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Evaluation of the Neuroprotective Effect of Galinsoga parviflora Leaves Extract in Memory-Impaired Rats

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Abstract: *This study investigated the potential of methanolic extract of Galinsoga parviflora leaves (MEGPL) to enhance learning and memory in a rat model of scopolamine-induced memory impairment. Spatial learning and memory were assessed using the Elevated Plus Maze (EPM) and Morris Water Maze (MWM) apparatus over a period of 21 days. Rats were divided into a normal control group, a negative control group (scopolamine-treated), and treatment groups receiving MEGPL at two different dosages (200 mg/kg and 400 mg/kg) and donepezil (5 mg/kg) as a standard drug, following scopolamine induction. In the EPM, transfer latency was significantly increased in the scopolamine group compared to the normal control. However, treatment with both doses of MEGPL and donepezil significantly reduced transfer latency. Similarly, in the MWM, the scopolamine group exhibited significantly increased escape latency and decreased retention time compared to the normal control. Treatment with both doses of MEGPL and donepezil significantly decreased escape latency and increased retention time. These findings suggest that the methanolic extract of Galinsoga parviflora leaves possesses learning and memory enhancing activity, likely due to the presence of flavonoids as major constituents.*

Keywords: Galinsoga parviflora, Memory Enhancement, Learning, Scopolamine, Elevated Plus Maze, Morris Water Maze, Flavonoids, Alzheimer's Disease

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