

Effect of *Albizia lebbeck* Linn. for Memory Enhancing Activity in Stressed Rats

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Abstract: *Objectives:* The present study investigates the potential neuroprotective effects of *Albizia lebbeck* Linn. on cognitive impairment in a rat model of stress-induced Alzheimer's disease.

Methods: Alzheimer was experimentally induced in sprague dawley female rats using a chronic restraint stress protocol, where animals were immobilized for 06 hours daily over a 28-day period. The cognitive effects of orally administered *Albizia lebbeck* Linn. methanolic extract were assessed. Both low and high doses of the authenticated herbal extract were evaluated for their anti-Alzheimer's efficacy using standard behavioral paradigms, including the Conditioned Avoidance Response (CAR), Elevated Plus Maze (EPM), and Morris Water Maze (MWM) tests.

Key Findings: The results of this study demonstrated that oral administration of *Albizia lebbeck* Linn. extract significantly ($P < 0.01$) reduced escape latency in the Conditioned Avoidance Response (CAR) test and decreased transfer latency in the Elevated Plus Maze (EPM), compared to the negative control group. Additionally, in the Morris Water Maze (MWM) test, treated animals exhibited a marked increase in retention time and a significant reduction in escape latency, indicating improved spatial learning and memory. These behavioral outcomes suggest a notable cognitive enhancement in the extract-treated, stress-induced dementia model.

Conclusions: In summary, *Albizia lebbeck* Linn. extract effectively ameliorated cognitive deficits and memory impairment in a rat model of stress-induced dementia, highlighting its potential as a therapeutic agent for the management of Alzheimer's disease...

Keywords: Alzheimer, *Albizia lebbeck* Linn., stress, memory, cognitive function, morris water maze (MWM), elevated plus maze (EPM)

