

# Abstract Information

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<b>Thematic Area :</b>	Neuropharmacology, and Ethnopharmacology
<b>Title :</b>	Phoenix dactylifera (date palm) has Neuroprotective Activity on Mercury-triggered Neurodegenerative Changes in Wistar rats
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<b>Abstract :</b>	<p>Background: Heavy metals including mercury are established environmental neurotoxicants, reported to induce structural, biochemical and physiological alterations in different brain parts by eliciting oxidative stress which results in neurological deficits. Brain regions including cerebral M1 and M2, cerebellar cortex, and subcortical regions such as the hippocampus are critically associated with motor functions, learning and memory. Alterations or injury to these brain regions may lead to motor deficits, behavioural and cognitive changes that mimic neurological conditions including Parkinson's and Alzheimer's diseases. Phoenix dactylifera (date palm) has been scientifically demonstrated to possess various pharmacological activities.</p> <p>Objectives and Methods: This study empirically demonstrated the neuroprotective properties of certain solvent extract forms of P. dactylifera fruit pulp against mercury in different brain regions of Wistar rats using microscopic (histology and histochemistry), neurochemical (AChE activity and neurotrace elements: Mg, Zn, Cu and Fe)/ biochemical (oxidative stress biomarkers: MDA, SOD, CAT and GPx) and neurobehavioural (cognition, anxiety, sensori-motor and motor coordination) assessments. Rats obtained were categorized as control, mercury-treated and extract + mercury-treated groups. All administration was orally and lasted for two weeks.</p> <p>Results and Discussion: revealed pathological changes in the histoarchitectural features of</p>
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assessed brain regions, and alternations in biochemical and neurobehavioural parameters. However, the administration of extracts of *P. dactylifera* preserved the histology of the brain regions and ameliorated mercury-induced biochemical and neurobehavioural alterations. In conclusion, findings suggest that fruit pulp extracts of *P. dactylifera* may prove efficacious in ameliorating mercury-triggered alterations in different brain parts of Wistar rats. Neuroprotective properties could be attributed to the potent antioxidant activities of constituent phytochemicals. Thus, fruit pulp extracts of *P. dactylifera* are potential candidates for application in managing and treating mercury-induced neurodegenerative changes and related disease conditions.

**Keywords:** Histology, Neurochemistry, Neuroprotection, Neurobehaviour, Oxidative stress