ABSTRACT

Indonesia is one of the countries with the highest biodiversity in the world. Despite its huge potential to develop medicinal plants into herbal products, the utilization of medicinal plants in Indonesia is only up to 5%. Alzheimer's disease (AD) accounts for up to 70% of dementia cases, affecting over 24 million people worldwide. As the average life expectancy of humans increases, more than 5 million new AD cases are rising each year. Hence, further research is necessary to establish the safety and efficacy of herbal medicines. This study was aimed to evaluate the anti-Alzheimer's activity of *C. sativum* leaves extract in mice model of Alzheimer's using Y-maze test and thiobarbituric acid reactive substance (TBARS) assay, where an antagonist of acetylcholine receptors, scopolamine, was used to induce memory impairment. It was found that 600 mg/kg *C. sativum* extract significantly ameliorated scopolamine-induced cognitive deficit, as demonstrated by an increased percentage of spontaneous alternation in Y-maze (62.21 ± 8.05%) and substantial reduction of malondialdehyde (MDA) level in mice hippocampal brain tissue (1308.43 ± 145.8 nmol/g), which was comparable to 4 mg/kg donepezil with 64.5 ± 4.94% spontaneous alternation and 1693.35 ± 90.20 nmol/g MDA. Collectively, this study displayed the neuroprotective effect of *C. sativum* in the scopolamine model of Alzheimer's by improving short-term spatial working memory and reducing the level of lipid peroxidation. The establishment of *C. sativum* leaves extract as herbal medicine to maintain neurological function can prevent the development of AD, thus providing benefits for the Indonesian community.

Keywords: Alzheimer's Disease; *Coriandrum sativum*; Malondialdehyde; TBARS assay; Y-maze.