Original Paper

Effect of Ducrosia anethifolia (Dc.) Boiss essential oil on spatial learning and memory in rats

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Abstract

Background and Objective: Ducrosia anethifolia (Dc.) is a medicinal odor plant contains CNS effective compounds which has been used in Iranian traditional medicine. This study was done to determine the effect of Ducrosia anethifolia (Dc.) Boiss essential oil on spatial learning and memory in adult male rats.

Methods: In this experimental study, 35 wistar adult male rats were randomly allocated into the five groups (n=7) including: control, sham (injected vehicle) and Ducrosia anethifolia (Dc.) Boiss essential oil groups 0.125, 0.25 and 0.5ml/kg/bw, intraperitonally during four days. Morris water maze test was used to assess learning and memory.

Results: Ducrosia anethifolia (Dc.) Boiss essential oil (0.5 ml/kg/bw) was significantly increased escape latency in the second and third and forth (P<0.05) days of acquisition test in compare to control group. In addition latency to find the hidden platform was significantly decreased with 0.25 essential oil in all days except first day (P<0.05) and in essential oil- treated rats at 0.125 ml/kg/bw in the second and third days (P<0.05) in compare to the control group. Time spent and distance travelled in target zone were significantly increased in Ducrosia anethifolia (Dc.) Boiss essential oil -treated rats (0.5ml/kg/bw) in compare to control group (P<0.05).

Conclusion: Intraperental administration of the Ducrosia anethifolia (Dc.) Boiss essential oil at doses of 0.5 and 0.25 ml/kg/bw during four days can improves spatial learning and memory in adult male rats.

Keywords: Ducrosia anethifolia (Dc.) Boiss, Learning, Memory, Morris water maze, Rat

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