Medicenna Announces Preclinical Data Highlighting the Potent Anti-Tumor Efficacy of Anti-PD1-IL-2 BiSKIT at the AACR Annual Meeting

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*-- Anti-PD1-IL-2 BiSKIT (**Bi**-functional **S**uper**K**ines for **I**mmuno**T**herapy) selectively stimulates anti-cancer immune cells via IL-2 agonism and prevents their exhaustion through PD-1 inhibition*

-- Treatment with anti-PD-1-IL-2 BiSKIT led to statistically significant improvements in tumor growth inhibition and survival compared to the co-administration of its underlying components

-- Data highlight the versatility of the Superkine platform and the advantages of using a cis-binding approach to enhance the efficacy of checkpoint blockade

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 highlighting the potent anti-tumor efficacy of the next-generation BiSKIT (***Bi**-functional **S**uper**K**ines for **I**mmuno**T**herapy*), anti-PD1-MDNA109FEAA, in an electronic poster at the American Association for Cancer Research (AACR) Annual Meeting. Anti-PD1 drugs, such as Keytruda® and Opdivo®, have been approved for a number of cancer indications and have shown to benefit patients by reducing exhaustion of cancer fighting immune cells. By fusing Medicenna's IL-2 Superkine to an anti-PD1, the combined benefits of stimulating cancer fighting immune cells and preventing their exhaustion has the potential to substantially improve patient outcomes.

"By leveraging our Superkine platform, we designed a BiSKIT that comprises both a checkpoint inhibitor and an IL-2 super-agonist to activate cancer killing immune cells and simultaneously prevent their exhaustion," said Dr. Fahar Merchant, President and CEO of Medicenna. "We are particularly excited by these data demonstrating the superior therapeutic activity of our novel BiSKIT compared to co-administration of the individual components. The presentation highlights the advantages of our *cis*-binding approach to enhance synergy between IL-2 agonism and checkpoint blockade within one therapeutic agent. Furthermore, our ability to generate a wide array of BiSKITs underscores the versatility of Medicenna's Superkine platform in creating new intellectual property which in turn could lead to collaborations with leading developers of checkpoint inhibitors"

Anti-PD1-MDNA109FEAA is designed to concurrently target PD1 and the IL-2 receptor on the same immune cells (*cis*-binding approach). It consists of an anti-PD1 antibody linked to an IL-2 super-agonist (MDNA109FEAA) with enhanced affinity for IL-2 receptor beta (IL-2Rβ) and no binding to IL-2 receptor alpha (IL-2Rα). Stimulation of IL-2Rβ is associated with selective activation of anti-cancer immune cells, while blockade of IL-2Rα binding limits activation of pro-tumor immune cells and reduces toxicity.

Key data and conclusions from the AACR poster include:

- Anti-PD1-MDNA109FEAA showed no binding to IL-2Rα and a 313-fold increase in binding affinity for IL-2Rβ compared to a wild-type IL-2 fusion protein
- Human and mouse versions of anti-PD1-MDNA109FEAA showed enhanced signaling in anti-cancer T cells and reduced activation of pro-tumor Treg cells as shown by 169-fold and 155-fold enhancements in CD8/Treg EC_{50} ratios, respectively
- Anti-PD1-MDNA109FEAA's potency against the PD1/PDL1 checkpoint was similar to that of control anti-PD1 antibodies
- Treatment with the anti-PD1-IL-2 BiSKIT led to dose-dependent and statistically significant improvements in tumor growth inhibition and survival compared to co-administration of individual components, namely MDNA19 (MDNA109FEAA-Fc) and anti-PD1 in murine tumor models.

The electronic poster, entitled, *An 'Anti-PD1-IL2 beta-only Super-Agonist' Displays Potent Anti-tumor Efficacy* , is available to registered attendees of the AACR annual meeting on the meeting website (Abstract # 5532). 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 the Company's Anti-PD1-IL-2 BiSKIT, the creation of intellectual property and potential collaborations, 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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