

MEETING ABSTRACT

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# Evaluating the effect of aquatic extraction of *Cannabis sativa* seed on spatial memory consolidation in rats

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## Background

The existence of an endocannabinoid system in the central nervous system that consists of G protein-coupled CB1 cannabinoid receptors and endocannabinoids, including arachidonylethanolamide and 2-arachidonoyl-glycerol, has gained general acceptance. Recent reports suggest that this system may serve several physiological functions including learning and memory functions

## Materials and methods

40 male wistar rats (3-4 month, 320-260 g) were completely divided into 4 experimental groups and control group. *Cannabis sativa* seed was extracted with Soxhlet apparatus. To test spatial memory, Morris water maze (7 days, 4 trails) was used. Experimental groups with 50 mg.kg<sup>-1</sup>, 100 mg.kg<sup>-1</sup>, 150 mg.kg<sup>-1</sup>, 210 mg.kg<sup>-1</sup> were injected in the peritoneal (IP) orderly and after one hour of injection spatial memory was done.

## Results

The result show that experimental groups (50 mg.kg<sup>-1</sup>, 100 mg.kg<sup>-1</sup>, 150 mg.kg<sup>-1</sup> doses), for learning time have significant level deduction in the comparison of control group ( $p < 0.05$ ), but experimental group with 210 mg.kg<sup>-1</sup> dose has not significant level in the comparison of control group ( $p < 0.05$ ).

## Conclusions

We demonstrate tetrahydrocannabinol can change brain function as learning and memory processes and probably was done with Depolarization-Induced Suppression

of excitatory (DSE) mechanism in the CA1 area of Hippocamp that with neurotransmitter regulation cause to neuroplasticity.

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