Gifts of the MAGI in Schizophrenia and Bipolar Disorder

New genetic findings reported in Biological Psychiatry

Philadelphia, PA, May 10, 2012 – These findings are not about the classic story of gift-giving, although the MAGI genes (officially named membrane associated guanylate kinase, WW and PDZ domain containing proteins) do influence brain function in important ways.

MAGI1 and MAGI2 are genes that code for the MAGI proteins. These proteins influence the development and function of synapses in the brain, the junctions where communication between nerve cells occurs.

Because they perform many important functions at brain synapses, researchers have made several attempts to tie these genes to psychiatric disease. So far, the efforts have been inconclusive, possibly because of insufficient statistical power, but now, authors of a new research study in Biological Psychiatry provide important evidence that MAGI1 and MAGI2 play a role in psychiatric disease.

Led by principal investigator and senior author Dr. Silvia Paddock, they examined genetic variations in families with bipolar affective disorder, schizophrenia, and schizoaffective disorder. These disorders have high overlapping genetic risk and are also highly heritable.

Using a multistage approach to assess and rank genetic variants, they identified rare mutations in MAGI1 and MAGI2.

Dr. John Krystal, Editor of Biological Psychiatry, commented, “We are searching for clues as to why the brain connections develop abnormally in people diagnosed with schizophrenia and bipolar disorder. In this case, the authors have found a very rare signal that may shed light on the cause of this problem for a small group of people carrying these diagnoses.”

“Our initial finding of mutated MAGI1 in a large, affected family may also indicate that it may have been premature by our field to declare linkage efforts failed,” Dr. Paddock noted. “Valuable samples from large families have already been collected and previous linkage results can guide us where to look for mutations. We can and should go back to these samples and analyze them with the unprecedented accuracy that today's technology has to offer.”


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Notes for editors
Full text of the article is available to credentialed journalists upon request; contact Rhiannon Bugno at +1 214 648 0880 or Biol.Psych@utsouthwestern.edu. Journalists wishing to interview the authors may contact Dr. Silvia Paddock at +46 76 2805704 or sbuerven@gmail.com.

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The journal publishes novel results of original research which represent an important new lead or significant impact on the field, particularly those addressing genetic and environmental risk factors, neural circuitry and neurochemistry, and important new therapeutic approaches. Reviews and commentaries that focus on topics of current research and interest are also encouraged.

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