Medicenna Presents Promising Preclinical Data from its First-in-Class Tumor Targeted and Conditionally Activated Anti-PD-1-IL-2 Bifunctional Superkine at the Annual 2025 AACR Meeting

April 30, 2025

MDNA113 is a novel IL-13Rα2 tumor-targeted and "masked" anti-PD-1-IL-2 Superkine (anti-PD1-IL-2 ^{SK}), engineered to precisely deliver clinically validated anti-PD1 and IL-2^{SK} to the tumor microenvironment (TME)

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

MDNA113's tumor targeting together with conditional activation provides a highly differentiated and potentially superior approach to current anti-PD-1-IL-2 bispecifics in development

TORONTO and HOUSTON, April 30, 2025 (GLOBE NEWSWIRE) -- Medicenna Therapeutics Corp. ("Medicenna" or the "Company") (TSX: MDNA, OTCQX: MDNAF), a clinical-stage immunotherapy company focused on the development of Superkines targeting cancer and autoimmune diseases, today presents new pre-clinical data from MDNA113, its first candidate from the BiSKIT (Bifunctional SuperKine ImmunoTherapies) platform, at the 2025 Annual Meeting of the American Association for Cancer Research (AACR) in Chicago, Illinois.

"Our MDNA113 program continues to generate encouraging pre-clinical data that underscores its potential as a first-in-class immunotherapy for immunologically cold tumors," said Fahar Merchant, Ph.D., President and CEO of Medicenna. "MDNA113 is uniquely differentiated against competing anti-PD-1-IL-2 therapies, with an optimized safety and efficacy profile that leverages its clinically validated pharmacology and novel IL-13 targeting approach. Not only are we observing compelling anti-tumor activity in IL-13Rα2 positive tumors but also signs of enhanced memory that may support durable responses. Commercial interest for bi-specific anti-PD-1 therapies is gaining momentum, with several recent transactions validating this emerging class of immunotherapies with the potential to offer new hope to millions of cancer patients worldwide."

MDNA113 is based on the Company's IL-2 and IL-13 Superkine Platforms, the former being used to develop MDNA11, a long-acting IL-2 super agonist, which has demonstrated durable single agent anti-tumor activity in the ongoing Phase 1/2 ABILITY-1 study of patients with advanced solid tumors.

Key highlights from the presentation are:

- Cis-binding maximizes synergy between immune checkpoint blockade and IL-2R activation on the same CD8^{+} T effector cells for optimal tumor cytotoxicity.
- MDNA113 retains PD-1/PDL-1 blockade while exhibiting attenuated IL-2R signaling that is restored upon cleavage by tumor-specific proteases in the tumor microenvironment (TME).
- Preferential tumor localization and retention of MDNA113 in the TME for at least 72 hours in mice implanted with tumors expressing IL-13Rα2.
- IL-13^{SK} masking of IL-2^{SK} in MDNA113 enhances tolerability and attenuates IL-2^{SK} induced peripheral lymphocyte expansion in mice.
- MDNA113 inhibits MC38/IL-13Rα2 tumor growth in mice and promotes memory response against tumor rechallenge with 100% protection observed with complete responders.
- MDNA113 enhances infiltration of functionally active CD8+ T cells over NK cells & Tregs in different tumor models.
- The combination of MDNA113's tumor targeting and conditional activation represents a uniquely differentiated and potentially superior alternative to other anti-PD-1-IL-2 bispecifics currently in development.

A copy of the poster and related slide deck are available on the "Scientific Presentations" page of Medicenna's website.

About MDNA113

MDNA113 is a novel, first-in-class tumor-targeted and tumor-activated bi-functional anti-PD1-IL-2 Superkine with exceptionally high affinity for IL-13Rα2 without binding to the functional IL-13Rα1. IL-13Rα2 is overexpressed in a wide range of solid tumors, including cold tumors with minimal to no expression in normal tissues. IL-13Rα2 expressing tumors also have abundant matrix metalloprotease in the tumor microenvironment that may efficiently activate MDNA113. IL-13Rα2 expression is associated with poor clinical outcome in multiple tumor types including prostate cancer, pancreatic cancer, ovarian cancer, liver cancer, breast cancer and brain cancer, with an annual world-wide incidence of over 2 million.

About Medicenna Therapeutics

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 Empowered Superkines. Medicenna's long-acting IL-2 Superkine, MDNA11, is a next-generation IL-2 with superior affinity toward CD122 (IL-2 receptor beta) and no CD25 (IL-2 receptor alpha) binding, 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 enrolling over 130 patients, 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. Medicenna's early-stage high-affinity IL-2β biased IL-2/IL-15 Super-antagonists, from its MDNA209 platform, are being evaluated as potential therapies for autoimmune and graft-versus host diseases. Medicenna's early-stage BiSKITs™ (Bifunctional SuperKine ImmunoTherapies) and the T-MASK™ (Targeted Metalloprotease Activated SuperKine) programs are designed to enhance the ability of Superkines to treat immunologically "cold" tumors.

For more information, please visit www.medicenna.com, and follow us on Twitter and LinkedIn.

Forward-Looking Statements

This news release contains forward-looking statements within the meaning of applicable securities laws. Forward-looking statements include, but are not limited to, express or implied statements regarding the future operations of the Company, estimates, plans, strategic ambitions, partnership activities and opportunities, objectives, expectations, opinions, forecasts, projections, guidance, outlook or other statements that are not historical facts, such as statements on the therapeutic potential and safety profile of MDNA113. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early-stage pre-clinical or clinical studies may not be indicative of full results or results from later stage or larger scale clinical studies and do not ensure regulatory approval. You should not place undue reliance on these statements, or the scientific data presented.

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 of the Company and in other filings made by the Company with the applicable securities regulators from time to time in Canada.

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.

This news release contains hyperlinks to information that is not deemed to be incorporated by reference in this new release.

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