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CREB-PER2 feedback loop mediates transitions of mania- and depression- like behaviors

Abstract:

Bipolar disorder (BD) is a severe psychiatric disorder characterized by alternating manic/hypomanic and depressive episodes, with rare reports on the mechanism of manic/depressive behavior switching. Our study revealed that knockdown of Per2 in the hippocampal CA1 induces mania-like behaviors in rats, in contrast, overexpression of Per2 in the same region results in depression-like behaviors, indicating that Per2 expression levels may mediate the manic/depressive phenotype switch. As pCREB is the transcription factor of Per2, we found that pCREB regulates the expression of Per2 and CREB-Per2 pathway forms a positive feedback loop which underlies the manic/depressive phase transformation.

Biography

Xin-Ling Wang, born in 1986, got her Bachelor's degree in Clinical Medicine in Xi'an Jiaotong University in 2010 and got her Master's degree in Psychiatry in Zhejiang University in 2013. In 2020, she was awarded her Ph.D. in Pathophysiology in University of Chinese Academy of Sciences. From August 2020 to Sep. 2023, she worked in Shandong University and studied into the pathogenesis of mood disorders. From Sep. 2023 to Aug. 2024, she worked in the same field in the Institute of Cellular and Integrative Neuroscience (INCI), CNRS in France as a postdoc researcher and studied into the link of clock genes and dopamine signaling in the development of mood disorder. From Sep. 2024 on, she has continued working on this project in the Medical Center- Freiburg University.