Medicenna Presents Preclinical Data on MDNA113, its Targeted Metalloprotease Activated SuperKine (T-MASK) at the 38th Annual Meeting of the Society for Immunotherapy of Cancer (SITC)

November 3, 2023

Company's T-MASK platform demonstrates ability to maximize anti-tumor efficacy and minimize systemic toxicity, and opportunities to explore broad range of cytokines and other potent therapeutics

MDNA113 is a first-in-class IL-13Rα2 targeted therapy that delivers a masked bi-specific IL-2-AntiPD1 Superkine to the tumor micro-environment where it is activated by cancer specific enzymes

IL-13Rα2 is overexpressed by some of the most immunologically "cold" tumors with high unmet needs in pancreatic, liver, brain, breast and prostate cancer that annually affect over 2 million patients

TORONTO and HOUSTON, Nov. 03, 2023 (GLOBE NEWSWIRE) -- Medicenna Therapeutics Corp. ("Medicenna" or the "Company") (TSX: MDNA), a clinical-stage immunotherapy company focused on the development of Superkines, today announced new preclinical data demonstrating proof of concept for the Company's novel T-MASK (Targeted Metallo/protease Activated SuperKine) platform technology with the Company's development candidate, MDNA113, at the 38th Annual Meeting of the Society for Immunotherapy of Cancer ("SITC") held in San Diego, CA, from November 1-5, 2023.

"We are pleased to show preclinical data demonstrating the ability of our T-MASK platform to enhance tumor specific accumulation, increased anti-tumor activity while improving the safety profile of potent immune modulators such as Medicenna's bispecific IL-2-AntiPD1 Superkine," said Fahar Merchant, Ph.D., President and Chief Executive Officer of Medicenna. "The results presented today demonstrates proof of concept with MDNA113, our first T-MASK candidate specifically designed to deliver bispecific IL-2-antiPD1 Superkine to cancers that express the tumor associate antigen, IL-13Rα2. This is an important advance for cancer immunotherapy as the IL13Ra2 target is linked to aggressive cancers that annually affect over 2 million patients world-wide."

The Company selected MDNA113, a novel, first-in-class tumor-targeted and tumor-activated bi-specific antiPD1-IL-2 Superkine as its first development candidate using the T-MASK platform. MDNA113 has high selectivity and affinity for the IL-13 decoy receptor IL-13Rα2, a tumor associated antigen expressed by many aggressive solid tumors. MDNA113 is fused via a protease sensitive linker ("PSL") to MDNA223, containing a not-alpha, beta-enhanced IL-2 Superkine fused to anti-PD1 antibody.

Key findings include:

- T-MASK platform integrates tumor targeting and prolonged tumor retention with conditional activation to maximize anti-tumor efficacy and minimize systemic toxicity
- MDNA113 shows reduced IL-2R agonism with no change to PD1/PDL-1 blockade
- MDNA113 reduces systemic lymphocyte expansion showing dampening of systemic activity
- Cleavage of MDNA113 by tumor associated metalloproteases restores IL-2R signaling.
- MDNA113 is as effective as non-masked MDNA223 (a bispecific antiPD1-IL-2 superkine) in tumor models.

Unlike other conditionally activated immunotherapies, the T-MASK platform has the following unique features:

- The IL-13 Superkine, engineered to bind with high affinity to the tumor associated antigen IL-13Rα2, is used both as a tumor targeting component and a masking agent.
- The level of masking is tunable and avoids complete blockade of the immune-modulator thereby retaining good tolerability while achieving adequate systemic activity during its transit to the tumor micro-environment (TME)
- Upon delivery to the TME, the IL-13 Superkine traps the immune-modulator within the tumor for a prolonged period, allowing adequate time for metalloproteases to cleave the protease sensitive linker ("PSL") and activate the long-acting immune-modulator
- Combining modest systemic immune simulation with potent immune activation within the TME, could provide better outcomes for patients with immunosuppressive tumors.

A copy of the poster will be posted to the "Events and Presentations" page of Medicenna's website following the conclusion of the meeting. Details on the in-person poster presentation are shown below.

Title: Characterization of a tumor-targeting and activatable T-MASK platform to enhance tumor accumulation and tolerability of potent immune modulators
Poster Number: 1071
Presentation Date: Friday, November 3, 2023, 9:00 am to 7:00 pm PDT

About Medicenna

Medicenna is a clinical-stage immunotherapy company focused on developing novel, highly selective versions of IL-2, IL-4 and IL-13 Superkines and

first in class 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 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 FastTrack and Orphan Drug status from the FDA and FDA/EMA, respectively. Medicenna's BiSKITs ™ (**Bi**functional **S**uper**K**ine **I**mmuno**T**herapies) and T-MASK (**T**argeted **M**etalloprotease **A**ctivated **S**uper**K**ines) programs are in pre-clinical development designed to enhance the ability of Superkines to treat immunologically "cold" tumors.

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, without limitation, statements on the clinical development and potential of MDNA113 and the Company's T-MASK platform. 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 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.

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Source: Medicenna Therapeutics Corp.