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THE NEUROPROTECTIVE AND COGNITIVE ENHANCING EFFECTS OF THE NOVEL SUPPLEMENT CONTAINING VISCERAL ORGANS EXTRACT OF ABALONE

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Neurodegeneration and cognitive dysfunction are regarded as the important health problems in this decade and the supplements targeting at both conditions are required. Oxidative stress and the disturbances of neurotransmitters contribute the crucial roles on neurodegeneration and memory impairment. Since visceral organs of abalone are rich in many active compounds which are crucial for brain functions and possesses antioxidant, we hypothesized that the supplement containing visceral organs extract should protect against age-related neurodegeneration and cognitive dysfunction. Therefore, the supplement containing the extract of visceral organs of abalone at doses of 1.10 and 100 mg/kg were orally given 28 days before and 7 days after the administration of cholinotoxin, AF64A, via intracerebroventricular route. At the end of study, memory performance, neurons and cholinergic neurons densities, oxidative stress status and the activities of acetylcholinesterase (AChE) and monoamine oxidase (MAO) in hippocampus were determined. The results showed that the supplement at all doses used in this study could enhance memory and the densities of both neurons and cholinergic neurons but decreased oxidative stress status and the activities of both AChE and MAO in hippocampus. Taken all data together, the novel supplement containing the extract of visceral organs of abalone could protect against neurodegeneration and cognitive dysfunction. The possible underlying mechanism might occur partly via the improved cholinergic function and oxidative stress status. The improvement of monoaminergic system might also play a role on the enhanced cognitive function. However, subchronic toxicity and clinical trial studies are still essential to confirm these benefits.

Biography

W Thukham-mee has been pursuing his PhD since 2012 from Khon Kaen University. She is the staff and serve of the secretary of Integrative Complementary Alternative Medicine Research and Development Center and Department of Physiology, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand. She has published more than 10 papers in reputed journals and has many petty patents.

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