

NRX Pharmaceuticals, Inc.

2,935,818 Shares of Common Stock 2,863,637 Shares of Common Stock Issuable Upon Exercise of Investment Options

This prospectus supplement is being filed to update and supplement the information contained in the prospectus, dated September 15, 2021 (the "*Prospectus*"), related to the resale, from time to time, of up to 2,927,273 shares of common stock, par value \$0.001 per share (the "*Common Stock*"), of NRX Pharmaceuticals, Inc. ("*NRx*") by the selling securityholders (including their pledgees, donees, transferees or other successors-in-interest) and 8,545 shares of Common Stock by certain service providers (including their pledgees, donees, transferees or other successors-in-interest) identified in the Prospectus and the issuance by NRx of up to 2,863,637 shares of Common Stock upon the exercise of investment options, with the information contained in NRx's Current Report on Form 8-K, which was filed with the Securities and Exchange Commission (the "*SEC*") on February 3, 2022 (the "*Current Report*"). Accordingly, NRx has attached the Current Report to this prospectus supplement.

This prospectus supplement updates and supplements the information in the Prospectus and is not complete without, and may not be delivered or utilized except in combination with, the Prospectus, including any amendments or supplements thereto. This prospectus supplement should be read in conjunction with the Prospectus and, if there is any inconsistency between the information in the Prospectus and this prospectus supplement, you should rely on the information in this prospectus supplement.

The Common Stock is listed on the Nasdaq Global Market ("*Nasdaq*") under the symbol "NRXP" and NRx's warrants are listed on Nasdaq under the symbol "NRXPW". On March 2, 2022, the closing sale price of the Common Stock as reported on Nasdaq was \$2.885, and the closing sale price of NRx's warrants as reported on Nasdaq was \$1.28.

Explanatory Note

This supplement No. 5 to the prospectus dated September 15, 2021 is being filed to correct an error in connection with the content of the prior supplement No. 4, which should be disregarded.

NRx is an "emerging growth company" under the federal securities laws and, as such, has elected to comply with certain reduced public company disclosure requirements. See "Prospectus Summary—Implications of Being an Emerging Growth Company" beginning on page 2 of the Prospectus and in any applicable prospectus supplement.

NRx's business and investment in the Common Stock involve significant risks. These risks are described in the section titled "Risk Factors" beginning on page 5 of the Prospectus and in any applicable prospectus supplement.

Neither the SEC nor any state securities commission has approved or disapproved of the securities to be issued or sold under the Prospectus or passed upon the accuracy or adequacy of the Prospectus or this prospectus supplement. Any representation to the contrary is a criminal offense.

The date of this prospectus is March 3, 2022.

Item 1.01 Entry into a Material Definitive Agreement.

On February 2, 2022, NRX Pharmaceuticals, Inc. (the “*Company*”) consummated the closing of a private placement (the “*Private Placement*”), pursuant to the terms and conditions of the Securities Purchase Agreement, dated as of January 30, 2022 (the “*Purchase Agreement*”), by and among the Company and certain purchasers named on the signature pages thereto (the “*Purchasers*”). At the closing of the Private Placement, the Company issued 7,824,727 shares of common stock and preferred investment options (the “*Investment Options*”, and, collectively with the shares of common stock issued under the Private Placement, the “*Securities*”) to purchase up to an aggregate of 7,824,727 shares of common stock, each for a purchase price of \$3.195. The aggregate gross proceeds to the Company from the Private Placement were approximately \$25.0 million, before deducting placement agent fees and other offering expenses. H.C. Wainwright & Co., LLC (the “*Placement Agent*”) acted as the exclusive placement agent for the Private Placement.

Securities Purchase Agreement

The Purchase Agreement contains customary representations, warranties, and covenants of the Company and Purchasers and customary closing conditions, indemnification rights, and other obligations of the parties. Under the Purchase Agreement, the Company agreed to use the net proceeds from the sale of the Securities for working capital purposes and to not use such proceeds: (a) for the satisfaction of any portion of the Company’s debt (other than payment of trade payables in the ordinary course of the Company’s business and prior practices), (b) for the redemption of any common stock or Common Stock Equivalents (as defined in the Purchase Agreement), (c) for the settlement of any outstanding litigation, or (d) in violation of the Foreign Corrupt Practices Act of 1977, as amended, or the regulations promulgated by the Office of Foreign Assets Control of the U.S. Treasury Department. The Purchase Agreement is governed by the laws of the State of New York.

The foregoing summary of the Purchase Agreement is qualified in its entirety by reference to the form of Purchase Agreement, which is filed herewith as Exhibit 10.1 and is incorporated by reference herein.

Preferred Investment Options

Under the Preferred Investment Option, dated as of February 2, 2022, between the Company and the undersigned holders thereto (the “*Preferred Investment Option*”), the Investment Options are exercisable at any time on or after August 2, 2022 for an exercise price of \$3.07 per share of common stock of the Company, subject to certain adjustments, including with respect to stock dividends, splits, subsequent rights offerings and a Fundamental Transaction (as defined in the Preferred Investment Option). If, at any time at the time of exercise of the Investment Options, there is no effective registration statement registering, or the prospectus contained therein is not available for the resale of the shares issuable pursuant to the exercise of Investment Options, the Investment Options may be exercised by means of a cashless exercise, in which the holder is entitled to receive a number of shares of common stock to be determined by a formula contained in the Preferred Investment Option. No fractional shares or scrip representing fractional shares may be issued upon the exercise of the Investment Options.

The foregoing summary of the Preferred Investment Options is qualified in its entirety by reference to the Preferred Investment Options, which is filed herewith as Exhibit 10.2 and is incorporated by reference herein.

Registration Rights Agreement

In connection with the Private Placement, the Company entered into a Registration Rights Agreement with the Purchasers, dated as of January 30, 2022 (the “*Registration Rights Agreement*”). The Registration Rights Agreement provides that the Company shall file a registration statement covering the resale of all of the Registrable Securities (as defined in the Registration Rights Agreement) with the Securities and Exchange Commission (the “*SEC*”) and have the registration statement declared effective by the SEC as promptly as possible after the filing thereof, but in any event no later than the 30th calendar day with following the date of the Registration Rights Agreement.

Upon the occurrence of any Event (as defined in the Registration Rights Agreement), which, among others, prohibits the Purchasers from reselling the Securities for more than ten (10) consecutive calendar days or more than an aggregate of fifteen (15) calendar days during any 12-month period, the Company is obligated to pay to each Purchaser, on each monthly anniversary of each such Event, an amount in cash, as partial liquidated damages and not as a penalty, equal to the product of 2.0% multiplied by the aggregate subscription amount paid by such Purchaser pursuant to the Purchase Agreement. The maximum aggregate liquidated damages payable to a Purchaser under the Registration Rights Agreement is 18.0% of the aggregate subscription amount paid by such Purchaser.

Subject to certain exceptions, neither the Company nor any of its security holders (other than the Purchasers in such capacity pursuant thereto) may include the securities of the Company in any registration statements other than the Securities. The Company may not file any other registration statements until all Securities are registered pursuant to a registration statement that is declared effective by the SEC, provided that the Company may file amendments to registration statements filed prior to the date of the Registration Rights Agreement so long as no new securities are registered on any such existing registration statements.

All fees and expenses incident to the performance of or compliance with, the Registration Rights Agreement by the Company will be borne by the Company, whether or not any Securities are sold pursuant to a registration statement.

The foregoing summary of the Registration Rights Agreement is qualified in its entirety by reference to the form of Registration Rights Agreement, which is filed herewith as Exhibit 10.3 and is incorporated by reference herein.

The Private Placement

The Securities have not been registered for sale under the Securities Act of 1933, as amended (the “*Securities Act*”), and may not be offered or sold in the United States absent registration under the Securities Act or an applicable exemption from the registration requirements. The issuance and sale of the Securities are made in reliance upon the exemption provided in Section 4(a)(2) of the Securities Act and Rule 506 promulgated thereunder. No form of general solicitation or general advertising was conducted in connection with the issuance. The Securities contain (or will contain, where applicable) restrictive legends preventing the sale, transfer, or other disposition of such securities, unless registered under the Securities Act, or pursuant to an exemption therefrom. The disclosure contained in this Current Report on Form 8-K does not constitute an offer to sell or a solicitation of an offer to buy any securities of the Company, and is made only as required under applicable rules for filing current reports with the SEC.

Each Purchaser in the Private Placement was required to represent that, at the time of the applicable closing, it was an accredited investor as defined in Rule 501(a) under the Securities Act or a qualified institutional buyer as defined in Rule 144A(a) under the Securities Act.

Item 3.02 Unregistered Sales of Equity Securities

Under the Placement Agent Preferred Investment Option, dated as of February 2, 2022, between the Company and H.C. Wainwright & Co., LLC, (the “*Placement Agent Preferred Investment Option*”), the Company granted Investment Options that are exercisable at any time on or after August 2, 2022 to purchase up to an aggregate of 391,236 shares of common stock at an exercise price of \$3.99375 per share of common stock of the Company, subject to certain adjustments, including with respect to stock dividends, splits, subsequent rights offerings and a Fundamental Transaction (as defined in the Preferred Investment Option). The Placement Agent Preferred Investment Option was granted by the Company as a part of the compensation for services by H.C. Wainwright & Co., LLC in connection with the Private Placement. If, at any time at the time of exercise of the Placement Agent Preferred Investment Option, there is no effective registration statement registering, or the prospectus contained therein is not available for the resale of the shares issuable pursuant to the exercise of the Placement Agent Investment Option, the Placement Agent Investment Option may be exercised by means of a cashless exercise, in which the holder is entitled to receive a number of shares of common stock to be determined by a formula contained in the Placement Agent Preferred Investment Option. No fractional shares or scrip representing fractional shares may be issued upon the exercise of the the Placement Agent Investment Option.

The foregoing summary of the Placement Agent Preferred Investment Options is qualified in its entirety by reference to the form of Placement Agent Preferred Investment Option, which is filed herewith as Exhibit 10.4 and is incorporated by reference herein.

Item 8.01 Other Events.

On February 2, 2022, the Company issued a press release announcing the closing of the Private Placement. A copy of the press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
10.1	Form of Securities Purchase Agreement, dated as of January 30, 2022, by and among the Company and the Purchasers.
10.2	Form of Preferred Investment Options, dated as of February 2, 2022, by and among the Company and the holders.
10.3	Form of Registration Rights Agreement, dated as of January 30, 2022, by and among the Company and the Purchasers.
10.4	Form of Placement Agent Preferred Investment Option, dated as of February 2, 2022 by and among the Company and H.C. Wainwright & Co., LLC.
99.1	Press release, dated February 2, 2022.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

SIGNATURE

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

NRX PHARMACEUTICALS, INC.

Date: February 2, 2022

By: /s/ Alessandra Daigneault
Name: Alessandra Daigneault
Title: General Counsel and Corporate Secretary
