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Title (English)

Galanin induced activation of MAPK in primary hippocampal neuronal cultures

Title (Swedish)

Abstract

Galanin is a neuropeptide that is widely expressed in both the CNS and PNS, as in the endocrinal system. Galanin modulates a variety of physiological/pathological processes and has been implicated in disorders such as epilepsy, depression and Alzheimer's disease. Galanin act as a ligand on specific galanin receptors. To use galanin receptors as drug targets, the signaling pathways of each receptor has to be determined. Previous experiments conducted in galanin-receptor expressing cell-lines suggest intracellular signaling due to galanin stimulation via activation of mitogen activated protein kinase (MAPK) pathways. To examine this in a native system of galanin-receptor expressing cells, primary hippocampal neuronal cultures were treated with galanin, and western blots stained for the activation of Erk-proteins known to be involved in MAPK pathways. MAPK activation in primary hippocampal cultures was shown due to stimulation with galanin, an activation that peaked after 10 minutes, and could be blocked using the galanin receptor antagonist M40.

Keywords

Galanin, galanin receptors, G-proteins, GPCRs, MAPK, Erk, hippocampus

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