

Acetylcholine and memory-enhancing activity of *Ficus racemosa* bark

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ABSTRACT

Background Alzheimer's disease (AD) is a progressive neurodegenerative disorder resulting in dementia and enhancement of acetylcholine (Ach) levels in brain using acetylcholinesterase inhibitors is one of the most important approaches for the treatment of AD. Methods In this study, aqueous extract of *Ficus racemosa* Linn. (Moraceae) bark having anti-inflammatory, antioxidant, and anticholinesterase activity was evaluated for its ability to enhance Ach levels, and to ascertain its antidementia activity in rats. This work was carried out under the assumption that the *F. racemosa* extract may show combination of actions which could be beneficial in the treatment of AD, such as neuroprotection, attributed to antioxidant and anti-inflammatory property and may elevate levels of Ach like *Ficus hispida* extract reported earlier. Results Administration of the extract at two levels viz., 250 and 500 mg/kg significantly raised ($P \leq 0.05$) Ach levels in hippocampi of rats compared to control. The percentage enhancement in Ach levels was found to be 22% and 38%, respectively. Further, the extract at both dosage levels elicited significant reduction ($P \leq 0.05$) in transfer latency on elevated plus-maze, which was used as an exteroceptive behavioral model to evaluate memory in rats. Conclusion It is inferred that it would be worthwhile to explore the potential of *F. racemosa* in the management of Alzheimer disease.

KEYWORDS

Acetylcholine . Alzheimer disease . memory . plus-maze . transfer latency

REFERENCES