The cognitive enhancer T-588 partially compensates the motor associative learning impairments induced by scopolamine injection in mice.

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The authors studied the effects of T-588 on scopolamine-induced memory impairments in the acquisition of a classical eyelink conditioning in behaving adult mice. Mice injected with 0.3 mg/kg of scopolamine showed a marked deficit, compared with nontreated mice, in the acquisition of classical eyelink conditioning using a trace paradigm. Coadministration of T-588 (0.05% wt/vol, in water) with scopolamine (0.3 mg/kg) significantly prevented this deficit in associative learning. To further assess the effects of T-588 on motor coordination and the cognitive deficits induced by scopolamine, the authors compared adult controls or scopolamine-treated mice in different behavioral tasks: rotarod, object recognition, passive avoidance, and prepulse inhibition. In all of these tasks, the authors found a significant impairment in the motor or cognitive abilities in scopolamine-injected mice, compared with controls. In addition, the coadministration of T-588 with scopolamine restored deficits induced by scopolamine alone. Importantly, the administration of T-588 alone did not evoke any change compared with values obtained for controls. These results suggest that T-588 could be used as a pharmacological agent to improve motor and associative learning disorders.

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