Medicenna Presents Preclinical Data on MDNA11 as First Step to Shrink Tumors Before Surgery and Prevent Metastasis at the 2024 San Antonio Breast Cancer Symposium (SABCS)

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Single-agent MDNA11 was more effective than a combination of immune checkpoint inhibitors (anti-mPD1 and anti-mCTLA4) in preventing metastasis and achieving long-term survival in an aggressive mouse model of triple negative breast cancer (TNBC)

Mice treated with MDNA11 prior to surgery were able to mount powerful immune and memory response to subsequent tumor rechallenges, demonstrating potential to prevent new tumor growth

TORONTO and HOUSTON, Dec. 13, 2024 (GLOBE NEWSWIRE) -- Medicenna Therapeutics Corp. ("Medicenna" or the "Company") (TSX: MDNA, OTCQX: MDNAF), a clinical-stage immunotherapy company focused on the development of Superkines, announced that new preclinical data on MDNA11 was presented at the 2024 San Antonio Breast Cancer Symposium (SABCS), the world's largest breast cancer conference, taking place from December 10-13, 2024, in San Antonio, Texas.

Metastasis is the leading cause of cancer-related deaths worldwide. 1 in 8 women will be diagnosed with breast cancer in the US and 1 in 3 of those will become metastatic resulting in approximately 42,000 breast cancer deaths every year. Of those deaths, it is estimated that 97-99% of those will be from metastatic breast cancer.[1] Among breast cancer subtypes, **triple-negative breast cancer (TNBC)** is particularly aggressive, spreading more rapidly and representing a significant unmet medical need.

Neoadjuvant immunotherapy offers a promising treatment strategy in which patients with advanced but resectable cancer receive immunotherapy before surgery. This approach aims to shrink tumors, making them easier to remove, delay or prevent metastasis, while also targeting cancerous tissue that may not yet be detectable. Additionally, immunotherapy can prime the immune system against tumor antigens, promoting the development of long-lasting anti-cancer T cells. These T cells may help protect against residual tumor cells that could re-emerge and drive metastatic disease.

The presentation at 2024 SABCS highlighted the potential of MDNA11, a long-acting 'β-enhanced not-α' IL-2 Superkine, to improve treatment outcomes when administered prior to surgery. New findings demonstrated that a single low dose of MDNA11 as a neoadjuvant therapy significantly prevented metastasis, extended survival, and enabled a memory immune response that protects against tumor rechallenges in a TNBC model.

"We are impressed by MDNA11's remarkable capability, in the on-going ABILITY-1 clinical trial, to durably control cancer in patients with advanced late-stage metastatic disease in immunotherapy resistant tumors. This naturally encourages us to evaluate the potential of MDNA11 to tackle cancer head-on at the earlier stages of the disease and reverse cancer from a death sentence to a chronic manageable condition," said Fahar Merchant, PhD, President and CEO of Medicenna. "Our findings show that MDNA11 alone not only prevents metastasis in an aggressive preclinical breast cancer model when administered as a single pre-treatment prior to surgery, but also delivers superior long-term survival by preventing metastasis when compared to combinations of the leading checkpoint inhibitors, such as anti-CTLA4 and anti-PD-1. These data illustrate MDNA11's potential to redefine traditional immunotherapy by attacking cancer at its earliest stages and efficiently leverage the patient's healthier immune status to dramatically improve patient outcomes."

Key findings from presentation of MDNA11 pre-treatment prior to surgery in the aggressive TNBC model included:

- **Metastasis Prevention:** A single dose of neoadjuvant MDNA11 prevented the spread of tumors, with vast majority of treated mice (7/8 at high-dose of 5 mg MDNA11/kg and 6/7 at low-dose of 2 mg MDNA11/kg) surviving to study end (>4 months) without signs of metastasis despite tumor rechallenges. By contrast, all mice in the control group developed multiple metastasis and died within ~2 months even after tumor resection surgery.
- **Superior to Checkpoint Inhibitors:** MDNA11 alone, even at the lower dose, was more effective than a combination of immune checkpoint inhibitors (anti-mPD1 and anti-mCTLA4) in preventing metastasis and achieving long-term survival.
- **Memory Response Against Tumor Rechallenge:** Mice treated with MDNA11 were able to mount strong immune response to subsequent tumor rechallenges by engaging tumor antigen-specific T cells, demonstrating protection against new tumor growth.
- **Immune Cell Activation**: MDNA11 promoted the infiltration of $CD8^+$ T cells with potent tumor-killing capacity ($GrzB^+$) into the tumor microenvironment (TME) with no impact on immune-suppressive Treg cells, driving a potent and lasting immune response.

A copy of the presentation has been posted on the "Scientific Presentations" page of Medicenna's website.

About MDNA11

MDNA11 is an intravenously administered, long-acting, 'beta-enhanced not-alpha' IL-2 Superkine specifically engineered to overcome the shortcomings of aldesleukin and other next generation IL-2 variants by preferentially activating immune effector cells (CD8+ T and NK cells) responsible for killing cancer cells, with minimal or no stimulation of immunosuppressive Tregs. These unique proprietary features of the IL-2 Superkine have been achieved by incorporating seven specific mutations and genetically fusing it to a recombinant human albumin scaffold to improve the pharmacokinetic (PK) profile and pharmacological activity of MDNA11 due to albumin's natural propensity to accumulate in highly vascularized sites, in particular tumor and tumor draining lymph nodes. MDNA11 is currently being evaluated in the Phase 1/2 ABILITY-1 study as both

monotherapy and in combination with pembrolizumab.

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. MDNA11 is being evaluated in the Phase 1/2 ABILITY-1 Study (NCT05086692) as a monotherapy and in combination with pembrolizumab. 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 may contain 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 treatment potential and safety profile of MDNA11 (both as monotherapy and in combination with pembrolizumab) and the timing and/or release of any additional clinical updates. 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. Forward-looking statements are based on a number of assumptions believed by the Company to be reasonable at the date of this news release. Although the Company believes that the expectations reflected in such forward-looking statements are reasonable, there can be no assurance that such statements will prove to be accurate. These statements are subject to certain risks and uncertainties and may be based on assumptions that could cause actual results and future events to differ materially from those anticipated or implied 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 or implied in forward-looking statements. 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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[1] Metastatic breast cancer statistics, METAvivor. https://www.metavivor.org/mbc-prep/metastatic-breast-cancer-statistics

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