

Neuroprotective Effect of Hypericum Perforatum against Neurotoxicity and Alzheimer's Disease (Experimental Study in Mice)

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Abstract : Neurodegenerative diseases of the human brain comprise a variety of disorders that affect an increasing percentage of the population. Alzheimer's disease (AD) is a complex, multifactorial, heterogeneous mental illness, which is characterized by an age-dependent loss of memory and an impairment of multiple cognitive functions, but this 10 last years it concerns the population most and most young. Hypericum perforatum has traditionally been used as an external anti-inflammatory and healing remedy for the treatment of swellings, wounds and burns, diseases of the alimentary tract and psychological disorders. It is currently of great interest due to new and important therapeutic applications. In this study, the chemical composition of methanolic extract of Hypericum perforatum (HPM) was analysed by using high performance liquid chromatography - diode array detector (HPLC-DAD). The in vitro antioxidant activity of HPM was evaluated by using several antioxidant tests. HSM exhibits inhibitory capacity against posphatidylcholine liposome peroxidation, induced with iron and ascorbic acid, scavenge DPPH and superoxide radicals and act as reductants. The cytotoxic activity of HSM was also determined by using MTT cell viability assay on HeLa and NRK-52E cell lines. The in vivo activity studies in Swiss mice were determined by using behavioral, memory tests and histological study. According to tests results HPM that may be relevant to the treatment of cognitive disorders. The results of chemical analysis showed a hight level of hyperforin and quercitin that had an important antioxidant activity proved in vitro with the DPPH, anti LPO and SOD; this antioxidant activity was confirmed in vivo after the non-toxic results by means of improvement in behavioral and memory than the reducing shrunken in pyramidal cells of mice brains.

Keywords : AlCl₃, alzheimer, mice, neuroprotective, neurotoxicity, phytotherapy

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