Influence of long-term administration of rutin on spatial memory as well as the concentration of brain neurotransmitters in aged rats

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Abstract:
Background: The present study was designed to investigate the behavioral and neurochemical effects of long-term oral rutin administration to old male WAG rats (100 and 200 mg/kg b.w./day). Rutin is a well-known dietary flavonol glycoside with antioxidant and anti-inflammatory properties.

Methods: First, spatial memory was assessed in the water maze and then the levels of neurotransmitters in selected brain regions were estimated.

Results: There was enhanced spatial memory in aged rats pretreated with the smaller dose of rutin in the probe trial of the water maze, nevertheless, augmented levels of norepinephrine in the hippocampi of these animals were not correlated with improved spatial memory. The increased dopamine levels in the hypothalami of the same group of animals may suggest effects other than behavioral.

Conclusion: Long-term rutin pre-treatment may cause behavioral and neurochemical changes in aged WAG male rats.

Keywords: rutin, aged rats, spatial memory, water maze, dopamine, norepinephrine