

عنوان مقاله:

Influence of Intracerebral Administration of L-Arginine in Dorsal Hippocampus (CA1) on WIN55, 212-2 Induced State-Dependent Memory

محل انتشار:

مجله علمی پژوهشی دانشگاه علوم پزشکی زنجان، دوره 18، شماره 70 (سال: 1388)

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خلاصه مقاله:

Background and Objective: Cannabinoids are a class of psychoactive compounds that produce a wide array of effects in a large number of species. In the present study, the effects of bilateral intra-CA1 injections of L-arginine on WIN55, 212-2 induced state-dependent memory of passive avoidance task was examined in mice. **Materials and Methods:** One-trial step-down paradigm was used for the assessment of memory retention in adult male NMRI mice. **Results:** Post-training intra-CA1 administration of cannabinoid receptor agonist, WIN55, 212-2 (0.5 and 1 µg/mouse), decreased the memory retrieval. The memory impairment induced by post-training administration of WIN55, 212-2 (1 µg/mouse) was restored by pre-test administration of the same dose of the drug, showing the state-dependent memory of WIN55, 212-2. Single intra-CA1 administration of L-arginine (0.3, 1 and 3 µg/mouse) 5 min pre-test could not alter the memory retrieval. On the other hand, in the animals in which retrieval was impaired due to post-training administration of WIN55, 212-2 (1 µg/mouse), pre-test intra-CA1 administration of L-arginine (1 and 3 µg/mouse), 24 hr after training restored memory retrieval. Furthermore, in the animals under influence of post-training administration of WIN55, 212-2 (1 µg/mouse), pre-test co-administration of non-effective doses of WIN55, 212-2 and L-arginine, increased the restoration of memory by the pre-test WIN55, 212-2. **Conclusion:** The findings of the present study suggest that NO system of dorsal hippocampus may play an important role in Win55,212-2-induced amnesia and WIN55,212-2 state-dependent memory.

کلمات کلیدی:

Key words: WIN55, 212-2, State-dependent memory, Step-down passive avoidance task, L-arginine, NO, Mice

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