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# **Hippocampal synaptic plasticity restoration and anti-apoptotic effect underlie berberine improvement of learning and memory in streptozotocin-diabetic rats**

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## **ABSTRACT**

Chronic diabetes mellitus initiates apoptosis and negatively affects synaptic plasticity in the hippocampus with ensuing impairments of learning and memory. Berberine, an isoquinoline alkaloid, exhibits anti-diabetic, antioxidant and nootropic effects. This study was conducted to evaluate the effect of berberine on hippocampal CA1 neuronal apoptosis, synaptic plasticity and learning and memory of streptozotocin (STZ)-diabetic rats. Long-term potentiation (LTP) in

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