Medicenna Presents Preclinical IL-13 Superkine Data at the AACR Annual Meeting

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-- IL-13 Superkines provide a versatile strategy for targeted delivery of anti-cancer agents to IL-13Rα2, which is overexpressed in many solid tumors but minimally expressed in normal tissues

-- MDNA132 and MDNA213 are novel IL-13 Superkines that are highly specific and preferentially accumulate in the microenvironment of IL-13Rα2-expressing tumors

--IL-13 Empowered Superkines™ act synergistically in combination with IL-2 Superkines in aggressive models of immunologically "cold" tumors

TORONTO and HOUSTON, April 17, 2023 (GLOBE NEWSWIRE) -- Medicenna Therapeutics Corp. ("Medicenna" or "the Company") (NASDAQ: MDNA TSX: MDNA), a clinical stage immunotherapy company, today announced that new preclinical data characterizing the Interleukin 13 (IL-13) Superkines, MDNA132 and MDNA213, and a series of next generation IL-13 Superkine therapies, were presented at the 2023 Annual Meeting of the American Association for Cancer Research (AACR), which is taking place at the Orange County Convention Center in Orlando, Florida from April 14 - 19, 2023.

"Our IL-13 Superkines have been engineered to target the IL-13 decoy receptor, IL-13Rα2, which is overexpressed in several solid tumors but minimally expressed in normal tissues, making it an attractive target for immunotherapies," said Fahar Merchant, Ph.D., President and CEO of Medicenna. "Tumors that express high levels of IL-13Rα2 are known to be aggressive, resulting in poor survival outcomes for cancer patients. The data presented at AACR demonstrates the ability of our IL-13 Superkines to preferentially accumulate in the microenvironment of IL-13Rα2-expressing tumors, enabling development of first-in-class precision immunotherapies that can selectively deliver a variety of therapeutic payloads. These IL-13 Superkine fusions are designed to address unmet needs for cancer patients with tumors that do not respond to blockbuster immunotherapies."

The AACR poster includes data demonstrating that both MDNA132 and MDNA213 exhibit highly selective binding to the IL-13 decoy receptor (IL-13Rα2) and, in a murine model, selectively accumulate in the tumor microenvironment (TME) for several days. The presentation also characterizes a series of next generation IL-13 Superkines, which are described below:

Anti-mCD3-MDNA132: A first-in-class **I**L-13 directed **C**ell **E**ngager (ICE – Making Cold Tumors Hot™) comprised of MDNA132 fused to an anti-CD3 antibody. *In vitro* data demonstrate the molecule retains strong binding affinity to both IL-13Rα2, expressed on tumors, and CD3, expressed by cancer fighting immune cells. The ICE™ platform is designed to overcome cancer cells' immune escape by recruiting the patients' own immune cells to directly target immunologically "cold" tumors.

MDNA19-MDNA213: A first-in-class BiSKIT™ (**Bi**functional **S**uper**K**ines for **I**mmuno**T**herapy) comprised of MDNA213 fused to MDNA19, the Fc version of our IL-2 Superkine MDNA11. *In vitro* data demonstrate that the BiSKIT retains strong binding affinity and selectivity to both the IL-13Rα2 and CD122 (IL-2Rβ) receptors and stimulates cancer killing effector T cells and NK cells without stimulating cells associated with toxicity or pro-tumor immune suppression. This BiSKIT enables localization and retention of our IL-2 Superkines in the TME.

Anti-mPD1-MDNA213: A first-in-class BiSKIT comprised of MDNA213 fused to an anti-PD1 checkpoint inhibitor. *In vitro* data demonstrate that this BiSKIT retains strong binding affinity for both IL-13Rα2 and PD1, effectively blocks the PD1/PD-L1 interaction with similar potency as the native anti-PD1 antibody, allowing its activity to be localized in the TME.

MDNA213-PE: A novel Empowered Superkine™ comprised of MDNA213 fused to the PE cytotoxin.*In vitro* data demonstrate that this molecule exhibits selective and potent cytotoxic activity towards human and murine cancer cells that express IL-13Rα2. Additionally, in a murine, checkpoint inhibitor-refractory, triple-negative breast cancer model, MDNA213-PE inhibited tumor growth as a single agent and synergized with an IL-2 Superkine (MDNA19) to significantly enhance therapeutic efficacy.

The poster, "Characterization of MDNA132, an IL-13 Decoy Receptor Selective Superkine for Targeted Delivery of Immunotherapies to the Tumor Microenvironment," can be found on the AACR website for conference registrants. It will be available on the Events and Presentations page of Medicenna's website following the conclusion of the meeting.

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, including statements on the development and potential of the Company's IL-13 Superkines. 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 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

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