

Effects of single daily khat (*Catha edulis*) extract on spatial learning and memory

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Abstract:

This study investigated the effects of fresh khat extract on learning and memory in CBA mice. A total of 20 male CBA mice, weighing 20–30 g, 5–6 weeks old were administered intraperitoneally with a single daily dose of khat extract for 5 days. The animals were divided into four groups, each comprising five animals. The first three groups were administered three doses (40, 120 and 360 mg/kg body weight) of khat extract, respectively. The last group served as controls and was administered with 0.5 ml normal saline intraperitoneally. The animals were then subjected to Morris water maze (MWM) task performance. Moderate and high doses (120 and 360 mg/kg body weight) of khat extract significantly impaired ($P < 0.05$) while low dose (40 mg/kg body weight) of khat extract did not have a significant effect on CBA mice acquisition learning. The high dose of khat extract significantly ($P < 0.05$) improved while moderate and low doses impaired accuracy for spatial memory of the platform location. This study has shown that khat extract has selective effect on spatial learning and memory, with low dose having no effect on learning but impairing memory, whereas high dose impairs learning but improves memory.