Medicenna Presents Preclinical Data Demonstrating Anti-Cancer Activity of a Long-Acting IL-13 Super-Antagonist at the AACR Annual Meeting

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-- Fc-MDNA413 suppresses pro-tumor immune pathways by simultaneously inhibiting IL-4 / IL-13 mediated signaling and proliferation via the Type II IL-4 receptor

-- Fc-MDNA413 inhibits in vivo tumor growth alone and in combination with an IL-2 super-agonist in a murine cancer model

-- Ability of Fc-MDNA413 to selectively block Type II IL-4 receptor activity in the tumor micro-environment (TME) may be effective in treating immunologically "cold" tumors

TORONTO and HOUSTON, April 08, 2022 (GLOBE NEWSWIRE) -- Medicenna Therapeutics Corp. ("Medicenna" or "the Company") (NASDAQ: MDNA TSX: MDNA), a clinical stage immuno-oncology company, today announced new preclinical data on its long-acting IL-13 super-antagonist, Fc-MDNA413, in an electronic poster at the American Association for Cancer Research (AACR) Annual Meeting. Fc-MDNA413 is derived from Medicenna's Superkine platform and comprises of an IL-13 super-antagonist (MDNA413) fused to the Fc domain for half-life extension.

"The ultimate opportunity in cancer immunotherapy is to re-educate the immunosuppressive TME to an inflamed TME, which we believe can be accomplished by MDNA413, our first-in-class IL-13 Superkine," said Dr. Fahar Merchant, President and CEO of Medicenna. "By undermining tumor defenses and weakening immune resistance with MDNA413, effector immune cells are then capable of targeting cold tumors such as pancreatic and prostate cancer. Our murine studies demonstrated the success of this approach, as Fc-MDNA413 monotherapy showed anti-tumor activity that was synergistically enhanced when combined with an IL-2 super-agonist known to selectively stimulate immune effector cells. Collectively, these results establish that selective blockade of the Type II IL-4 receptor could be deployed as an important strategy to unlock the potential of immunotherapeutic agents against a broader spectrum of tumors."

Included in the AACR poster are data from *in vitro* and murine studies evaluating the affinity profile, target selectivity and anti-cancer activity of Fc-MDNA413 in a poorly immunogenic ("cold") tumor model. Cold tumors are historically challenging to treat due to the immunosuppressive effects of pro-tumor myeloid cells and M2a macrophages that proliferate in the TME due to high levels of IL-4 and IL-13. Fc-MDNA413 was engineered to reverse the immunosuppressive TME of cold tumors by selectively binding to the IL-13 receptor alpha-1 (IL-13Rα1) with high affinity and blocking signaling via the Type II IL-4 receptor (IL-4Rα / IL-13Rα1) expressed on tumor associated macrophages (TAMs) and myeloid derived suppressor cells (MDSCs). These data demonstrate for the first time that an IL-13 Superkine, such as MDNA413, can block the pathways utilized by TAMs and MDSCs to promote cancer growth.

Key data and conclusions from the AACR poster include:

- Compared to a fusion protein consisting of a Fc domain linked to wild-type IL13, Fc-MDNA413 is >300-fold more selective for IL-13Rα1 over IL-13Rα2 (a decoy receptor)
- Fc-MDNA413 potently inhibits pro-tumor IL-4/IL-13 mediated pathways, as measured by reductions in pSTAT6 signaling and TF-1 cell proliferation.
- Fc-MDNA413 potently inhibits IL-4 and IL-13 mediated M2a polarization of TAMs, which are known to accumulate in the TME and promote cancer growth and metastasis.
- Fc-MDNA413 inhibits tumor growth as a monotherapy and synergistically when combined with a long-acting IL-2 super-agonist in a poorly immunogenic murine tumor model

The electronic poster, entitled *Characterization of a Long-Acting IL-13 Super-Antagonist Engineered to Target Tumor Associated Macrophages and Myeloid Cells*, is available to registered attendees of the AACR annual meeting on the meeting website (Abstract #5542). A copy will also be posted to 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, (**Bi**functional **S**uper**K**ine **I**mmuno**T**herapie**s**) is designed to enhance the ability of Superkines to treat immunologically "cold" tumors. Medicenna's IL-4 Empowered Superkine, 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. MDNA55 has obtained Fast-Track and Orphan Drug status from the FDA and FDA/EMA, respectively.

Forward-Looking Statements
This news release contains forward-looking statements under applicable securities laws and relate to the future operations of the Company and other statements that are not historical facts. Forward-looking statements are often identified by terms such as "will", "may", "should", "anticipate", "expects",

"believes", "seeks" and similar expressions. All statements other than statements of historical fact, included in this release, including statements related to the potential of MDNA413, are forward-looking statements that 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 annual information form and Form 40-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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