

News

Office of Public Relations 135 Cannon Street, Suite 403 Charleston, SC 29425 843.792.3621 843.792.6723 FAX

For Immediate Release

Contact: Heather Woolwine (843)792-7669 woolwinh@musc.edu

New evidence supports idea that targeting brain proteins may help treat meth addiction

MUSC researchers block addictive and relapse behavior in meth-addicted rodents

Charleston, S.C. (Feb. 23, 2009) – Researchers at the Medical University of South Carolina, led by Foster Olive, Ph.D., have discovered that a research drug called MTEP (3-((2-methyl-4-thiazolyl)ethynyl)pyridine) helped laboratory rodents kick their methamphetamine habit and decreased their chance of relapse. The results of the study earned first article in the March 2009 issue of Neuropsychopharmacology. A full copy of the study is available at: http://www.nature.com/npp/journal/v34/n4/full/npp2008140a.html .

MTEP blocked a type of protein, called the mGluR5 receptor, which normally binds the brain's chemical messenger glutamate. These receptors are found in high concentrations in brain regions that are affected by methamphetamine, a highly potent and addictive illegal drug commonly referred to as "meth". When these receptors were blocked by MTEP, rodents were less motivated to obtain meth and did not relapse when exposed to signals, or cues, that were previously associated with meth intake. The work supports a growing body of evidence in favor of a new class of medications that targets mGluR5 receptors for treating drug addiction. The study also demonstrated that MTEP did not affect food intake or general activity, suggesting that the rodents were still able to function normally. A lay summary of the study process is available upon request.

"mGluR5 receptor inhibitors are currently in clinical trials for the treatment of other medical conditions, and our study in rodents provides evidence that this class of drugs, if eventually approved by the FDA, might be of use in reducing meth use in addicts or preventing relapse," said Dr. Olive, assistant professor in the Institute of Psychiatry and Center for Drug and Alcohol Programs. "These findings also highlight the importance of the brain chemical glutamate in meth-taking behavior. Most prior studies have focused on the ability of meth to induce the release of one of the brain's 'pleasure' chemicals called dopamine."

Meth addiction is a significant public health problem, and there are currently no medications to treat it. Practitioners now use a combination of psychosocial or cognitive behavioral therapy in inpatient and outpatient settings to treat meth addiction, but some argue that these therapies offer high relapse rates. A very addictive and powerful psychostimulant, meth is cheap and relatively easy to make by the average person. Although the number of people using meth remains relatively stable, the number of people entering treatment for meth addiction has more than doubled in the past five years. In addition to the numerous psychiatric and cognitive problems that chronic meth use produces, meth addicts often experience serious health consequences such as heart problems and infectious diseases.

###

About MUSC

Founded in 1824 in Charleston, The Medical University of South Carolina is the oldest medical school in the South. Today, MUSC continues the tradition of excellence in education, research, and patient care. MUSC educates and trains more than 3,000 students and residents, and has nearly 11,000 employees, including 1,500 faculty members. As the largest non-federal employer in Charleston, the university and its affiliates have collective annual budgets in excess of \$1.6 billion. MUSC operates a 750-bed medical center, which includes a nationally recognized Children's Hospital, Ashley River Tower (cardiovascular, digestive disease and surgical oncology), and a leading Institute of Psychiatry. For more information on academic information or clinical services, visit www.musc.edu or www.muschealth.com.