

Study of phytochemical and anti-depressive effect of *Echinophoraplatyloba* essential oil in male mice

Zahra Lorigooini^{a*}, Tahereh Hosseinabadi^b, Mehrdad Shahrani^a, Najmeh Asgharzadeh^b, Fatemeh Ghasemi^b

Authors' Affiliations:

^aMedical Plants Research Center, Basic Health Sciences Institute, Shahrekord University of Medical Sciences, Shahrekord, Iran;

^bDepartment of Pharmacognosy, School of Pharmacy, ShahidBeheshti University of Medical Sciences, Tehran, Iran.

Abstract Presenter:

Zahra Lorigooini
PhD of Pharmacognosy, Assistant professor of Medical Plants Research Center, Basic Health Sciences Institute, Shahrekord University of Medical Sciences, Shahrekord, Iran.;
E-mail: gueini.z@skums.ac.ir

*correspondence:

Zahra Lorigooini
PhD of Pharmacognosy, Assistant professor of Medical Plants Research Center, Basic Health Sciences Institute, Shahrekord University of Medical Sciences, Shahrekord, Iran.;
E-mail: gueini.z@skums.ac.ir

Abstract

Introduction: Depression is one of the most common diseases. Studying the anti-depressant effect of herbs and comparing them with anti-depressant drugs, this result showed that not only some herbs such as saffron have anti-depressant effects comparing to anti-depressant drugs due to anti-oxidant properties; but also the side effects of these herbs are less than chemical anti-depressant drugs. According to previous studies, *E. platyloba* has anti-oxidant properties. The aim of this study was to evaluate the phytochemical properties and the antioxidant effect of *E. platyloba* essence and its effect on the improvement of depression symptoms.

Methods and Results: In this experimental study, 60 mice were divided into 6 groups including 10 subjects. Control group received only 1ml/kg of normal saline. Group two received 0.5 cc of reserpine. Groups (3-5) received 50, 75 and 100 mg/kg of *Echinophoraplatyloba* essence in addition to receiving 5 mg/kg of reserpine respectively and group six received fluoxetine in 10 mg/kg after receiving 0.5 mg/kg of reserpine. Then the rats were evaluated by forced swimming and tail suspension. Finally, biochemical tests such as measuring the antioxidant capacity of the serum and brain were done by FRAP method and measuring the level of malondialdehyde in plasma and brain. All information was analyzed by SPSS16 statistical software and the significance level was considered as $p < 0.05$. The main components of the essence were Myristicin (76.6%), α -Phellandren (5.9%) and Neocnidilide (4.4%). An increase in antioxidant capacity of serum and brain, a decrease in malondialdehyde level of serum and brain and a decrease in the duration of immobilization in the forced swimming test and hanging tail test were observed in the groups receiving essence which indicates the anti-depressant effect of this essence.

Conclusion: The results of this study indicate the anti-depressant effects of *E. platyloba*, which is justified by the main components of the essential oil composition of the herb. The essence of this herb, in addition to having anti-oxidant compounds that have anti-depressant properties, contains substances with similar function of neurotransmitters in the prevention and treatment of depression

Key words: Depression; Essential oil, *Echinophoraplatyloba*, Oxidative stress

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