Glutamate system implicated in depression

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Genes involved in glutamatergic synaptic neurotransmission may play a role in major depressive disorder (MDD), according to a study published this week in *Translational Psychiatry*. Targeting the glutamate system for the treatment of MDD could help improve the modest rates of remission and substantial rates of recurrence associated with currently available antidepressants, the work suggests.

MDD is a disabling and frequently recurrent mood disorder characterized by low mood and loss of interest in pleasurable activities, which affects up to one person in six worldwide. As standard genome-wide association studies have failed to identify genes that are robustly associated with MDD, Jordan Smoller, lead author Phil Hyoun Lee and colleagues performed a gene-set-based analysis, which included prioritizing genes that previous studies have implicated in MDD and grouping biologically-related genetic variants that are involved in the same molecular function or cellular process. This approach is...
based on the indication that thousands of common genetic variants contribute to major psychiatric disorders, making each individual contribution weak and explaining why single variants or genes have not been found to be associated with MDD. Using this alternative analysis, the results suggest that genes involved in glutamatergic synaptic neurotransmission are, as a group, significantly associated with MDD.

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