Minerva Neurosciences Announces Findings Showing Effect of Roluperidone on Brain-Derived Neurotrophic Factor (BDNF)

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WALTHAM, Mass., Aug. 22, 2018 (GLOBE NEWSWIRE) -- Minerva Neurosciences, Inc. (NASDAQ:NERV), a clinical-stage biopharmaceutical company focused on the development of therapies to treat central nervous system (CNS) disorders, today announced findings from a recent pre-clinical study that provide evidence of the effect of roluperidone (MIN-101) on BDNF. This neurotrophin, which is the most widely distributed member of this class of proteins in the brain, has been associated with neurogenesis, neuroplasticity, neuroprotection, synapse regulation, learning, and memory.[1] Its involvement in schizophrenia has also been described.[2]

Data from this study are being presented today at the Medicxi Forum in Venice, Italy showing that after three days of administration, roluperidone has been observed to significantly increase the release of BDNF in cultured brain hippocampal neurons in a dose dependent manner. The level of BDNF release following the administration of roluperidone increased by approximately 20 percent, comparable to the effect shown by pridopidine, the reference molecule used in the study. Pridopidine is currently under development for Huntington disease.[3]

Dysregulation of BDNF has been described in the pathophysiology of schizophrenia and several other neuro-psychiatric disorders. Therefore, in addition to the known neurotransmitter pathways targeted by roluperidone, particularly the serotoninergic 5-HT_{2A} and the sigma2 pathways, the effect of roluperidone on BDNF suggests that this investigational compound may have the potential for disease modification and improved neuroplasticity.

“These findings, along with the clinical results seen during the phase 2b study, suggest the potential of roluperidone to change the overall course of schizophrenia,” said Dr. Remy Luthringer, Executive Chairman and Chief Executive Officer of Minerva. “In addition, the BDNF findings are paving the way to explore roluperidone’s therapeutic potential beyond schizophrenia.”

BDNF is a member of a family of proteins called neurotrophins that play an important role in the formation and function of neural connections. An emerging body of evidence has pointed to a link between BDNF and CNS disorders. Epigenetic changes in the BDNF gene have been shown to be related to the pathophysiology of schizophrenia, and the reduced expression of BDNF has been identified in the frontal cortex and hippocampus of the brain in patients with schizophrenia.[4]

Researchers believe that lower than normal levels of BDNF may affect the pathogenesis of schizophrenia by contributing to altered brain development and abnormalities in neuroplasticity and synaptic function. These disturbances may explain certain morphological and neurochemical characteristics in the brains of patients with schizophrenia.[5]

Furthermore, a functional polymorphism in the BDNF gene has been observed to interact with environmental factors in the development of psychoses including schizophrenia and bipolar disorders.[6] Additional studies have found an association between higher levels of BDNF and improved cognitive function in schizophrenic patients and improved neuropsychological function.[7]

About Roluperidone

Roluperidone is a drug candidate with equipotent affinities for 5-hydroxytryptamine-$_{2A}$ (5-HT_{2A}) and sigma2 and at lower affinity levels, α1-adrenergic receptors. Roluperidone exhibits no affinity for dopaminergic, muscarinic, cholinergic and histaminergic receptors. Roluperidone has no direct dopaminergic post-synaptic blocking effects, known to be involved in some side effects like extrapyramidal symptoms, sedation, prolactin increases and weight gain.

A pivotal Phase 3 clinical trial is ongoing with roluperidone as monotherapy for negative symptoms in patients diagnosed with schizophrenia. Approximately 500 patients are expected to be enrolled at approximately 60 clinical sites in the U.S. and Europe. Top-line results from the 12-week double blind phase of this trial are expected in the first half of 2019.

About Minerva Neurosciences:

Minerva Neurosciences, Inc. is a clinical-stage biopharmaceutical company focused on the development and commercialization of a portfolio of product candidates to treat CNS diseases. Minerva’s proprietary compounds include: roluperidone (MIN-101), in clinical development for schizophrenia; MIN-117, in clinical development for major depressive disorder (MDD); seltorexant (MIN-202 or JNJ-42847922), in clinical development for insomnia and MDD; and MIN-301, in pre-clinical development for Parkinson’s disease. Minerva’s common stock is listed on the NASDAQ Global Market under the symbol “NERV.” For more information, please visit www.minervaneurosciences.com.

Forward-Looking Safe Harbor Statement

This press release contains forward-looking statements which are subject to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts, reflect management’s expectations as of the date of this press release, and involve certain risks and uncertainties. Forward-looking statements include statements herein with respect to the timing and scope of current clinical trials and results of clinical trials with roluperidone, seltorexant, MIN-117 and MIN-301; the timing and scope of future clinical trials and results of clinical trials with these compounds; the clinical and therapeutic potential of these compounds; our ability to successfully develop and commercialize our therapeutic products; the sufficiency of our current cash position to fund our operations; and management’s ability to successfully achieve its goals. These forward-looking statements are based on our current expectations and may differ materially from actual results due to a variety of factors including, without limitation, whether roluperidone, seltorexant, MIN-117 and MIN-301 will advance further in the clinical trials process and whether and when, if at all, they will receive final approval from the U.S. Food and Drug Administration or equivalent foreign regulatory

agencies and for which indications; whether any of our therapeutic products will be successfully marketed if approved; whether any of our therapeutic product discovery and development efforts will be successful; management's ability to successfully achieve its goals; our ability to raise additional capital to fund our operations on terms acceptable to us; and general economic conditions. These and other potential risks and uncertainties that could cause actual results to differ from the results predicted are more fully detailed under the caption "Risk Factors" in our filings with the Securities and Exchange Commission, including our Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, filed with the Securities and Exchange Commission on August 2, 2018. Copies of reports filed with the SEC are posted on our website at www.minervaneurosciences.com. The forward-looking statements in this press release are based on information available to us as of the date hereof, and we disclaim any obligation to update any forward-looking statements, except as required by law.

Contact:

William B. Boni
VP, Investor Relations/
Corp. Communications
Minerva Neurosciences, Inc.
(617) 600-7376

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Primary Logo

Source: Minerva Neurosciences, Inc