New Peer-Reviewed Study Reveals Actionable Immune–Microenvironment Target in Brain Metastasis; Medicinova Advances Clinical Translation

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LA JOLLA, Calif., April 27, 2026 (GLOBE NEWSWIRE) -- MediciNova, Inc., a biopharmaceutical company traded on the NASDAQ Global Market (NASDAQ: MNOV) and the Standard Market of the Tokyo Stock Exchange (Code Number: 4875), today announced that a study conducted by researchers at the Spanish National Cancer Research Centre (CNIO) has identified macrophage migration inhibitory factor (MIF)–mediated reprogramming of CD74-positive microglia and macrophages as a central vulnerability in brain metastasis. The research, recently published in the peer-reviewed journal "*Cancer Research"* (March 2026), demonstrates pharmacological modulation of this pathway using the brain-penetrant small molecule ibudilast.

The work, led by Manuel Valiente PhD, head of CNIO Brain Metastasis group, and colleagues at CNIO, shows that tumor-derived MIF alters the functional state of microglia and infiltrating macrophages in the brain, converting them from a potentially protective role into a pro-metastatic one. In multiple experimental models and fresh patient-derived brain metastasis samples, inhibition of the MIF–CD74 signaling axis significantly reduced metastatic progression. Importantly, the investigators also identified secreted MIF as a candidate liquid biopsy biomarker detectable in cerebrospinal fluid, supporting a translational, biomarker-guided clinical strategy.

The study further demonstrates that ibudilast can effectively block MIF–CD74 signaling, reverse pro-metastatic immune reprogramming, and suppress brain metastasis growth in preclinical systems. In addition, transcriptomic analyses define predictive biomarker signatures associated with treatment response, reinforcing the potential for patient stratification in future clinical studies. The findings suggest translational potential for MN-166 (ibudilast), the company's leading product, in future therapeutic strategies for brain metastasis within neuro-oncology.

MediciNova plans to collaborate with Dr. Valiente and CNIO on future clinical research aimed at patients with solid tumors having brain metastases.

Dr. Valiente commented on the findings, "Brain metastases develop in up to 30% of patients with advanced solid tumors, most commonly arising from lung cancer, breast cancer, melanoma, and colorectal cancer, and remain an area of substantial unmet medical need. Despite recent advances in systemic therapies, patients with brain metastases have historically been excluded from many clinical trials, limiting progress in the development of targeted treatments. By focusing on brain-specific immune–microenvironment interactions rather than tumor-intrinsic alterations alone, the CNIO findings open a new therapeutic avenue that may be applicable across multiple primary tumor types."

"Brain metastasis represents one of the most urgent and challenging frontiers in oncology," said Dr. Kazuko Matsuda, Chief Medical Officer. "The publication of this work in Cancer Research provides strong mechanistic and translational rationale to pursue biomarker-driven clinical strategies. We hold granted patents covering MN-166 for preventing and minimizing cancer metastasis across multiple solid tumor types, including pancreatic, lung, breast, colorectal and ovarian cancers, as well as melanoma. Our focus is now on advancing future clinical investigations and responsibly translating these insights into studies designed for patients with brain metastases."

The full study, *"MIF -Induced CD74+ Microglia and Macrophages Promote Progression of Brain Metastasis and Are Clinically Relevant Across Central Nervous System Disorders,"* is available online in Cancer Research. (https://doi.org/10.1158/0008-5472.CAN-25-4018)

About MediciNova

MediciNova, Inc. is a clinical-stage biopharmaceutical company developing a broad late-stage pipeline of novel small molecule therapies for inflammatory, fibrotic, and neurodegenerative diseases. Based on two compounds, MN-166 (ibudilast) and MN-001 (tipelukast), with multiple mechanisms of action and strong safety profiles, MediciNova has numerous programs in clinical development. MediciNova's lead asset, MN-166 (ibudilast), is currently in Phase 3 for amyotrophic lateral sclerosis (ALS) and degenerative cervical myelopathy (DCM) and is Phase 3-ready for progressive multiple sclerosis (MS). MN-166 (ibudilast) is also being evaluated in Phase 2 trials in Long COVID and substance dependence. MN-001 (tipelukast) was evaluated in a Phase 2 trial in idiopathic pulmonary fibrosis (IPF) and a second Phase 2 trial in non-alcoholic fatty liver disease (NAFLD) is ongoing. MediciNova has a strong track record of securing investigator-sponsored clinical trials funded through government grants.

Forward-Looking Statements

Statements in this press release that are not historical in nature constitute forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, without limitation, statements regarding the future development and efficacy of MN-166 and MN-001. These forward-looking statements may be preceded by, followed by, or otherwise include the words "believes," "expects," "anticipates," "intends," "estimates," "projects," "can," "could," "may," "will," "would," "considering," "planning" or similar expressions. These forward-looking statements involve a number of risks and uncertainties that may cause actual results or events to differ materially from those expressed or implied by such forward-looking statements. Factors that may cause actual results or events to differ materially from those expressed or implied by these forward-looking statements include, but are not limited to, risks of obtaining future partner or grant funding for development of MN-166 and MN-001, and risks of raising sufficient capital when needed to fund MediciNova's operations and contribution to clinical development, risks and uncertainties inherent in clinical trials, including the potential cost, expected timing and risks associated with clinical trials designed to meet FDA guidance and the viability of further development considering these factors, product development and commercialization risks, the uncertainty of whether the results of clinical trials will be predictive of results in later stages of product development, the risk of delays or failure to obtain or maintain regulatory approval, risks associated with the reliance on third parties to sponsor and fund clinical trials, risks regarding intellectual property rights in product candidates and the ability to defend and enforce such intellectual property rights, the risk of failure of the third parties upon whom MediciNova relies to conduct its clinical trials and manufacture its product candidates to perform as expected, the risk of increased cost and delays due to delays in the commencement, enrollment, completion or analysis of clinical trials or significant issues regarding the adequacy of clinical trial designs or the execution of clinical trials, and the timing of expected filings with the regulatory authorities, MediciNova's collaborations with third

parties, the availability of funds to complete product development plans and MediciNova's ability to obtain third party funding for programs and raise sufficient capital when needed, and the other risks and uncertainties described in MediciNova's filings with the Securities and Exchange Commission, including its annual report on Form 10-K for the year ended December 31, 2025 and its subsequent periodic reports on Form 10-Q and current reports on Form 8-K. Undue reliance should not be placed on these forward-looking statements, which speak only as of the date hereof. MediciNova disclaims any intent or obligation to revise or update these forward-looking statements.

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