



## MediciNova Announces Publication of Positive Findings on MN-166 (ibudilast) in Alcohol Dependence

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LA JOLLA, Calif., Jan. 23, 2017 (GLOBE NEWSWIRE) -- MediciNova, Inc., a biopharmaceutical company traded on the NASDAQ Global Market (NASDAQ:MNOV) and the JASDAQ Market of the Tokyo Stock Exchange (Code Number:4875), today announced that the medical journal *Neuropsychopharmacology* has published a new article on MN-166 (ibudilast) written by Dr. Lara Ray and colleagues at the University of California, Los Angeles. The article reports that MN-166 (ibudilast) was associated with mood improvements on the stress- and alcohol-cue exposures, as well as reductions in overall craving, depression and anxiety for alcohol in subjects diagnosed with alcohol use disorder (AUD). Moreover, in the subjects that had higher depressive symptomatology, MN-166 (ibudilast) reduced the stimulant and mood-altering effects of alcohol compared to placebo.

Major findings from the publication, "Development of the Neuroimmune Modulator Ibudilast for the Treatment of Alcoholism: A Randomized, Placebo-Controlled, Human Laboratory Trial," include the following:

In an intravenous alcohol challenge session in subjects reporting higher levels of depressive symptomatology as measured by the Beck Depressive Inventory (BDI) Scale:

- ibudilast significantly decreased the alcohol-induced stimulation ( $p < 0.05$ ),
- ibudilast significantly decreased alcohol-induced positive mood ( $p < 0.05$ ),
- ibudilast significantly decreased 'wanting' of alcohol ( $p < 0.05$ ), and
- ibudilast showed a trend to decreased 'liking' of alcohol ( $p = 0.06$ ).

While ibudilast decreased the alcohol-induced rewarding effects described above during the alcohol challenge, it also increased negative mood responses to alcohol ( $p < 0.05$ ) in subjects reporting higher levels of depressive symptomatology on the BDI.

Overall, MN-166 (ibudilast) was well tolerated. There were no severe adverse events and there were no study dropouts directly related to MN-166 (ibudilast).

### About the Clinical Trial

This randomized, double-blind, placebo-controlled study enrolled 24 non-treatment seeking individuals with either alcohol abuse or dependence in a UCLA research unit. Participants were randomly assigned to a 7-day treatment period involving repeat oral administration of either MN-166 (ibudilast) escalated up to 100 mg/day or placebo. During the treatment period, participants were administered the study medication, completed an IV alcohol challenge, and took part in laboratory tests of alcohol craving as well as mood assessments and standard safety tests. Following a 7-10 day study break, trial participants re-enrolled for another 7-day period wherein they crossed over to the other treatment condition. The key study outcomes included safety, tolerability and preliminary efficacy as indicated by whether MN-166 (ibudilast) reduced alcohol craving and the rewarding effects of alcohol under controlled experimental conditions of cue exposure and alcohol administration.

### About MN-166 (ibudilast)

MN-166 (ibudilast) has been marketed in Japan and Korea since 1989 to treat post-stroke complications and bronchial asthma. MediciNova is developing MN-166 for progressive MS and other neurological conditions such as ALS and drug use disorders. MN-166 (ibudilast) is a first-in-class, orally bioavailable, small molecule phosphodiesterase (PDE) -4 and -10 inhibitor and a macrophage migration inhibitory factor (MIF) inhibitor that suppresses pro-inflammatory cytokines and promotes neurotrophic factors. It attenuates activated glia cells, which play a major role in certain neurological conditions. Ibudilast's anti-neuroinflammatory and neuroprotective actions have been demonstrated in preclinical and clinical study results and provide the rationale for its therapeutic utility in neurodegenerative diseases (e.g., progressive MS and amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease), substance abuse/addiction and chronic neuropathic pain.

### About MediciNova

MediciNova, Inc. is a publicly-traded biopharmaceutical company founded upon acquiring and developing novel, small-molecule therapeutics for the treatment of diseases with unmet medical needs with a commercial focus on the U.S. market. MediciNova's current strategy is to focus on MN-166 (ibudilast) for neurological disorders such as progressive MS, ALS and substance dependence (e.g., alcohol use disorder, methamphetamine dependence and opioid dependence), and MN-001 (tipelukast) for fibrotic diseases such as nonalcoholic steatohepatitis (NASH) and idiopathic pulmonary fibrosis (IPF). MediciNova's pipeline also includes MN-221 (bedoradrine) for the treatment of acute exacerbations of asthma and MN-029 (denibulin) for solid tumor cancers. MediciNova is engaged in strategic partnering and other potential funding discussions to support further development of its programs. For more information on MediciNova, Inc., please visit [www.medicinova.com](http://www.medicinova.com).

*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, MN-221, MN-001, and MN-029. 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, MN-221, MN-001, and MN-029 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, 2015 and its subsequent periodic reports on Forms 10-Q and 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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