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## **UT Southwestern researchers uncover why ketamine produces a fast antidepressant response**

DALLAS – June 17, 2011 – UT Southwestern Medical Center scientists are shedding new light on why the anesthetic drug ketamine produces a fast-acting antidepressant response in patients with treatment-resistant depression.

The drug's robust effect at low doses as a fast-acting antidepressant potentially has use in emergency rooms with high-risk patients.

"Ketamine produces a very sharp increase that immediately relieves depression," said Dr. Lisa Monteggia, associate professor of psychiatry at UT Southwestern and senior author of the study published June 15 in *Nature*.

Typical antidepressant medications – one of the most widely prescribed classes of drugs in the U.S. each year – often take several weeks to relieve symptoms of depression. If they are not successful within 12 weeks, physicians must prescribe a different antidepressant to produce a response.

"Ketamine produces a fast-acting antidepressant effect, and we hope our investigation provides critical information to treat depression effectively sooner," Dr. Monteggia said.

"We now have a novel pathway to explore that may provide potential for the development of faster-acting and longer-lasting antidepressants," Dr. Monteggia said.

The next step, Dr. Monteggia said, is to investigate further the short- and long-term effects of the changes that occur when the brain cells communicate with each other.

Other UT Southwestern researchers involved in the study were Anita Autry, student research assistant in psychiatry; Dr. Megumi Adachi, instructor in psychiatry; Dr. Elena Nosyreva, instructor in neuroscience; Dr. Elisa Na, postdoctoral researcher in psychiatry; Mr. Maarten Los, visiting junior researcher in psychiatry; Mr. Peng-fei Cheng, formerly in psychiatry; and Dr. Ege Kavalali, professor of neuroscience and physiology.

The study was funded by the National Institute of Mental Health.

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