

Pharmacological Evaluation of *Crossandra infundibuliformis* Leaves Extract in the Treatment of Sleep Deprived Dementia in Rats

Raviraj D. Misale*, Prajwal D. Shrirao, Sakshi A. Jadhav, Deepak S. Mohale,
Abhijit V. Shrirao, A.V. Chandewar

Department of Pharmacology
Pataldhamal Wadhwani College of Pharmacy, Yavatmal
*corresponding author : ravirajmisale905@gmail.com

Abstract: The current study evaluated the effects of the Methanolic Extract of *Crossandra infundibuliformis* leaves (MECI) on cognitive impairment induced by sleep deprivation in Sprague-Dawley rats. Rats were subjected to 21 days of Rapid Eye Movement (REM) sleep deprivation using Modified Multiple Platform Method (MMPM). Subsequently, they were treated with MECI (200 and 400 mg/kg), Donepezil (5 mg/kg), or vehicle for 21 days. Cognitive function was assessed using the Elevated Plus Maze (EPM) and Morris Water Maze (MWM) apparatus. Sleep-deprived control rats exhibited significant learning and memory deficits. Treatment with MECI at both doses significantly improved cognitive performance, reducing transfer latency in the EPM and escape latency in the MWM, while increasing retention time in the MWM. Phytochemical screening of MECI revealed the presence of alkaloids, tannins, phenolic compounds, flavonoids, saponins, and terpenoids. These findings suggest that *Crossandra infundibuliformis* leaves ameliorate cognitive impairment associated with sleep deprivation.

Keywords: *Crossandra infundibuliformis*, Sleep deprived dementia, Alzheimer disease, Transfer latency, Escape latency, Retention Time

