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Potassium Channels and Long-Term Potentiation Formation

Ali Jahanbazi Jahan Abad*, Sedigheh Ghasemi

Shefa Neuroscience Research Center, Khatam Alanbia Hospital Tehran, Iran

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Abstract

Long-term potentiation (LTP) is a form of activity-dependent plasticity that occurs during learning. Potassium channels are the most diverse group of all ion channels that related to synaptic plasticity. Small-conductance calcium-activated potassium channels (SKs) are found in hippocampal CA1 neurons and by inhibiting of postsynaptic potentials are involved in synaptic transmission impairment. Studies have been shown that blockage of SKs result in increase of LTP so that blocking of these channels increased LTP process and vice versa. Large-conductance calcium-activated potassium channels (BKs) also are found in hippocampal CA1 neurons and by influencing synaptic plasticity play an important role in learning and memory.

Keywords: Potassium Channels, Synaptic Plasticity, Long-Term Potentiation.

***Corresponding Author:** Ali Jahanbazi Jahan-Abad

E-mail: *a.jahanbazi65@yahoo.com*

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