

Effect of zerumbone on scopolamine-induced memory impairment and anxiety-like behaviours in rats

ABSTRACT

Introduction: We investigated the effects of zerumbone (1 and 10 mg/kg) against hyperactivity, anxiety and memory impairment in scopolamine-induced dementia in Sprague-Dawley rats. **Methods:** Open field tests, elevated plus maze and Morris water maze were performed to assess general locomotor activity, anxiety-like behaviours and learning and memory processes respectively in rats pre treated with scopolamine. **Results:** Scopolamine-treated rats showed high total activity, stereotype, and total distance travelled in the open field arena, reduced number of entries to open arms, decreased the percentage of time spent in open arms and higher escape latency time in the Morris water maze test. Interestingly, single administration of zerumbone (1 and 10 mg/kg) reversed the hyperactivity, anxiety-like behaviours, and learning impairment effects of scopolamine in the three experimental model studied respectively. **Discussion:** Our findings demonstrated that the scopolamine-induced impairment of learning and memory was reversed by the administration of zerumbone. As a conclusion, our findings presented the positive effects of zerumbone on dementia-like behaviours in the animal model used and could possibly contribute for future research to manage hyperactivity, anxiety, and learning disabilities.

Keyword: Dementia; Alzheimer's disease; Scopolamine; Learning and memory deficit; Anxiety; Hyperactivity; Zerumbone

