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Neuroprotective effect of pet ether extract *of Ficus religiosa* (L.) leaves in 3-nitropropionic acid induced Huntington disease

Jitendra O. Bhangale*, Niyati S. Acharya, Sanjeev R. Acharya

Institute of Pharmacy, Nirma University, Ahmedabad, Gujarat, 382 481, India.

Abstract: Huntington's disease (HD) is a neurodegenerative disease that leads to progressive motor impairment, cognitive dysfunction and abnormal body movements. Systemic intraperitoneal administration of 3 nitropropionic acid (3 NP) inhibit oxidative phosphorylation and cause striatum neuronal degeneration as seen in HD. Nowadays modernization of lifestyle and none of the suitable drug treatment available for the management of HD, there is clear need to investigate alternative. Based on above, present study has been designed to explore the possible role of pet ether extract of *Ficus religiosa* (PEFRE) against 3 NP induced neurotoxicity. 14 days administration of 3 NP caused significant decreased motor in coordination (locomotor and rotarod performance) and significant cognitive impairment (elevated plus maze performance) as compared to vehicle treated animals. Biochemical analysis showed significant increase in lipid peroxidation and acetylcholineterase enzyme level; and depleted superoxide dismutase, catalase and reduced glutathione level. Daily administration of pet ether extract of *F. religiosa* (400 mg/kg) significantly improved motor and cognitive performance. *F. religiosa* significantly attenuated oxidative damage. Lower dose of PEFRE did not show significant activity. These finding suggest that neuroprotective action of *F. religiosa* could be used as an effective therapeutic agent in the management of Huntington's disease.

Keywords: Huntington's disease, Oxidative stress, *Ficus religiosa*, 3 Nitropropionic acid.

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