THE EFFECTS OF GRAPE SEED AND GRAPE POMACE EXTRACTS ON SPATIAL MEMORY IMPAIRMENT INDUCED BY HYOSCINE IN MICE

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The cholinergic system and its receptors play a role in memory function. Hyoscine, as an anticholinergic agent causes dysfunction to the spatial memory and learning. The present study aims to evaluate the effects of two different extracts of grape seed (25, 50, 75 mg/kg) and grape pomace (25, 50, 100 mg/kg) on the spatial memory impairment induced by hyoscine (1 mg/kg) in male mice.

Spatial memory was evaluated using Morris water maze test. Each animal received three trials per day for 4 days and day 5 was the probe day (without platform). Speed, distance and time spent in each quadrant were recorded. The percentage of time spending in the target quadrant (Q2) on the probe day was used as an index of memory. The extracts were injected 5 min prior to hyoscine which was injected 20 min before the trial.

Pretreatment with different doses of grape seed extract and grape pomace extract 5 min prior to hyoscine prevented the memory impairment effects of hyoscine, and the time for searching platform in Q2 was significantly increased (p< 0.05), compared to that of hyoscine treated group. Extracts alone did not show any effects on the memory.

Grape seed in doses up to 75 mg/kg and grape pomace in doses up to 100 mg /kg extract in doses that did not show any effect on the memory and motor activities could prevent memory impairment effects of hyoscine.