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Original Article

HYPERICUM PERFORATUM IMPROVE MEMORY AND LEARNING IN ALZHEIMER'S MODEL: (EXPERIMENTAL STUDY IN MICE)

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ABSTRACT

Objective: The aim of this study, we based on protective and antioxidant efficiency of *Hypericum perforatum* that shows a wide range of beneficial effect *in vitro* and *in vivo*.

Methods: The *in vitro* antioxidant activity of the extract was assessed by using several antioxidant tests. The cytotoxic activity of *Hypericum perforatum* was also determined by using 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide viability assay on ordinary used cell lines. *In vivo* experiments in Swiss mice were determined by performing behavioral, memory tests and histological study. According to tests results, *H. perforatum* may be relevant to the treatment of cognitive disorders.

Results: The results of chemical analysis showed a hight level of hyperforin and quercitin that had an important antioxidant activity proved *in vitro* with the 2, 2-diphenyl-1-picrylhydrazyl, Anti-lactoperoxidase and superoxide dismutases; 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.

Conclusion: The present study suggests that *Hypericum perforatum* modulate the oxidative stress and be involved in the protective effect against oxidative damage and neurodegenerative diseases in mice.

Keywords: Neurotoxicity, Alzheimer's disease, Phytotherapy, *Hypericum perforatum*, Neuroprotective, Mice