

# Gene knockout may cheer up mice

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Removing the PKCI/HINT1 gene from mice has an anti-depressant-like and anxiolytic-like effect. Researchers writing in the open access journal *BMC Neuroscience* applied a battery of behavioral tests to the PKCI/HINT1 knockout animals, concluding that the deleted gene may have an important role in mood regulation.

Elisabeth Barbier and Jia Bei Wang, from the School of Pharmacy at the University of Maryland, USA, carried out the experiments to investigate the role of the gene in regulating mood function. Wang, the corresponding author of the paper, said, "The [knockout mice](#) displayed behaviors indicative of changes in mood function, such as increased perseverance and reduced anxiety in open spaces".

The causes of mood dysfunction, as seen in depressive and bipolar disorders, are still not fully understood. They are believed to be multifactorial, involving heredity, changes in [neurotransmitter](#) levels, altered neuro-endocrine function, and psychosocial factors. Speaking about these results, Wang said, "Although we don't yet know why the deletion of the gene altered the mood status of the mice, what we have learned about the importance of this gene in mood function and its involvement in human mental disorders is interesting.

The protein encoded by this gene could be a potential drug target for development of diagnostic or therapeutic agents that one day might be used for depression, bipolar or schizophrenia disorders. In addition, the knockout mice might be useful as a model to study mania, as there is no other [animal model](#) available yet.

More information: Anti-depressant and anxiolytic like behaviors in PKCI/HINT1 knockout mice associated with elevated plasma corticosterone level, Elisabeth Barbier and Jia Bei Wang, BMC Neuroscience (in press), [www.biomedcentral.com/bmcneurosci/](http://www.biomedcentral.com/bmcneurosci/)

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