Short-term memory alterations by *Ocimum Americanum* administration in rats

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**Abstract**

**Introduction:** Species of the Lamiaceae family, such as *Salvia* spp. have been indicated for the treatment of Alzheimer's disease. *Ocimum americanum*, known as basil, is traditionally used as anti-inflammatory and diuretic. Previous studies in our laboratory showed that ethanol extract of *Ocimum americanum* (EEOA) presents antioxidant action and inhibited the *in vitro* activity of acetylcholinesterase besides that, improved memory parameters after supplementation for 15 days in mice. The aim of this study was evaluate the effect of the acute administration of EEOA in rats on short-term memory.

**Experimental:** Male Wistar rats (3 months) were divided in four groups (n=10-12; saline, solvent, ethanol extract 100 mg/kg and 300 mg/kg). To evaluate the short-term memory, the animals were submitted to inhibitory avoidance. On the training trial, rats were placed on the platform and their latency to step down on the grid with all four paws was measured. Immediately after stepping down on the grid, rats received a pulsed footshock of 0.5 mA for 2s and were removed from the apparatus after footshock. After the training trial, rats received the different treatments by gavage (p.o.). In a retention test trial carried out 90 minutes after training (short-term retention), no footshock was given. The step-down latency (maximum 180s) was used as a measure of inhibitory avoidance retention.

**Results:** There was no significant difference in the test trial on inhibitory avoidance between groups (saline, median 134.5, 25%/75%-percentiles 38.75-180; DMSO, median 124, 25%/75%-percentiles 69-180; ethanol extract 100 mg/kg, median 180, 25%/75%-percentiles 82-180; ethanol extract 300 mg/kg, median 109.5, 25%/75%-percentiles 32-153.8; Kruskal Wallis followed by Dunn's, KW=2.008; p=0.5707).

**Conclusion:** Our findings demonstrate that acute administration of EEOA, at tested doses, did not alter the short-term memory evaluated in the inhibitory avoidance. However more studies are needed, including assessment of effects of chronic treatment with EEOA on learning and memory.

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