

ABSTRACT

The most contributed neurodegenerative disease in dementia, Alzheimer's disease (AD), has affected more than 26 million people in 2006 and is predicted to increase in quadruplicate in 2050. The etiology of the disease remained unclear until now, but it is suggested to be arisen by multiple factors. AD patients have experienced impaired cholinergic activities related to memory and cognitive function. The cholinergic hypothesis is one of the theories explained in AD pathogenesis and becomes the target for therapeutic agents, like donepezil. Nevertheless, the available therapeutic agents are unable to stop or prevent the disease. Previous studies of the well-known herbs *Coriander sativum L.* (coriander) suggested the biological activities within the leaves are able to provide anti-Alzheimer's activity. In the present study, an in-vivo study with a scopolamine-induced memory impairment mice model is used to assess the anti-Alzheimer's activity within various coriander leaves extract concentration (200, 400, 600 mg/kg) given in 10 days. The anti-Alzheimer's activity is evaluated through novel object recognition (NOR) and gene expression of CREB1 and BDNF. Novelty preference was shown in mice treated with all concentrations of coriander leaves extract after induced memory impairment by scopolamine, where the administration of 200 mg/kg, 400 mg/kg, and 600 mg/kg of the extract resulted in a preference of 57.03% ($p \leq 0.05$; against scopolamine group), 58.03%, and 59.06% ($p \leq 0.01$; against scopolamine group), respectively. However, the gene expression of BDNF and CREB1 was unable to be determined due to technical challenges during the study.

Keywords: Alzheimer's Disease; Novel Object Recognition (NOR); *Coriandrum sativum L.*; anti-Alzheimer's activity