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

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of February 2023

Commission File Number: 001-39458

Medicenna Therapeutics Corp. (Translation of registrant's name into English)

2 Bloor St. W., 7th Floor Toronto, Ontario M4W 3E2, Canada (Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F. Form 20-F [X] Form 40-F []

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): []

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): []

SIGNATURES

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

MEDICENNA THERAPEUTICS CORP.

Date: February 17, 2023 By: <u>/s/ Elizabeth Williams</u>

/s/ Elizabeth Williams
Name: Elizabeth Williams
Title: Chief Financial Officer

EXHIBIT INDEX

Exhibit Number Description

99.1 Press Release dated February 17, 2023

Medicenna Establishes At-the-Market Sales Facility

TORONTO and HOUSTON, Feb. 17, 2023 (GLOBE NEWSWIRE) -- Medicenna Therapeutics Corp. ("Medicenna" or the "Company") (NASDAQ: MDNA, TSX: MDNA), a clinical stage immuno-oncology company, announced today that it has entered into a sales agreement with Oppenheimer & Co. Inc. ("Oppenheimer & Co.") acting as sales agent (the "Sales Agreement"), pursuant to which the Company may, from time to time, sell through "at-the-market" offerings on the Nasdaq Capital Market (the "Nasdaq") such number of common shares that would have an aggregate offering price of up to US\$10 million (the "ATM Offering") under the ATM Prospectus Supplement (as defined below). Medicenna will determine, at its sole discretion, the time, minimum price and maximum number of common shares to be sold under the ATM Offering.

Oppenheimer & Co., at Medicenna's discretion and instruction, will use its commercially reasonable efforts to sell the common shares at prevailing market prices from time to time. No offers or sales of common shares will be made in Canada or through the facilities of the Toronto Stock Exchange (the "TSX"). The ATM Offering will be made by way of a prospectus supplement (the "ATM Prospectus Supplement") to the Company's United States final base shelf prospectus which is contained in the Company's U.S. registration statement on Form F-3 (File No. 333-269868), dated February 17, 2023 (the "Registration Statement").

The Registration Statement and a preliminary ATM Prospectus Supplement have been filed in the United States with the U.S. Securities and Exchange Commission ("SEC"). The TSX has conditionally approved the ATM Offering and the Nasdaq has been notified of the ATM Offering.

The Company plans to use the net proceeds of the ATM Offering, if any, for general corporate purposes including, but not limited to, working capital expenditures, research and development expenditures, and clinical trial expenditures.

The ATM Offering will terminate upon the earlier of the sale of US\$10 million of common shares subject to the Sales Agreement or the termination of the Sales Agreement, as permitted therein.

The Registration Statement relating to these securities has been filed with the SEC but has not yet become effective. These securities may not be sold nor may offers to buy be accepted prior to the time the Registration Statement becomes effective. Copies of the preliminary ATM Prospectus Supplement may be requested by contacting Oppenheimer & Co. Inc., Attention: Syndicate Prospectus Department, 85 Broad Street, 26th Floor, New York, New York 10004, by telephone at 212-667-8055, or by email at EquityProspectus@opco.com. The preliminary ATM Prospectus Supplement (together with the related base shelf prospectus) is also available on the SEC's website (www.sec.gov). Before you invest, you should read the preliminary ATM Prospectus Supplement and the related base shelf prospectus and other documents that the Company has filed with the SEC for more complete information about the Company, the sales agreement and the ATM Offering.

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

About Medicenna

Medicenna is a clinical stage immunotherapy company focused on the development of novel, highly selective versions of IL-2, IL-4 and IL-13 Superkines and first in class Empowered Superkines. Medicenna's long-acting IL-2 Superkine, MDNA11, is a next-generation IL-2 with superior CD122 (IL-2 receptor beta) binding without CD25 (IL-2 receptor alpha) affinity thereby preferentially stimulating cancer killing effector T cells and NK cells. Medicenna's early-stage BiSKITs™ program, (Bifunctional SuperKine ImmunoTherapies) is designed to enhance the ability of Superkines to treat immunologically "cold" tumors. Medicenna's IL-4 Empowered Superkine, bizaxofusp (formerly MDNA55), has been studied in 5 clinical trials including a Phase 2b trial for recurrent GBM, the most common and uniformly fatal form of brain cancer. Bizaxofusp has obtained FastTrack and Orphan Drug status from the FDA and FDA/EMA, respectively.

Forward Looking Statements

This news release contains forward-looking statements within the meaning of applicable securities laws that relate to the future operations of the Company, plans and projections and other statements that are not historical facts including, but not limited to, statements related to the possible sale of common shares, the anticipated use of proceeds from the sale of common shares and the future plans and objectives of the Company. Forward-looking statements are often identified by terms such as "will", "may", "should", "anticipate", "expect", "believe", "seek", "potentially" and similar expressions and are subject to risks and uncertainties. There can be no assurance that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. Important factors that could cause actual results to differ materially from the Company's expectations include, but are not limited to, the Company's ability to sell common shares under the ATM Offering, the Company's ability to access capital generally, as well as the risks detailed in the latest Annual Information Form and Annual Report on Form 20-F of the Company and in other filings made by the Company with the applicable securities regulators from time to time in Canada and the United States.

The reader is cautioned that assumptions used in the preparation of any forward-looking information may prove to be incorrect. Events or circumstances may cause actual results to differ materially from those predicted, as a result of numerous known and unknown risks, uncertainties, and other factors, many of which are beyond the control of the Company. The reader is cautioned

not to place undue reliance on any forward-looking information. Such information, although considered reasonable by management, may prove to be incorrect and actual results may differ materially from those anticipated. Forward-looking statements contained in this news release are expressly qualified by this cautionary statement. The forward-looking statements contained in this news release are made as of the date hereof and except as required by law, we do not intend and do not assume any obligation to update or revise publicly any of the included forward-looking statements.

Further Information

For further information about the Company please contact:

Elizabeth Williams, Chief Financial Officer, 416-648-5555, ewilliams@medicenna.com

Investor Contact

For more investor information, please contact:

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