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Evaluation of memory restorative potential of forskolin in High Fat Diet (HFD) induced dementia in rats: Probable role of PXR receptors

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The present study was designed to investigate the potential of *Coleus forskohlii* plant extract- 'forskolin' in experimental dementia in Wistar rats. Dementia was induced by the administration of High Fat Diet (HFD) for 90 days. The effects on learning and memory were assessed using Morris Water Maze (MWM) test. A battery of biochemical tests such as brain Thiobarbituric Acid Reactive Species (TBARS), reduced Glutathione (GSH), Superoxide Dismutase (SOD), brain Acetylcholinesterase (AChE) activity, Myeloperoxidase (MPO) activity and total serum cholesterol levels were measured. Administration of high fat diet significantly impaired the learning and memory and also deleteriously affected the biochemical parameters. Administration of forskolin (20 mg/kg, p.o.) for 14 days significantly attenuated high fat diet induced memory deficits and the biochemical alterations. Combined administration of forskolin and Pregnane X Receptor (PXR) antagonist, ketoconazole (25 mg/kg, p.o.) significantly reduced the beneficial effects of forskolin in HFD treated rats. This study demonstrates that improvement of memory by forskolin administration may occur as an outcome of its antioxidative, anticholinergic, anti-inflammatory, hypolipidemic and amyloid lowering potential. The study also proposes the possible involvement of pregnane X receptors in the pathophysiology of experimental dementia.

Biography

Jaspreet Kaur is a Pharmacist from India who is pursuing her Master's degree in Pharmacology from Chandigarh College of Pharmacy, CGC (Punjab Technical University), India. She is a Research Scholar and doing her research work on Alzheimer's disease. She did her Bachelor of Pharmacy from Punjabi University, Patiala, India. Now, she's in second year of her Master's degree in Pharmacology and is working on root extract of *Coleus forskohlii* for the treatment of Alzheimer's type of dementia. She has attended a number of conferences in India related to her research work and now is looking forward to attend conference and to present poster of research done in Herbals summit-2015.

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