

## Pharmacologic effects of *Origanum vulgare* related to GABA<sub>A</sub> receptors

Y. Pahlavan<sup>1,\*</sup>, G. Sepehri<sup>2</sup>

<sup>1</sup>Ardabil University of Medical Sciences, Ardabil, Iran

<sup>2</sup>Pharmacology Department, Neuroscience Research Center, Kerman University of Medical Sciences, Kerman, Iran

**Background and Aims:** Today role of herbal plants in treatment of disease is one of important controversies in medicinal associations. Oregano oil has a wide range of traditional uses including the treatment of various digestive upsets, asthma, colds, flu, bronchitis, headaches, rheumatism, muscular pain, insect bites, and warts (naghibi2005). The objective of this study is to evaluate possible involvement of the GABA<sub>A</sub> system in analgesic effect of aqueous extract of *Origanum Vulgare* in male rats.

**Methods:** The rats were anaesthetized by ketamine (80mg /kg) and xylazine (10mg /kg) and the cannula was inserted into left ventricle using stereotaxic apparatus (Paxinos, 2005). after 5-7 days dose of extract determined 3µg/rat that was administered intraventricularly. Control group given saline 0.5ml.i.p/ saline 5µl, i.c.v or ORG 3µg/rat,i.c.v. GABA<sub>A</sub> receptor agonist(Muscimol,1mg/kg,i.p), GABA<sub>A</sub> receptor antagonist(Bicuculline 5mg/kg,i.p). The aqueous extract of ORG was administered 20 min after drug /vehicle injection. The latency response of rats recorded by Tail-Flick test.

**Results:** Intracerebroventricular administration of the ORG extract resulted in significant and dose-dependent increase in the latency response in the Tail-Flick test) p< 0.001). Gaba<sub>A</sub> receptors can contributed in this analgesic effects. Analgesic effect of this plant has been probably related to oxygenated compounds such as Borneol, one of compounds of that. Borneol is a two circulated monotrophen that have analgesic effect and increasing effect on gabaergic receptors.

**Conclusion:** The results of this study shown that analgesic effect of ORG maybe mediated by Gaba receptors.

**Keywords:** *Origanum Vulgare*; GABA<sub>A</sub>; Pain