ACCOUNT NUMBER:

NUMBER OF SHARES BEING TENDERED HEREBY: **SHARES***

The method of delivery of this document is at the election and risk of the tendering stockholder. If delivery is by mail, then registered mail with return receipt requested, properly insured, is recommended. In all cases, sufficient time should be allowed to ensure timely delivery by the Expiration Date (as defined in the Offer to Purchase).

Dated: _____

_____
Signatures(s)

_____
Please Print Name(s)

Address(es): _____
(Include Zip Code)

Area Code and Telephone No. _____

Tax Identification or Social Security No. _____

* Unless otherwise indicated, it will be assumed that all Shares held by us for your account are to be tendered.

This announcement is neither an offer to purchase nor a solicitation of an offer to sell Shares (as defined below). The Offer (as defined below) is made solely pursuant to the Offer to Purchase, dated November 24, 2021, and the related Letter of Transmittal, and any amendments or supplements to such Offer to Purchase or Letter of Transmittal. Purchaser (as defined below) is not aware of any state where the making of the Offer is prohibited by any administrative or judicial action pursuant to any valid state statute. If Purchaser becomes aware of any valid state statute prohibiting the making of the Offer or the acceptance of the Shares pursuant thereto, Purchaser will make a good faith effort to comply with that state statute or seek to have such statute declared inapplicable to the Offer. If, after a good faith effort, Purchaser cannot do so, Purchaser will not make the Offer to the holders of Shares in that state. Except as set forth above, the Offer is being made to all holders of Shares. In any jurisdiction where the securities, "blue sky" or other laws require the Offer to be made by a licensed broker or dealer, the Offer will be deemed to be made on behalf of Purchaser by one or more registered brokers or dealers that are licensed under the laws of such jurisdiction.

Notice of Offer to Purchase
All Outstanding Shares of Common Stock
of
Dicerna Pharmaceuticals, Inc.
at
$38.25 Net Per Share
Pursuant to the Offer to Purchase dated November 24, 2021
by
NNUS New Research, Inc.
An indirect wholly owned subsidiary of
Novo Nordisk A/S

NNUS New Research, Inc., a Delaware corporation ("Purchaser"), is offering to purchase all outstanding shares of common stock, par value $0.0001 per share (the "Shares"), of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the "Company"), at a price per Share of $38.25, net to the holder in cash (the "Offer Price"), without interest and subject to any withholding of taxes, upon the terms and subject to the conditions described in the Offer to Purchase, dated November 24, 2021 (together with any amendments or supplements thereto, the "Offer to Purchase"), and in the related Letter of Transmittal (together with any amendments or supplements thereto, the "Letter of Transmittal" and, together with the Offer to Purchase, the "Offer"). Purchaser is a wholly owned subsidiary of Novo Nordisk A/S, a Danish *aktieselskab* ("Parent").

The Offer is being made in connection with the Agreement and Plan of Merger, dated as of November 17, 2021 (together with any amendments or supplements thereto, the "Merger Agreement"), among the Company, Parent and Purchaser, pursuant to which, after the completion of the Offer and the satisfaction or waiver of certain conditions, Purchaser will be merged with and into the Company, and the Company will be the surviving corporation and an indirect wholly owned subsidiary of Parent (such merger, the "Merger"). At the effective time of the Merger, each Share issued and then outstanding (other than (i) Shares held by the Company (or held in the treasury of the Company), (ii) Shares held by Parent, Purchaser or any other direct or indirect wholly owned subsidiary of Parent and the Company and (iii) Shares held by a holder who properly exercises and perfects appraisal rights in accordance with Section 262 of the General Corporation Law of the State of Delaware ("DGCL") with respect to such Shares and, as of the effective time of the Merger, have neither effectively withdrawn nor lost their rights to such appraisal and payment under the DGCL) will be canceled and converted automatically into the right to receive the Offer Price, net to the holder in cash, without interest and subject to any applicable withholding of taxes. As a result of the Merger, the Company will cease to be a publicly-traded company and will become an indirect wholly owned subsidiary of Parent. Under no circumstances will interest be paid on the Offer Price for Shares, regardless of any extension of the Offer or any delay in making payment for Shares. The parties to the Merger Agreement have agreed that, upon the terms and subject to the conditions specified in the Merger Agreement, the Merger will become effective as soon as practicable after the consummation of the Offer, without a vote of the Company's stockholders to adopt the Merger Agreement, in

accordance with Section 251(h) of the DGCL. Accordingly, if the Offer is consummated, Purchaser does not anticipate seeking the approval of the Company's remaining public stockholders before effecting the Merger. The Merger Agreement is more fully described in the Offer to Purchase.

Tendering stockholders who have Shares registered in their names and who tender directly to American Stock Transfer & Trust Company, LLC (the "Depository") will not be obligated to pay brokerage fees or commissions or, except as set forth in the Letter of Transmittal, transfer taxes on the purchase of Shares by Purchaser pursuant to the Offer. Stockholders who hold their Shares through a broker or bank should consult with such institution as to whether it charges any service fees or commissions.

THE OFFER AND WITHDRAWAL RIGHTS WILL EXPIRE AT ONE MINUTE AFTER 11:59 P.M., EASTERN TIME, ON DECEMBER 22, 2021 (SUCH DATE, OR ANY SUBSEQUENT DATE TO WHICH THE EXPIRATION OF THE OFFER IS EXTENDED, THE "EXPIRATION DATE"), UNLESS THE OFFER IS EXTENDED OR EARLIER TERMINATED.

The Offer is conditioned upon, among other things, (a) the Merger Agreement not having been terminated in accordance with its terms (the "Termination Condition") and (b) the satisfaction of:

(i) the Minimum Condition (as described below);

(ii) the HSR Condition (as described below); and

(iii) the Governmental Impediment Condition (as described below).

The Offer is not subject to a financing condition. The Minimum Condition requires that the number of Shares validly tendered and not validly withdrawn, together with all other Shares (if any) beneficially owned by Parent and its subsidiaries, represents one Share more than 50% of the total number of Shares outstanding at the time of the expiration of the Offer. The HSR Condition requires that the waiting period (or any extension thereof) applicable to the Offer under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, shall have expired or been terminated. The Governmental Impediment Condition requires that there shall not have been issued by any governmental body of competent jurisdiction in any jurisdiction in which Parent or the Company has business operations, and remain in effect any temporary restraining order, preliminary or permanent injunction preventing the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger, nor shall any legal requirement have been promulgated, enacted, issued or deemed applicable to the Offer or the Merger by any governmental body in any jurisdiction in which Parent or the Company has business operations which prohibits or makes illegal the acquisition of or payment for Shares pursuant to the Offer or the consummation of the Merger. The Offer is also subject to other conditions as described in the Offer to Purchase (collectively, the "Offer Conditions"). See Section 13—"Conditions of the Offer" of the Offer to Purchase.

After careful consideration, the board of directors of the Company has unanimously (i) determined that the Merger Agreement, and the transactions contemplated by the Merger Agreement, including the Offer and the Merger (the "Transactions"), are fair to, and in the best interest of, the Company and its stockholders, (ii) declared it advisable to enter into the Merger Agreement, (iii) approved the execution, delivery and performance by the Company of the Merger Agreement and the consummation of the Transactions, including the Offer and the Merger, (iv) resolved that the Merger will be effected under Section 251(h) of the DGCL and (v) resolved to recommend that the stockholders of the Company tender their Shares to Purchaser pursuant to the Offer.

The Company will file a Solicitation/Recommendation Statement on Schedule 14D-9 (the "Schedule 14D-9") with the United States Securities and Exchange Commission (the "SEC") and disseminate the Schedule 14D-9 to the Company's stockholders with the Offer to Purchase. The Schedule 14D-9 will include a description of the Company's board of directors' reasons for authorizing and approving the Merger Agreement and the transactions contemplated thereby and therefore stockholders are encouraged to review the Schedule 14D-9 carefully and in its entirety.

The Merger Agreement provides that, subject to the parties' respective termination rights in the Merger Agreement (i) if at any then-scheduled Expiration Date, any condition to the Offer is not satisfied and has not

been waived by Purchaser or Parent, to the extent waivable, Purchaser may, in its discretion, extend the Offer on one or more occasions for an additional period of up to ten business days per extension in order to permit such condition to be satisfied, (ii) Purchaser will extend the Offer for any period required by any applicable legal requirement, or any interpretation or position of the SEC or the Nasdaq Global Select Market ("Nasdaq") and periods of up to ten business days per extension until any waiting period (and any extension thereof) applicable to the consummation of the Offer under the HSR Act has expired or terminated, and (iii) if, as of the then-scheduled Expiration Date, any condition to the Offer is not satisfied and has not been waived by Purchaser or Parent, to the extent waivable by Purchaser or Parent, Purchaser will, at the Company's request, extend the Offer on one or more occasions for an additional period of up to ten business days per extension to permit such condition to be satisfied. However, in no event will Purchaser (1) be required to extend the Offer beyond the earlier occurrence of (x) the valid termination of the Merger Agreement in compliance with its terms and (y) May 17, 2022 (as may be extended until September 17, 2022, in accordance with the Merger Agreement) (such earlier occurrence, the "Extension Deadline"), or (2) be permitted to extend the Offer beyond the Extension Deadline without the Company's prior written consent. Subject to the parties' respective termination rights under the Merger Agreement, without the Company's prior written consent, Purchaser may not terminate the Offer, or permit the Offer to expire, before the Extension Deadline.

The purpose of the Offer and the Merger is for Parent and its affiliates, through Purchaser, to acquire control of, and the entire equity interest in, the Company. Following the consummation of the Offer, subject to the satisfaction or waiver of the conditions set forth in the Merger Agreement, Parent and Purchaser intend to effect the Merger. No appraisal rights are available to holders of Shares in connection with the Offer. However, if the Merger is consummated, a stockholder of the Company that has not tendered its Shares in the Offer will have rights under Section 262 of the DGCL to dissent from the Merger and demand appraisal of, and obtain payment in cash for the "fair value" of, that stockholder's Shares.

On the terms and subject to the conditions of the Merger Agreement and the applicable rules and regulations of the SEC, Purchaser expressly reserves the right to (i) increase the amount of cash constituting the Offer Price, (ii) waive (to the extent permitted under applicable legal requirements) any Offer Condition and (iii) make any other changes in the terms and conditions of the Offer that are not inconsistent with the terms of the Merger Agreement. However, without the prior written approval of the Company, Parent and Purchaser are not permitted to (i) decrease the Offer Price; (ii) change the form of consideration payable in the Offer; (iii) decrease the maximum number of Shares sought to be purchased in the Offer; (iv) impose conditions or requirements on the Offer in addition to the Offer Conditions set forth in the Offer to Purchase; (v) amend, modify or waive the Minimum Condition, the Termination Condition, the HSR Condition or the Governmental Impediment Condition; (vi) amend or modify any other term of the Offer in a manner that adversely affects, or reasonably could adversely affect, any holder of Shares in its capacity as such; (vii) terminate the Offer or accelerate, extend or otherwise change the Expiration Date except as required or provided by the terms of the Merger Agreement; or (viii) provide any "subsequent offering period" (or any extension thereof) within the meaning of Rule 14d-11 under the Exchange Act.

Any extension, waiver or amendment of the Offer or termination of the Offer will be followed, as promptly as practicable, by public announcement thereof, such announcement in the case of an extension to be issued no later than 9:00 a.m., Eastern Time, on the next business day after the previously scheduled Expiration Date.

For purposes of the Offer, if and when Purchaser gives oral or written notice to the Depository of its acceptance for payment of such Shares pursuant to the Offer, then Purchaser has accepted for payment and thereby purchased Shares validly tendered and not validly withdrawn pursuant to the Offer. Upon the terms and subject to the conditions of the Offer, payment for Shares accepted for payment pursuant to the Offer will be made by deposit of the aggregate Offer Price for such Shares therefor with the Depository, which will act as agent for the tendering stockholders for purposes of receiving payments from Purchaser and transmitting such payments to the tendering stockholders. **Under no circumstances will interest be paid on the Offer Price for Shares, regardless of any extension of the Offer or any delay in making payment for Shares.**

In all cases, payment for Shares tendered and accepted for payment pursuant to the Offer will be made only after timely receipt by the Depository of (i) certificates representing such Shares ("Share Certificates") or

confirmation of the book-entry transfer of such Shares ("Book-Entry Confirmation") into the Depository's account at The Depository Trust Company ("DTC") pursuant to the procedures set forth in the Offer to Purchase (ii) a Letter of Transmittal, properly completed and duly executed, with any required signature guarantees (or, in the case of a book-entry transfer, an Agent's Message (as defined in the Offer to Purchase) in lieu of the Letter of Transmittal), and (iii) any other documents required by the Letter of Transmittal. Accordingly, tendering stockholders may be paid at different times depending upon when Share Certificates or Book-Entry Confirmations with respect to Shares are actually received.

Shares tendered pursuant to the Offer may be withdrawn at any time prior to the expiration of the Offer and, unless theretofore accepted for payment by Purchaser pursuant to the Offer, may also be withdrawn at any time after February 21, 2022, which is the 60th day after the date of the commencement of the Offer.

For a withdrawal of Shares to be effective, a written notice or facsimile transmission of withdrawal must be timely received by the Depository at one of its addresses set forth on the back cover of this Offer to Purchase. Any notice of withdrawal must specify the name of the person having tendered the Shares to be withdrawn, the number of Shares to be withdrawn and the name of the record holder of the Shares to be withdrawn, if different from that of the person who tendered such Shares. The signature(s) on the notice of withdrawal must be guaranteed by an Eligible Institution (as defined in the Offer to Purchase), unless such Shares have been tendered for the account of any Eligible Institution. If Shares have been tendered pursuant to the procedures for book-entry transfer as set forth in the Offer to Purchase, any notice of withdrawal must specify the name and number of the account at DTC to be credited with the withdrawn Shares and must otherwise comply with DTC's procedures. If certificates representing the Shares have been delivered or otherwise identified to the Depository, the name of the registered owner and the serial numbers shown on such certificates must also be furnished to the Depository prior to the physical release of such certificates.

All questions as to the form and validity (including time of receipt) of any notice of withdrawal will be determined by us, in our sole discretion, which determination will be final and binding, subject to the rights of the tendering holders of Shares to challenge our determination in a court of competent jurisdiction. No withdrawal of Shares will be deemed to have been properly made until all defects and irregularities have been cured or waived. None of Parent, Purchaser or any of their respective affiliates or assigns, the Depository, the Information Agent, or any other person will be under any duty to give notification of any defects or irregularities in any notice of withdrawal or incur any liability for failure to give such notification. Withdrawals of tenders of Shares may not be rescinded, and any Shares properly withdrawn will be deemed not to have been validly tendered for purposes of the Offer. However, withdrawn Shares may be retendered by following one of the procedures for tendering Shares described in the Offer to Purchase at any time prior to the expiration of the Offer.

The information required to be disclosed by paragraph (d)(1) of Rule 14d-6 under the Securities and Exchange Act of 1934, as amended, is contained in the Offer to Purchase and is incorporated herein by reference.

The Company has provided Purchaser with its list of stockholders and security position listings for the purpose of disseminating information regarding the Offer to holders of Shares. The Offer to Purchase and the related Letter of Transmittal will be mailed to record holders of Shares whose names appear on the Company's stockholder list and will be furnished to brokers, dealers, commercial banks, trust companies and similar persons whose names, or the names of whose nominees, appear on the stockholder list or, if applicable, who are listed as participants in a clearing agency's security position listing, for subsequent transmittal to beneficial owners of Shares.

The receipt of the Offer Price for Shares in the Offer or consideration for Shares in the Merger will be a taxable transaction for U.S. federal income tax purposes. Stockholders should consult with their tax advisors as to the particular tax consequences of the Offer and the Merger to them. For a more complete description of the principal U.S. federal income tax consequences of the Offer and the Merger, see the Offer to Purchase.

The Offer to Purchase, the related Letter of Transmittal and the Company's Solicitation/Recommendation Statement on Schedule 14D-9 (which contains the recommendation of the Company's

board of directors and the reasons therefor) contain important information and should be read carefully and in their entirety before any decision is made with respect to the Offer.

Questions and requests for assistance may be directed to the Information Agent at the address and telephone numbers set forth below. Requests for copies of the Offer to Purchase and the related Letter of Transmittal and other tender offer materials may be directed to the Information Agent or to brokers, dealers, commercial banks or trust companies. Such copies will be furnished promptly at Purchaser's expense. Except as set forth in the Offer to Purchase, neither Purchaser nor Parent will pay any fees or commissions to any broker or dealer or any other person for soliciting tenders of Shares pursuant to the Offer.

The Information Agent for the Offer is:

D.F. KING
An AST Company

48 Wall Street, 22nd Floor
New York, New York 10005
Email: drna@dfking.com

Shareholders may call toll free: (888) 542-7446
Banks and Brokers may call collect: (212 269-5550

November 24, 2021

October 27, 2021

Novo Nordisk A/S
Novo Alle 1
2880 Bagsvaerd
Denmark

Re: Confidentiality Agreement

Novo Nordisk (referred to herein as "you or your") has requested certain Evaluation Material (as defined below) from Dicerna Pharmaceuticals, Inc. (together with its subsidiaries, the "Company") in connection with the evaluation, negotiation or completion of a potential negotiated transaction between you and the Company (the "Potential Transaction"). You and the Company are each individually referred to in this agreement (this "Agreement") individually as a "Party" and, collectively, as the "Parties."

The term "Evaluation Material" shall mean (i) all information, data, reports, analyses, compilations, studies, interpretations, forecasts and records (whether in oral, written, electronic or other form) concerning the business, operations and affairs of the Company (including any technical, trade secret or other proprietary information of the Company) furnished to you or your Representatives by the Company or its Representatives (whether in writing, electronically or orally) or otherwise made available to you or your Representatives by the Company or its Representatives, and (ii) any report, analysis, compilation, study, interpretation, forecast, record or other material prepared by you or your Representatives, in whatever form maintained (whether in written, electronic or other form) to the extent containing, reflecting or based upon, in whole or in part, any such information (collectively "Derivative Works"), but, in each case of clauses (i) and (ii), does not include information that (x) was or becomes generally available to the public other than as a result of a disclosure by you or your Representatives, or by anyone to whom you or your Representatives transmit Evaluation Material, in violation of this Agreement, (y) was or becomes available to you or your Representatives on a non-confidential basis from a source other than the Company or its Representatives, provided that such source was not known by you or your Representatives (after reasonable inquiry of such source) to be bound by an obligation prohibiting transmission of such information to you or your Representatives, or (z) is independently developed by you or your Representatives or on your behalf without the benefit or usage of any Evaluation Material.

As used herein, the term "Representatives" shall mean, with respect to a Party, such Party's directors, officers, employees, and third party attorneys, accountants, consultants, financial advisors and debt financing sources. In addition, as used herein, the following terms shall have the following meanings: (i) the term "person" shall be broadly interpreted to include, without limitation, any corporation, limited liability company, partnership, trust, association, joint venture, unincorporated organization, group, individual or governmental entity or any department, agency or political subdivision thereof; (ii) the term "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended; and (iii) the term "Affiliate" shall have the

meaning ascribed to such term under Rule 12b-2 of the Exchange Act; provided, however, that for purposes of this definition, Novo Holdings A/S and its affiliates (other than you and your subsidiaries) shall not be considered your Affiliate.

As a condition to you and your Representatives being furnished with any Evaluation Material, you agree as follows:

(1) You recognize and acknowledge the competitive value and confidential nature of the Evaluation Material and the damage that could result to the Company if information contained therein is disclosed to any person. The Evaluation Material will only be used by you and your Representatives in accordance with the terms of this Agreement.

(2) You will keep the Evaluation Material confidential and will not disclose, in whole or in part, any of the Evaluation Material to any person without the prior written consent of the Company (which may be withheld by the Company in its sole discretion); nor shall the Evaluation Material be used by you, either directly or indirectly, for any purpose other than the evaluation, negotiation or completion of a Potential Transaction; provided, however, that any of the Evaluation Material may be disclosed (i) in compliance with paragraph (9) below, solely to the extent required by applicable law, regulation or legal process; and (ii) to your Representatives who need access to such information for the sole purpose of assisting in evaluating, negotiating or completing a Potential Transaction on your behalf if, in each case, prior to any such disclosure, (x) you advise such Representative of the confidential nature of the Evaluation Material and the terms of this Agreement and (y) such Representative agrees that it will, or is otherwise legally bound to, keep the Evaluation Material confidential in accordance with the terms hereof and to comply with the terms of this Agreement applicable to such Representative. You shall be fully responsible for any action or inaction of your Representatives which is not in accordance with the terms of this Agreement. You agree to undertake reasonable precautions to safeguard and protect the confidentiality of the Evaluation Material. The Company shall be entitled to designate certain Evaluation Material that is competitively sensitive as "Clean Team Information." If the Company so designates certain Evaluation Material as Clean Team Information, the Company and you shall mutually agree on customary procedures and guidelines with respect to the access to and review of such competitively sensitive information, which may be memorialized in one or more supplements or amendments to this Agreement.

(3) In addition, without the prior written consent of the Company (which may be withheld by the Company in its sole discretion), neither you nor your Representatives will disclose to any person (i) that the Evaluation Material has been furnished and/or made available to you and, if applicable, your Representatives, (ii) that discussions or negotiations are or were taking place concerning a Potential Transaction, including the status thereof or the termination of such discussions or negotiations, (iii) any of the terms, conditions or other facts with respect to any such Potential Transaction or your consideration thereof, or (iv) the existence or terms of this Agreement, except, in each case of clauses (i) through (iv), as would be required by and in accordance with the procedures of paragraph (9) below and solely to the extent required by applicable law, regulation or legal process. Without your prior written consent (which may be withheld by you in your sole discretion), the Company shall, and shall cause its Representatives

to, not disclose to any person other than you and your Representatives any of the foregoing information under clauses (i) through (iv), except as would be required by and in accordance with the procedures of paragraph (9) applied as though the Company were the disclosing party.

(4) Without prior written consent of the Company (which may be withheld by the Company in its sole discretion), neither you nor your Representatives shall, directly or indirectly, initiate or maintain contact, or otherwise communicate, with any Representatives of the Company concerning the Evaluation Material or a Potential Transaction, and neither you nor your Representatives shall, directly or indirectly, initiate or maintain contact, or otherwise communicate, with any current or former director or member of management or any employee of the Company or any customers, vendors, suppliers or other third parties that conduct business with the Company, or any regulatory agency or other governmental authority having jurisdiction over the Company, concerning the Evaluation Material or a Potential Transaction, in each case, unless such contact has been consented to in advance by, and scheduled through, a Representative of the Company identified to you for such purpose in the course of discussions or negotiations of the Potential Transaction; provided, however, that nothing in this paragraph (4) shall prohibit or otherwise restrict you or your Representatives from contacts in the ordinary course of business consistent with past practice, not related to the Potential Transaction and without reference to the Evaluation Material or the Potential Transaction.

(5) All materials bearing, containing, disclosing or relating to Evaluation Material shall remain the property of the Company. Upon the Company's written request, all Evaluation Material (and all copies, extracts or other reproductions in whole or in part thereof) shall promptly be returned to the Company or destroyed (at your option) and not retained by you or your Representatives in any form or for any reason, and all Derivative Works shall be destroyed (such destruction to be confirmed promptly by you in writing to the Company). All Evaluation Material and Derivative Works stored electronically shall be permanently deleted by you in the event that you decide that you do not wish to proceed with a Potential Transaction or otherwise upon the Company's request (such destruction to be confirmed promptly by you in writing to the Company); provided that neither you nor your Representatives will be obligated to erase Evaluation Material contained in an archived computer system backup in accordance with your or their respective security and/or disaster recovery procedures, for which destruction will follow the regular process of such procedures. You and your Representatives may retain Evaluation Material if required by law, regulation or bona fide written internal compliance procedures, provided that such Evaluation Material shall remain subject to the terms hereof. Notwithstanding the destruction and/or deletion of the Evaluation Material and/or Derivative Works, you and your Representatives shall continue to be bound by the obligations of confidentiality and other applicable obligations under this Agreement.

(6) You hereby acknowledge and agree that the Evaluation Material is being furnished to you in consideration of your agreement that, for a period of twelve (12) months from the date hereof, you shall not, and shall cause your Affiliates or your or their respective Representatives, or any other person acting on your behalf or at your or your Affiliates' direct or indirect instruction, not to, in any manner, acting alone or in concert with others, without the prior written invitation or approval of the Board of Directors of the Company, directly or

indirectly, (i) acquire, agree to acquire or make any proposal to acquire any securities of the Company, any option to acquire any securities of the Company, any security convertible into or exchangeable for any securities of the Company or any other right to acquire any securities of the Company, (ii) seek or propose any merger, consolidation, business combination, tender or exchange offer, sale or purchase of assets or securities, dissolution, liquidation, restructuring, recapitalization or similar transactions of or involving the Company, (iii) make, or in any way participate in, any "solicitation" of "proxies" (whether or not relating to the election or removal of directors), as such terms are used in Regulation 14A promulgated under the Exchange Act, with respect to any securities of the Company, or seek to advise or influence any person with respect to the voting of any securities of the Company, or demand a copy of the stock ledger list of stockholders, or any other books and records of the Company, (iv) seek to have any candidate for nomination as a director of the Company included in the Company's proxy statement pursuant to Regulation 14a-11 promulgated under the Exchange Act (if applicable), (v) form, join or in any way participate in a "group" (within the meaning of Section 13(d)(3) of the Exchange Act) with respect to any voting securities of the Company, (vi) otherwise act, alone or in concert with others, to knowingly seek to control or influence, in any manner, the management, Board of Directors or policies of the Company, (vii) have any discussions or enter into any arrangements, understandings or agreements (whether written or oral) with, or advise, finance, assist or knowingly encourage, any other persons in connection with any of the foregoing, or make any investment in any other person that engages, or offers or proposes to engage, in any of the foregoing, or (viii) make any public announcement regarding any of the foregoing (except as required by law in respect of actions permitted hereby). Notwithstanding anything to the contrary in this paragraph (6), you shall be permitted to submit a proposal to the Board of Directors of the Company that would otherwise be prohibited by the terms of clauses (i) or (ii) of the first sentence of this paragraph (6) if any such proposal is submitted to the Board of Directors of the Company on a strictly confidential basis. You will cease to be bound by the provisions of clauses (i), (ii), (vii) and (viii) of this paragraph (6) upon the earliest to occur of the following (the period from the date of this Agreement until the earliest to occur of the following being the "Standstill Period"): (A) the day that is twelve (12) months after the date hereof; (B) the Board of Directors of the Company approves, or the Company enters into, a transaction with any person that would result in such person beneficially owning (1) 50% or more of the Company's outstanding voting securities, (2) securities convertible into 50% or more of the Company's outstanding voting securities or (3) all or substantially all of the assets of the Company; or (C) any person or "group" (within the meaning of Section 13(d)(3) of the Exchange Act) shall have commenced a tender offer or exchange offer for 50% or more of the Company's outstanding voting securities and the Board of Directors of the Company shall have either recommended that the Company's stockholders tender or exchange in such offer or failed to recommend that the Company's stockholders reject such offer within ten (10) business days following the commencement of any such offer. The expiration or earlier termination of the Standstill Period will not terminate or otherwise affect any of the other provisions of this Agreement. Notwithstanding anything to the contrary contained herein, the restrictions set forth in this Agreement on the use of Evaluation Material shall not prevent you from taking any action referred to in clause (i), (ii), (vii) or (viii) of this paragraph (6) that would otherwise be permitted after the Standstill Period; provided that nothing in this paragraph (6) shall detract from or alter your obligations under this Agreement to maintain the confidentiality of the Evaluation Material or any of the information which is subject to the provisions of paragraphs (2) or (3) above.

(7) For a period of twelve (12) months following the date of this Agreement, neither you nor any of your Affiliates or Representatives acting on your behalf shall, directly or indirectly, solicit for purposes of employment, offer to hire, hire or enter into any employment or similar contract with any senior employee or officer who is employed by the Company and with whom you have contact or of whom you become aware in connection with the Potential Transaction, nor shall you induce or encourage any such employee or officer to leave the employment of the Company. The foregoing sentence shall not restrict you from (i) the use and the hiring as a result of such use, of executive search firms or other employment agencies (so long as they are not targeted by you, directly or indirectly, at such officers or senior employees), (ii) solicitations through general advertising or other general solicitation not targeted at officers or senior employees of the Company or its subsidiaries and the hiring as a result of such solicitations, and (iii) the solicitation or hiring of any such officer or senior employee from and after six (6) months after his or her employment with the Company has ceased.

(8) This Agreement does not constitute or create any obligation of the Company or its Representatives to provide any Evaluation Material or other information to you, but merely defines the duties and obligations of you and your Representatives with respect to the Evaluation Material to the extent it may be disclosure or made available to you. Neither the Company nor its Representatives makes any representation or warranty, express or implied, as to the accuracy or completeness of the Evaluation Material. You will conduct your own independent investigation and analysis. You agree that neither the Company nor its Representatives shall have any liability to you or your Representatives resulting from the use of the Evaluation Material or the Potential Transaction other than as may be set forth in a definitive agreement between you and the Company concerning the Potential Transaction. Notwithstanding any other provision hereof, the Company reserves the right not to make available hereunder any information the provision of which is determined by it, in its sole discretion, to be inadvisable or inappropriate.

(9) Notwithstanding anything to the contrary set forth herein, in the event that you or any of your Representatives are requested or legally required to disclose all or any part of the Evaluation Material or any of the information which is subject to the provisions of paragraphs (2) or (3) above by applicable law, regulation or formal legal process, you will, to the extent legally permissible (i) provide the Company with prompt written notice of the existence, terms and circumstances surrounding such requirement so that the Company may seek (at the Company's sole expense) a protective order or other appropriate remedy or waive compliance with the provisions of this Agreement and (ii) consult with the Company on the advisability of taking legally available steps to (at the Company's sole expense) resist or narrow such request or requirement. In the event that such protective order or other remedy is not obtained or the Company waives compliance with the provisions of this Agreement, you will furnish only that portion of the Evaluation Material or take only such action as, based upon the advice of your legal counsel, is legally required and will use reasonable best efforts to obtain reliable assurance that confidential treatment will be accorded any Evaluation Material (or other information required to be kept confidential pursuant to this Agreement) so furnished. You shall cooperate

with any action reasonably requested by the Company (at the Company's sole expense) to obtain a protective order or other reliable assurance that confidential treatment will be accorded to the Evaluation Material.

(10) You acknowledge that you and your Representatives may receive material non-public information in connection with the evaluation of a Potential Transaction and you are aware (and you will so advise your Representatives) that the United States securities laws impose restrictions on trading in securities when in possession of such information or from communicating such information to any other person under circumstances in which it is reasonably foreseeable that such person is likely to purchase or sell such securities in reliance on such information.

(11) You acknowledge and agree that in the event of any breach of this Agreement, the Company would be immediately and irreparably harmed and could not be made whole by monetary damages. It is accordingly agreed that the Company, in addition to any other remedy to which it may be entitled in law or in equity, shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to compel specific performance of this Agreement, without the need for proof of actual damages. You agree to waive, and to direct your Representatives to waive, any requirements for the securing or posting of any bond in connection with such remedy.

(12) You agree that the Company has not granted to you or your Representatives any license, copyright, or similar right with respect to any of the Evaluation Material or any other information provided to you or your Representatives by or on behalf of the Company.

(13) You acknowledge and agree that (i) the Company is free to conduct the process leading up to a Potential Transaction as the Company, in its sole discretion, may determine (including, without limitation, by negotiating with any prospective buyer and entering into a preliminary or definitive agreement without prior notice to you, your Representatives or any other person); (ii) the Company reserves the right, in its sole discretion, to change the procedures relating to your consideration of the Potential Transaction at any time without prior notice to you, your Representatives or any other person, to reject any and all proposals made by you or any of your Representatives with regard to the Potential Transaction, and to terminate discussions and negotiations with you at any time and for any reason; and (iii) unless and until a written definitive agreement concerning the Potential Transaction has been executed, neither the Company nor any of its Representatives will have any legal obligation or liability to you of any kind whatsoever with respect to the Potential Transaction, whether by virtue of this Agreement or any other written or oral expression with respect to the Potential Transaction or otherwise.

(14) This Agreement may be signed in one or more counterparts, each of which need not contain the signature of all Parties, and all such counterparts taken together shall constitute a single agreement. This Agreement shall constitute the entire agreement between the Parties with regard to the subject matter hereof (it being acknowledged and agreed that the Parties are subject to separate existing confidentiality and use restrictions under the Collaboration and License Agreement, dated November 15, 2019, by and between the Parties, which shall continue to apply to information and activities under such agreement and this Agreement shall not apply to any

such information or activities). This Agreement shall be binding on and inure to the benefit of the Parties and their respective successors and assigns. The provisions and covenants set forth in this Agreement may be amended, modified or waived only by an instrument in writing executed by you and the Company. No failure or delay by the Company in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other further exercise thereof or the exercise of any other right, power, or privilege hereunder. If any portion of this Agreement shall be declared invalid or unenforceable, the remainder of this Agreement shall be unaffected thereby and shall remain in full force and effect.

(15) In the event there is any conflict, inconsistency or additional obligation between this Agreement and the terms and conditions of any electronic dataroom now or hereafter applicable to a Party or its Representatives, the terms and conditions of this Agreement shall govern and constitute the terms and conditions with respect to the access of Evaluation Material by a Party and its Representatives in any electronic dataroom.

(16) The Parties do not confer any rights or remedies upon any person other than the Parties to this Agreement and their respective successors and permitted assigns.

(17) The confidentiality obligations and use restrictions under this Agreement shall terminate and be of no further force or effect with respect to any Evaluation Material on the third (3rd) anniversary of the date of this Agreement (or, to the extent the Company is bound by written confidentiality obligations and use restrictions to third parties that require the Company to adhere to a longer period in order to provide certain Evaluation Material to you and your Representatives in compliance therewith, such longer period shall apply with respect to such Evaluation Material to the extent you or your Representatives receive access to such Evaluation Material and such Evaluation Material sets forth such longer period), provided that such termination shall in no way affect the Company's rights with respect to a breach by you or your Representatives of the terms of this Agreement which occurred prior to the date of such termination.

(18) This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware without giving effect to the principles of conflicts of laws thereof. The Parties hereby agree that any suit, action or proceeding seeking to enforce any provision of, or based on any matter arising out of or in connection with, this Agreement, whether in contract, tort or otherwise, shall be brought in the Court of Chancery of the State of Delaware (or, if such court lacks subject matter jurisdiction, in the state or federal courts situated in New Castle County in the State of Delaware), so long as such court shall have subject-matter jurisdiction over such suit, action or proceeding, and that any cause of action arising out of this Agreement shall be deemed to have arisen from a transaction of business in the State of Delaware. Each of the Parties hereby irrevocably consents to the jurisdiction of such court (and of the appropriate appellate courts therefrom) in any such suit, action or proceeding and irrevocably waives, to the fullest extent permitted by law, any objection that it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in such court or that any such suit, action or proceeding that is brought in such court has been brought in an inconvenient forum.

[Remainder of page intentionally blank]

Please acknowledge your agreement to the foregoing by countersigning this letter in the place provided below.

Very truly yours,

DICERNA PHARMACEUTICALS, INC

By: /s/ Douglas Fambrough
Name: Douglas Fambrough
Title: President & CEO

Confirmed and Agreed to as of
the date first written above:

NOVO NORDISK A/S

By: /s/ Karsten Munk Knudsen
Name: Karsten Munk Knudsen
Title: Executive Vice President and Chief Financial Officer

Exhibit (d)(5)

MUTUAL CONFIDENTIALITY AGREEMENT

This mutual confidentiality agreement (the "Agreement") shall become effective as of August 14, 2018 (the "Effective Date").

By and between

Novo Nordisk A/S
Novo Allé
2880 Bagsvaerd
Denmark
CVR no: 24256790

(hereinafter referred to as "Novo Nordisk")

And

Dicerna Pharmaceuticals, Inc.
87 Cambridgepark Drive
Cambridge, MA 02140
United States

(hereinafter referred to as "Company")

Novo Nordisk and Company are hereinafter also referred to individually as "Party" and collectively as "Parties".

1. PURPOSE

1.1 This Agreement is made in order for each Party and its Affiliates (the "Disclosing Party") to disclose to the other Party and its Affiliates {the "Receiving Party"), during the term of this Agreement, such technical, scientific, business, financial and other information as the Disclosing Party may elect to disclose so that the Receiving Party may use the same solely for the evaluation of a potential scientific or business relationship between the Parties (the "Purpose"). The Parties desire to protect their Confidential Information from unauthorized use and disclosure as agreed herein.

2. CONFIDENTIAL INFORMATION

2.1 As used herein, "Confidential Information" means all information related to the Field (as defined below) disclosed by or on behalf of Disclosing Party or its Authorized Persons under this Agreement, whether written, oral, graphic, electronic or in any other form. This Agreement, the terms hereof and the fact that negotiations hereunder have taken place shall also be deemed Confidential Information of both Parties. Confidential Information must be clearly marked "Confidential" and Information disclosed in oral form shall be deemed Confidential Information only to the extent that it is confirmed in writing to receiving party and marked "Confidential" within thirty (30) days after the date of oral disclosure.

Field. As used herein, "Field" for Novo Nordisk means the collaboration or business arrangement with the Company, including disclosure of specific target genes (listed in Appendix A, as agreed to by mutual agreement by both Parties) within the therapeutic areas including CVD, NASH and Type 2 Diabetes whose expression can be controlled by oligonucleotides independent of modality, specifically excluding gene targets identified as unavailable due to the Company's existing business arrangement with other third parties. As used herein, "Field" for Company means Company's proprietary platform for design, synthesis, formulation and delivery of siRNA and other oligonucleotides, and platform for improving the design, composition, chemistry and methods of synthesis, leading to increased stability and efficacy of controlling gene expression by said siRNA, specifically excluding application of said platform towards targets identified as being exclusively selected in any business arrangement with other third party(s).

2.2 **Non-Use and Non-Disclosure Obligations.** Each Party undertakes from the date of disclosure of the other Party's Confidential Information and for a period of five (5) years hereafter i) to treat all Confidential Information as strictly confidential, ii) to not disclose Confidential Information to any third party and iii) to use Confidential Information only for the Purpose. The Parties shall exercise the same degree of care to avoid disclosure and non-use of Confidential Information as if it were their own, using at least a reasonable standard of care. Receiving Party shall promptly notify Disclosing Party if Receiving Party becomes aware that any Confidential Information has been made available to any third party, or of any breach of confidence by any person to whom Receiving Party has disclosed any Confidential Information. Receiving Party shall give Disclosing Party all reasonable assistance in connection with any action, demand, claim or proceeding that Disclosing Party may institute against any such person in respect of such disclosure.

2.3 **Authorized Disclosure.** Each Party will restrict access to the other Party's Confidential Information to its employees and representatives, including without limitation its officers, directors, agents and advisors, and the employees and representatives of its Affiliates (the "Authorized Persons") that have a need to know such information for the Purpose. Each Party shall ensure that its Authorized Persons are notified of the obligations hereunder and are contractually or legally bound by confidentiality obligations that are at least as stringent to those obligations contained herein. Each Party shall be responsible and liable for any breach of this Agreement by its Authorized Persons.

As used herein, "Affiliate(s)" means any corporation, company, partnership, joint venture or other entity which controls, is controlled by, or is under common control with a Party. For purposes of this definition, "control" of an entity means the ownership, directly or indirectly, of more than fifty percent (50%) of the outstanding voting securities or capital stock of such entity, or the legal power to direct or cause the direction of the general management and policies of such entity. For purposes of this definition, Novo Holdings A/S and the Novo Nordisk Foundation and their affiliates (other than Novo Nordisk and its subsidiaries) are not considered Affiliates of Novo Nordisk.

2.4 **Exceptions.** The non-use and confidentiality obligations set forth in this Agreement will not apply to information that the Receiving Party can demonstrate by competent written records:

a) is at the time of disclosure already its the public domain;

b) hereafter legally and properly becomes part of the public domain through no breach of this Agreement;

c) was already in Receiving Party's or its Affiliate's possession prior to disclosure by Disclosing Party;

d) is lawfully disclosed by a third party to Receiving Party or its Affiliate, which information such third party did not acquire under an obligation of confidentiality;

e) is developed independently by Receiving Party or its Affiliate without use of or reliance on the Disclosing Party's Confidential Information.

Notwithstanding the foregoing, the Receiving Party may disclose the Disclosing Party's Confidential Information, without violating its obligations under this Agreement, to the extent the disclosure is required by law, regulation or by order of a competent government entity provided that Receiving Party will give Disclosing Party notice of such disclosure requirement with no undue delay allowing sufficient opportunity to object to such disclosure and seek protection or confidential treatment of such Confidential Information and if so requested by the Disclosing Party, the Receiving Party will cooperate with the Disclosing Party in such efforts. if, after providing such notice and assistance as required herein, the Receiving Party remains legally obligated to disclose any Confidential Information, the Receiving Party (or its Authorized Persons) shall disclose no more than that portion of the Confidential Information which, on the advice of the Receiving Party's legal counsel, the Receiving Party is legally required to disclose and, upon the Disclosing Party's request, shall use commercially reasonable efforts to obtain assurances from the applicable government entity that such Confidential Information will be afforded confidential treatment.

2.5 The Receiving Party acknowledges that its breach of any of its obligations under this Agreement would cause the Disclosing Party irreparable harm, for which monetary damages would be an inadequate remedy. Therefore, in the event of any such breach or threatened breach, the Disclosing Party shall be entitled, in addition to any other remedy available under this Agreement, at law or in equity, to injunctive relief, specific performance of the terms hereof and other equitable relief for such breach or the material anticipatory breach of this Agreement, without the posting of bond or other security.

3. TERM

3.1 This Agreement may be terminated by either Party by giving thirty (30) days' written notice to the other Party and, unless sooner terminated or otherwise extended by being incorporated into another agreement, it shall automatically terminate one (1) year from the Effective Date hereof. The terms and conditions of this Agreement shall survive any such termination or expiration with respect to Confidential Information that is disclosed prior to the effective date of termination or expiration until the fifth anniversary of the Effective Date, subject to the exceptions set forth in Clause 2.4.

4. MISCELLANEOUS

4.1 **No License.** Each Party understands and agrees that i) Confidential Information is and shall remain at all times the sole property of Disclosing Party and ii) Receiving Party shall not obtain any proprietary Interest or intellectual property rights, by license or otherwise, in any Confidential Information of the Disclosing Party. Nothing in this Agreement shall impose any obligation upon either Party to negotiate or consummate any transaction with the other Party, to continue discussions with the other Party, or to prevent either Party from pursuing similar discussions, negotiations and business relationships with third parties.

4.2 **Copies.** Upon termination or expiration of this Agreement, or upon a Party's earlier request, the Receiving Party shall return to Disclosing Party or destroy (and certify in writing the destruction of) all Confidential Information (including all copies, records and other embodiments thereof, in any medium) its the Receiving Party's possession, provided that Receiving Party may maintain one copy for Receiving Party's legal files for the sole purpose of monitoring compliance with its continuing obligations hereunder or as otherwise required by law. Receiving Party shall not be obligated to delete back-up copies of Confidential Information stored on computer drives that are backed up on a routine basis, which Confidential Information shall remain subject to the provisions of this Agreement.

4.3 **No Warranty.** Each Party acknowledges that the other Party's Confidential Information is provided "as is" and without any representation or warranty, express or implied, as to the accuracy or completeness of Confidential Information, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose, or any warranty that the use of Confidential Information will not infringe or violate any patent or other proprietary rights of any third party. Neither Disclosing Party nor any of its Authorized Persons shall have any liability to the Receiving Party or any of its Authorized Persons resulting from the Receiving Party's or its Authorized Persons' receipt or use of Confidential Information.

4.4 **Notice.** Any notice to be given hereunder by a Party to the other Party will be its writing addressed to the address set forth in the introductory paragraph above (unless either Party provides written notice of a different address), in the case of the Company to "Attn. CEO", and will be deemed given: (a) upon delivery if sent by a reputable overnight courier; or (b) three (3) days after deposit in the mail if sent by pre-paid, certified mall or return receipt requested mail.

4.5 **Assignment.** This Agreement shall not be assignable in whole or in part by a Party without the written consent of the other Party, except that a Party may assign this Agreement (with notice to the other Party) a) to an Affiliate without written consent and b) in the case of assignment by the Company, no such consent from Novo Nordisk in connection with a merger, consolidation or sale of substantially all of that portion of the business of Company to which this Agreement relates. A Party's rights and obligations under this Agreement will bind and inure to the benefit of their respective successors and permitted assigns.

4.6 **Entire Agreement.** This Agreement constitutes the entire Agreement between the Parties pertaining to the subject matter hereof, and it supersedes all prior and contemporaneous, discussions, understandings, negotiations and preliminary agreements, written or oral, of the Parties its connection with the subject matter hereof. If one or more of the provisions of this Agreement shall be found to be illegal or invalid, it shall not affect the legality or validity of any of the remaining provisions and the provision that is illegal or invalid shall be revised by the arbitration panel or court to the least amount to achieve as nearly as possible the same effect as was originally intended by the Parties.

4.7 **Amendment and Waiver.** No change, modification or termination of any terms, provisions, or conditions of this Agreement shall be valid or binding unless made in writing and signed by authorized representative of the Parties. The waiver from time to time by a Party of any of its rights or its failure to exercise any right or remedy shall not operate or be construed as a continuing waiver of same or of any other of such Party's rights or remedies provided in this Agreement.

4.8 **Disputes.** The Parties will use commercially reasonable efforts to settle all matters in dispute amicably. All disputes arising out of or its connection with this Agreement must be settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed its accordance with the said Rules. The Parties agree to keep confidential the existence of the arbitration, the arbitral proceedings, the submissions made by the Parties and the decisions made by the arbitral tribunal, including its awards, except as required by applicable law and to the extent not already in the public

domain. The arbitration shall take place in London, England and shall be conducted in the English language. The award of the arbitrators shall be final and binding on both Parties. The Parties bind themselves to carry out the awards of the arbitrators. Notwithstanding, without resorting to prior arbitration and in addition to any other remedies provided by law, either Party shall be entitled to seek temporary and permanent injunctive relief against any threatened or actual breach of this Agreement or the continuation of any such breach in any court of competent jurisdiction. Subject to the foregoing obligation to arbitrate, the Parties hereby submit to the exclusive jurisdiction of the courts located in London, England in all matters concerning this Agreement. The Parties hereby irrevocably and unconditionally consent to the exclusive jurisdiction of any such court and hereby irrevocably and unconditionally waive any defense of inconvenient forum to the maintenance of any action or proceeding in any such court, any objection to venue with respect to any such action or proceeding, and any right of jurisdiction on account of the place of residence or domicile of a Party.

4.9 **Governing Law.** This Agreement shall be construed and interpreted under the substantive laws of England & Wales, disregarding choice of law rules.

4.10 **Signing Authority.** Each Party warrants that it has the authority to enter into this Agreement.

4.11 **Counterparts.** This Agreement may be executed (including by use of industry standard signature software, such as DocuSign®) in one or more counterparts, each of which will be deemed to be an original, but all of which together will constitute one and the same Agreement. A facsimile copy or pdf file contained in an email of this Agreement including the signature pages hereto will be deemed to be an original.

SIGNED BY:

Date:	Date:14/08/2018
On behalf of Dicerna Pharmaceuticals, Inc.:	On behalf of Novo Nordisk A/S:
/s/ James B. Weissman	/s/ Miriam Frieden
Name: James B. Weissman	Name: Miriam Frieden
Title: Chief Business Officer	Title :Vice President, Search & Evaluation

APPENDIX 1

AMENDMENT

This Amendment shall become effective as of 14 August 2019 (the “Effective Date”).

With regard to the Mutual Confidentiality Agreement dated 14 August 2018 (collectively the “Agreement”)

By and between

Novo Nordisk A/S
Novo Allé
2880 Bagsværd
Denmark
CVR No. 24256790

(hereinafter referred to as “Novo Nordisk”)

And

Dicerna Pharmaceuticals, Inc.
87 Cambrigepark Drive
Cambrige, MA 02140
United States

(hereinafter referred to as “Company”)

Novo Nordisk and Company are hereinafter also referred to individually as “Party” and collectively as “Parties”.

WHEREAS the Parties wish to extend the term of the Agreement; and

WHEREAS pursuant to Clause 4.7 of the Agreement the Parties can amend the Agreement upon written mutual agreement; and

WHEREAS the Parties have agreed to execute this amendment (the “Amendment”);

Now, therefore, intending to be legally bound, the Parties agree as follows:

1. The Parties agree that the terms of this Amendment are intended to be supplemental to the terms of the Agreement. The terms of the Agreement remain in full force and effect and shall apply to the Amendment as well. To the extent the Agreement is explicitly amended by this Amendment, the terms of the Amendment will control where the terms of the Agreement are contrary to or conflict with the provisions of this Amendment.

2. The Agreement is hereby amended as follows:

Clause 3.1, first sentence is replaced in its entirety by the following:

"This Agreement may be terminated by either Party by giving thirty (30) days' written notice to the other Party and, unless sooner terminated or otherwise extended by being incorporated into another agreement, it shall automatically terminate two (2) years from the Effective Date hereof."

3. This Amendment shall be construed and interpreted pursuant to the laws stipulated in the Agreement.

4. All disputes arising out of or in connection with this Amendment shall be finally settled as stipulated in the Agreement.

By signing below, each Party acknowledges its acceptance of the above-described changes that are to be effective as of the Effective Date set forth at the beginning of the Amendment, and that will become an integral part of the Agreement. Further, each Party warrants that it has the authority to enter into this Amendment.

SIGNED BY:

Date: 12-Aug-2019
On behalf of Novo Nordisk A/S:

/s/ Søren Tullin
Name: Søren Tullin
Title: Corporate Vice President
Date:
On behalf of Novo Nordisk A/S:

Name:
Title:

Date:
On behalf of Dicerna Pharmaceuticals, Inc.:

/s/ Christo Shalish
Name: Christo Shalish
Title: V.P. Business Development
Date:
On behalf of Dicerna Pharmaceuticals, Inc.:

Name:
Title:

Dicerna™

CONFIDENTIAL DISCLOSURE AGREEMENT

THIS CONFIDENTIAL DISCLOSURE AGREEMENT (the "Agreement") is made as of the last dated signature below (the "Effective Date") by and between Dicerna Pharmaceuticals Inc., a Delaware corporation with a business address at 33 Hayden Avenue, Lexington, Massachusetts 02421 (Tel: 617-621-8097; Fax: 6l7-252-0976)("Dicerna"), and Novo Nordisk A/S, with a business address at Novo Alle I, 2880 Bagsvaerd, Denmark ("COMPANY") (each a "Party" and, collectively, the "Parties").

1. Background. Dicerna and Company intend to engage in communications and/or activities for the purpose summarized in Exhibit A. In the course of these communications and activities, Dicerna and COMPANY may disclose or deliver to each other certain Confidential Information (defined below). This Agreement will govern those disclosures and deliveries.

2. Definitions.

2.1 "Affiliate" means any person or entity that controls or is controlled by or is under common control with the Company and/or Dicerna, as the case may be. The term "control" shall mean the possession of at least fifty percent (50%) of the share capital or voting rights or of the power to influence and direct the policies and direction of the management and policies of an entity. Novo Holdings A/S, the Novo Nordisk Foundation, and Novozymes A/S and their respective Excluded Affiliates (other than Company and its subsidiaries) are not considered Affiliates of Company. "Excluded Affiliates" means with respect to Novo Holdings A/S, the Novo Nordisk Foundation, and Novozymes A/S and any person, corporation, company, partnership, joint venture or other entity, which controls, is controlled by, or is under common control with such entities.

2.2 "Confidential Information" means any scientific, technical, trade or business information including, without limitation, Research Materials (defined below), formulations, techniques, methodology, assay systems, formulae, protocols, SOPs, procedures, tests, equipment, data, reports, know-how, sources of supply, patent positioning, relationships with consultants and employees, pricing, business plans and business developments, information concerning the existence, scope or activities of any research, development, manufacturing, marketing or other projects of the Disclosing Party (e.g. plans, rational, competitive strategy or other information related to developing or marketing products or technology covered by Disclosing Party's patents, patent applications or published patent applications), and any other confidential information about or belonging to the Disclosing Party's suppliers, licensors, licensees, partners, affiliates, customers, potential customers or others"), whether disclosed orally or in writing, in graphic or electronic form and regardless of whether such information is designated as confidential at the time of its disclosure, that a reasonable person would believe to be confidential and/or proprietary based on the circumstances of its disclosure. This Agreement, the terms hereof and the fact that negotiations hereunder have taken place shall also be deemed Confidential Information.

2.3 Examples of Confidential Information. For purposes of illustration, the Confidential Information may be contained in various media, including, without

limitation, records of research data and observations, records and results of pre-clinical and clinical trials, patent applications, scientific manuscripts, posters or abstracts not yet published, regulatory filings, tests, test results, computer programs, manuals, plans, drawings, designs, specifications, supply and customer lists, internal financial data and other documents and records of the Disclosing Party, whether or not labeled or identified as "Confidential."

2.4 Exceptions. "Confidential Information" does not include information that: (a) was known to the Receiving Party at the time it was disclosed, other than by previous disclosure by the Disclosing Party, as evidenced by the Receiving Party's written records at the time of disclosure; (b) is at the time of disclosure or later becomes publicly known under circumstances involving no breach of this Agreement; (c) is lawfully and in good faith made available to the Receiving Party by a third party who did not derive it, directly or indirectly, from the Disclosing Party; (d) is independently developed by the Receiving Party without the use of the Disclosing Party's Confidential Information; or (e) is approved for disclosure by prior written consent of the Disclosing Party.

2.5 "Research Materials" include, without limitation, genes, RNA sequences, DNA sequences, modified nucleic acid sequences, plasmids, vectors, clinical results, cells, cell lines, animal data, toxicology data, antibodies, biological substances, and any constituents, conjugates, derivatives, chemically modified versions thereof or replications thereof or therefrom, together with all reagents, chemical compounds or other materials.

2.6 "Disclosing Party" means the Party disclosing its Confidential Information.

2.7 "Receiving Party" means the Party to whom Confidential Information is disclosed.

2.8 "Party" shall mean Dicerna or COMPANY.

3. Confidentiality.

3.1 Acknowledgment Regarding Ownership. Dicerna and COMPANY each acknowledge that the other is and shall always remain the sole owner of its Confidential Information.

3.2 Nondisclosure of Confidential Information. Receiving Party agrees to treat Confidential Information as confidential and the exclusive property of the Disclosing Party. Receiving Party shall not directly or indirectly publish, disseminate or otherwise disclose, deliver or make available to any person outside its organization any of the Disclosing Party's Confidential Information. Receiving Party may disclose the Disclosing Party's Confidential Information to persons within their respective organizations and to their respective Affiliates who/which have a need to receive such Confidential Information in order to further the purposes of this Agreement and who/which are bound to protect the confidentiality of such Confidential Information, as set forth in Section 3.5 below. Receiving Party may disclose the Disclosing Party's Confidential Information to a governmental authority or by order of a court of competent jurisdiction, provided that such disclosure is subject to all applicable governmental or judicial protection available for like material and, to the extent practicable and permitted by applicable law, reasonable advance notice is given to the Disclosing Party.

3.3 Use of Confidential Information. Receiving Party shall use the Disclosing Party's Confidential Information solely for the purpose(s) set forth in **Exhibit A** or for such other purposes as may be agreed upon by the Parties in writing. The Receiving Party will not reverse-engineer, disassemble, re-assemble or decompile any sample, product, tangible specimen, or software provided to it by the Disclosing Party.

3.4 Physical Protection of Confidential Information. Receiving Party shall exercise all commercially reasonable precautions to physically protect the integrity and confidentiality of the Disclosing Party's Confidential Information using the same degree of care that it uses to protect the confidentiality of its own Confidential Information (but in no event less than reasonable care agree to treat Confidential Information as confidential). The Receiving Party shall promptly notify the Disclosing Party upon discovery of any unauthorized use or disclosure of Confidential Information and will assist the Disclosing Party in regaining possession of such Confidential Information and preventing further unauthorized use or disclosure.

Agreements with Personnel and Affiliates. Receiving Party shall ensure that its authorized persons (third parties) who are permitted access to the Disclosing Party's Confidential Information under this Agreement are notified of the obligations hereunder and are contractually or legally bound by comparable confidentiality and non-use obligations as those set forth in this Agreement on such authorized persons (third parties). Each Party shall be responsible for any breach of this Agreement by its authorized persons.

4. Expiration; Termination.

4.1 Expiration; Return of Research Materials and Confidential Information. This Agreement will expire one (1) years from the Effective Date of this Agreement ("Term"). Upon expiration, or sooner the Disclosing Party's request, the Receiving Party shall promptly return to the Disclosing Party all Research Materials and Confidential Information, with the exception that the Receiving Party may retain one copy of the Confidential Information for archival purposes and any electronic backup copies maintained in the ordinary course of business, all of which shall remain subject to the confidentiality obligations hereunder. Upon expiration, the obligations for confidentiality under this Agreement shall expire seven (7) years from the termination hereof, unless otherwise changed or modified in writing by the Parties.

4.2 Termination for Breach. Prior to expiration, however, either Party may terminate this Agreement immediately upon written notice to the other Party if it determines that the other Party has breached its confidentiality obligations. In this event, the Party in breach shall promptly return to the other, all Confidential Information and its confidentiality obligations will continue indefinitely.

5. Representations and Warranty.

5.1 Warranties by Each Party. Disclosing Party warrants and represents to the Receiving Party that: (a) with regard to the Confidential Information disclosed under this Agreement that it has the right to disclose this information, whether considered Confidential Information or not, to the Disclosing Party for purposes of this Agreement.

6. Miscellaneous.

6.1 Remedies. Confidential Information is a unique and valuable asset of its Disclosing Party and that Disclosing Party may be irreparably damaged if the Receiving Party breaches this Agreement. If the Receiving Party disseminates, publishes or discloses to any third party or uses in any other manner not permitted in this Agreement, any Confidential Information in breach of this Agreement, or threatens or appears to be preparing to do so, in addition to any other remedy to which the Disclosing Party may be entitled, the Disclosing Party shall be entitled to seek an injunction restraining the Receiving Party from breaching or further breaching this Agreement and compensation for damages.

6.2 Entire Agreement. This Agreement constitutes the entire agreement of the Parties with regard to its subject matter summarized in **Exhibit A,** and supersedes all previous written or oral representations, agreements and understandings between Dicerna and COMPANY.

6.3 Intellectual Property Ownership. The Receiving Party acknowledges and agrees that the Disclosing Party reserves all patent, patent applications, know-how, technology, inventions, copyrights, trademarks, trade secret information or other intellectual property rights in and to any Confidential Information covered by this Agreement and provided to the other Party. Notwithstanding anything to the contrary herein, this Agreement shall not constitute a license, assignment, or any other rights expressed or implied under any patent nor shall it constitute an option or other right to any such patent license.

6.4 Publicity/Advertising. Neither Party shall use the name of the other Party in any publicity, advertising or information disseminated to the general public without the prior written approval of the other Party.

6.5 Government Compliance. Both Parties represent that they shall conduct any tests or evaluations done for the purposes of this Agreement in compliance with all applicable federal, state and local laws, regulations and guidelines including, but not limited to all safety and environmental standards and requirements. Both Parties shall observe safe and diligent handling procedures during the any such tests or evaluations.

6.6 Commercial Use. The Receiving Party further agrees that it will not make any commercial use, in whole or in part of such Confidential Information, without the Disclosing Party's prior written consent.

6.7 Advice of Counsel. Each Party acknowledges and agrees that this Agreement shall not be deemed to have been drafted by one party or another and shall be construed accordingly. The Parties have reviewed this Agreement in its entirety and acknowledge

that each has had a full opportunity to negotiate its terms. This Agreement and all provisions hereof shall in all cases be construed, according to the fair meaning of the language used.

6.8 Severability. If one or more of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Agreement, and all other provisions shall remain in full force and effect. If any provision of this Agreement is held to be excessively broad, it shall be reformed and construed by limiting and reducing it so as to be enforceable to the maximum extent permitted by law.

6.9 Alternative Dispute Resolution. Any dispute arriving between the Parties under this Agreement shall be resolved by arbitration under the rules of the by the International Chamber of Commerce ("ICC") administered in accordance with Rules of ICC. The place of arbitration shall be New York, New York, and all proceedings and communications shall be in English.

6.10 Applicable Law. This Agreement shall in all events and for all purposes be governed by, and construed in accordance with, the laws of the State of New York without giving effect to the choice of laws principles thereof.

6.11 Notices. Any notice required or permitted under this Agreement shall be sufficient if in writing and delivered personally or sent by registered or certified mail, if to Dicerna at:

Dicerna Pharmaceuticals Inc.
33 Hayden Avenue
Lexington, Massachusetts 02421
Attn: Legal Department

or if to Novo Nordisk A/S, at:

Novo Nordisk A/S
Novo Alle 1
2880 Bagsvaerd
Denmark
Attention: CVP of Global Business Development

with a copy to:

Novo Nordisk A/S
Novo Alle 1
2880 Bagsvaerd
Denmark
Attention: General Counsel

6.12 Third-Party Beneficiary. Except as specifically set forth herein, this Agreement is solely for the benefit of the Parties and their respective successors and permitted assigns, and no other person or entity has any right, benefit, priority or interest under or because of the existence of this Agreement.

6.13 Force Majeure. Neither Party shall be held liable or responsible to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any provision of this Agreement when such failure or delay is caused by or results from causes, beyond the reasonable control of the affected Party, including but not limited to fire, floods, embargoes, war, acts of war (whether war is declared or not), insurrections, riots, terrorist acts, civil commotions, strikes, lockouts or other labor disturbances, acts of God or acts, omissions or delays in acting by any court or governmental authority.

6.14 Schedules & **Exhibits.** All schedules and exhibits referred to in this Agreement are incorporated herein by reference and form an integral part of this Agreement.

6.15. Counterparts & **Electronic Signatures.** This Agreement may be executed in one or more counterparts, each of which will be deemed an original, and all of which together will be deemed to be one and the same instrument. A facsimile or other electronically transmitted copy of this Agreement, including the signature pages, will be deemed an original. The Parties to this document also agree that a copy of the original signature (including an electronic copy) may be used for any and all purposes for which the original signature may have been used. The Parties further waive any right to challenge the admissibility or authenticity of this document in a court of law based solely on the absence of an original signature.

6.16 IP Disclosure Notification. The disclosure of any information, data or results hereunder will not be considered a "publication" thereof for patent or copyright purposes, nor will it constitute release of said information, data or results into the public domain. Nothing herein shall be construed as preventing a Party from itself using in any manner or disclosing to third parties any and all its own information and/or as a commitment of either Party to enter into any further agreement and/or any business arrangement with the other Party.

6.17 Anti-Corruption. Each Party agrees, on behalf of itself and any Affiliates to comply with the U.S. Foreign Corrupt Practices Act of 1977, the UK Bribery Act of 2010 and/or any applicable laws relating to anti-corruption, anti-kickbacks and anti-money laundering. The Parties also agree that neither shall make any facilitating payments with regards to the work outlined herein.

6.18 Securities Laws. Each Party acknowledges that the shares of the other Party are publicly listed and that, as a result, any information pertaining to either Party, its Affiliates or their respective businesses and/or projects may potentially constitute privileged and/or price sensitive information concerning such Party within the meaning of applicable securities laws. Therefore, each Party undertakes to comply, and to cause its (and its Affiliates') directors, employees, officers, advisors, consultants and agents to comply, with all applicable securities laws (in particular, without limitation however, any insider trading rules) regarding information disclosed to it from either Party.

6.19 Binding Effect & No Assignment. This Agreement is binding upon and will inure to the benefit of the Parties and their respective heirs, successors and permitted assigns. This Agreement may not be superseded, transferred, assigned, amended or modified except by written agreement between the Parties; provided however, that a Party may assign this Agreement to an Affiliate without written consent and that either Party may, without such consent, assign its rights and obligations under this Agreement to an unrelated third party in connection with a merger, acquisition, consolidation or sale of substantially all of the business to which this Agreement relates.

IN WITNESS WHEREOF, duly authorized representatives of Dicerna and COMPANY have signed this Agreement as a document under seal as of the Effective Date, whereupon this shall become a binding agreement between the Parties, subject to the laws and the jurisdiction of the Commonwealth of Massachusetts. Each individual signing on behalf of a corporate entity hereby personally represents and warrants his or her legal authority to legally bind that entity.

DICERNA PHARMACEUTICALS, INC.		**NOVO NORDISK A/S**	
By:	/s/ Christo Shalish	By:	/s/ Karin Conde-Knape
Name:	Christo Shalish	Name:	Karin Conde-Knape
Title:	VP, Business Development	Title:	SVP Global Drug Discovery
Date:	3/4/2021	Date:	3/9/2021
Duly Authorized		Duly Authorized	

Dicerna™

Exhibit A

Summary of Subject and Purposes of Communications

The purpose of communication is to discuss general matters relating to each other's business and technology. The discussions will include Dicerna platform RNAi technology and biosynthetic production capabilities. Company will discuss its products and their strategies for improving the products that Dicerna can produce.

Discussion will include extrahepatic targets and GalXC-Plus platform.

COMPANY may disclose confidential information relating to its development, analytical and production capabilities.