

Antidepressant-like effect of ethanolic, chloroformic and aqueous extract of *Pimpinella anisum* L. in the forced swimming test in male mice

Z. Shahamat*, S. Abbasi Maleki, S. Mohammadi Motamed, M. Abbasi Maleki, H. Hanare Kheliany

Background and Aims: The aim of this study was to investigate the effect of *Pimpinella anisum* L. ethanolic, chloroformic and aqueous extract in forced swimming test (FST) in male mice.

Methods: Male NMRI mice weighting between 20-30g was used in this study. Different doses of *Pimpinella anisum* L. ethanolic, chloroformic and aqueous extracts (12.5, 25 and 100 mg/kg) administered intraperitoneally. Imipramine as a reference drug, was administered at a dose of 15mg/kg. Control group received normal saline (10ml/kg) whereas these drugs. Mice were individually forced to swim in an open cylindrical container; the total duration of immobility was recorded during 10-min period. A decrease in the duration of immobility is indicative of an antidepressant-like effect.

Results: Intraperitoneal (i.p.) administration of different doses of *Pimpinella anisum* L. ethanolic, chloroformic and aqueous extract ($F_{5, 42} = 4.75$, $P=0.002$) compared to control group reduced the duration immobility time significantly. The ethanolic extract at a dose of 25mg/kg rather than imipramine was reduced duration of immobility time.

Conclusions: The results obtained from the present study indicate the antidepressant effect of *Pimpinella anisum* L. ethanolic, chloroformic and aqueous extracts in FST and it seems that flavonoids of *Pimpinella anisum* L. with GABAergic (GABAA) activity have an antidepressant like-effect, but further studies need to be carried out to better understanding this mechanism.

Keywords: Antidepressant; *Pimpinella anisum* L; Ethanolic extract; GABAergic system; Mice