



Nature Communications Publishes Studies on Medicenna's IL-2 Superkine Platform

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TORONTO, Sept. 26, 2019 /CNW/ - Medicenna Therapeutics Corp. ("**Medicenna**" or "the **Company**") (TSX: MDNA, OTCQB: MDNAF), a clinical stage immuno-oncology company developing first-in-class Superkines and Empowered Cytokines, today announced the publication of a peer-reviewed article in last month's edition of *Nature Communications* providing independent third-party validation of Medicenna's IL-2 Superkine platform, MDNA109.

The publication titled "*A next-generation tumor-targeting IL-2 preferentially promotes tumor infiltrating CD8+ T-cell response and effective tumor control*" describes the safety, efficacy, pharmacokinetics, immunogenicity as well as efficacy profile in different tumor models of long-acting variants of MDNA109 including fusions to antibodies to create tumor targeted immunocytokines.

While native IL-2 (Proleukin) has been approved for the treatment of metastatic melanoma and kidney cancer, its short *in vivo* half-life, severe toxicity and propensity to amplify tumor protecting Treg cells are major barriers that prevent Proleukin from being widely used for cancer therapy.

"A publication in the prestigious journal *Nature Communications* has now independently validated the strategy undertaken by Medicenna to develop MDNA109 as a next-generation IL-2 superkine to treat cancers," states Dr. Moutih Rafei, Associate Professor in the Department of Pharmacology and Physiology at the Université de Montreal and Head of Discovery at Medicenna. "These independent findings provide strong confirmation that Medicenna's MDNA109 superkine represents a potential breakthrough in cytokine-based cancer therapy with broad therapeutic implications."

"The publication confirms our expectation of IL-2 superkine being a versatile platform for multiple uses in immuno-oncology and making it accessible to a much larger pool of cancer patients," commented Fahar Merchant, President & CEO of Medicenna Therapeutics. "Unlike other efforts to develop better versions of IL-2, our approach to genetically create IL-2 superkines using rational drug design avoids the manufacturing issues associated with polymer based conjugation techniques and their limited ability to be developed as antibody targeted immunocytokines. Based on these data and other pre-clinical data in hand, we continue with confidence to advance this program towards clinical development next year."

The key findings in the *Nature Communications* paper regarding our MDNA109 platform were as follows:

1. It has increased half-life and preferentially boosts tumor killing CD8+ T cells instead of tumor protecting regulatory T cells (Tregs).
2. It has reduced CD25 binding, a better safety profile and is not immunogenic.
3. In combination with anti-PD-L1 antibodies, it significantly enhances antitumor effects in advanced cancers by overcoming tumor resistance to checkpoint blockade.
4. Pre-treatment prior to surgical resection of the tumor in an aggressive metastatic breast cancer model, significantly reduced tumor spread.
5. When combined with Tyrosine Kinase Inhibitors (TKI), currently used to treat various cancers in a first line setting, the anti-tumor effect was synergistic and generated a strong memory response when re-challenged, thereby limiting cancer relapse and ability to overcome resistance commonly observed with TKI therapies.
6. Functions as an "immune accelerator" to enhance the therapeutic effects of checkpoint blockades.
7. Synergizes with targeted therapy to control "cold" tumors which generally do not respond to checkpoint blockade.
8. Intra-tumoral treatment is not only sufficient for local-tumor control but is able to also control untreated distal-tumors.

These MDNA109 derived molecules are referred to in the publication as follows: sumIL-2 (MDNA109FA), sumIL-2-Fc (MDNA109FA-Fc), Ab-sumIL-2 (Ab-MDNA109FA); erb-sumIL-2 (erb-MDNA109FA); anti-Her-2-sumIL-2 (anti-Her-2-MDNA109FA). Note that MDNA19, Medicenna's lead candidate from the MDNA109 platform has 1 additional mutation when compared to sumIL-2-Fc in order to further enhance selectivity for tumor killing immune cells.

The work reported in this publication is covered by Medicenna patents and patents in-licensed by Medicenna.

About MDNA109

Developed by scientists at Stanford University, MDNA109 is an engineered version of IL-2 that binds up to 200 times more effectively to IL-2R β (CD122), thus greatly increasing its ability to activate and proliferate the immune cells needed to fight cancer. MDNA109 is an IL-2 Superkine that preferentially drives the expansion and responses of effector T cells and Natural Killer (NK) cells over Treg cells. It is the only IL-2 in development with a distinct mechanism by virtue of its high affinity towards CD122 allowing it to effectively combat NK cell anergy (exhaustion) which occurs frequently after cancer immunotherapy.

About Medicenna Therapeutics Corp.

Medicenna is a clinical stage immunotherapy company focused on oncology and the development and commercialization of novel, highly selective versions of IL-2, IL-4 and IL-13 Superkines and first in class Empowered Cytokines™ (ECs) for the treatment of a broad range of cancers. Supported by a US\$14.1M non-dilutive grant from CPRIT (Cancer Prevention and Research Institute of Texas), Medicenna's lead IL4-EC, MDNA55, has completed enrolling patients in a Phase 2b clinical trial for rGBM, the most common and uniformly fatal form of brain cancer, at top-ranked brain cancer centres in the US. MDNA55 has been studied in five clinical trials involving 132 patients, including 112 adults with rGBM. MDNA55 has demonstrated

compelling efficacy and has obtained Fast-Track and Orphan Drug status from the FDA and FDA/EMA respectively. For more information, please visit www.medicenna.com.

This news release contains forward-looking statements relating 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" and similar expressions. All statements other than statements of historical fact, included in this release, including, without limitation, statements that Medicenna's MDNA109 superkine represents a potential breakthrough in cytokine-based cancer therapy with broad therapeutic implications, that our IL-2 superkine is a versatile platform for multiple uses in immuno-oncology, that we will avoid the manufacturing issues associated with polymer based conjugation techniques, that we will continue with confidence to advance this program towards clinical development next year and statements related to the future plans and objectives of the Company, are forward-looking statements that involve 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 of the Company dated June 24, 2019 and in other filings made by the Company with the applicable securities regulators from time to time.

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 at the time of preparation, 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 of this news release and the Company will update or revise publicly any of the included forward-looking statements only as expressly required by Canadian securities law.

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