

2<sup>nd</sup> Global Summit on

# Herbals & Natural Remedies

October 17-19, 2016 Kuala Lumpur, Malaysia

## Cognitive enhancing effect of *Euonymus alatus* extract against scopolamine-induced memory impairment in mice

Woo Seung Yang, Jin Bae Weon, Gahee Ryu and Choong Je Ma

<sup>1</sup>Kangwon National University, Korea

*Euonymus alatus* is one of the traditional medicinal plants to prevent the development of atherosclerosis, treat dysmenorrhea, regulate blood circulation, relieve pain and eliminate stagnant blood. This study was designed to investigate effect of *Euonymus alatus* extract on scopolamine-induced memory deficit in mice. We performed two behavioral tests, Morris water maze test and passive avoidance test and three concentrations, 50, 100 and 200 mg/kg of *Euonymus alatus* extract were administered to mice. We also investigated acetylcholinesterase (AChE) activity and brain-derived neurotrophic factor (BDNF) expression and cAMP response element-binding protein (CREB) phosphorylation in hippocampus of mouse to determine a possible mechanism for the cognitive enhancing effect. The results revealed that *Euonymus alatus* extract attenuated the memory impairment induced by scopolamine on Morris water maze test and passive avoidance test. *Euonymus alatus* extract also inhibited AChE levels and increased the level of BDNF expression and CREB phosphorylation in the hippocampus. In conclusion, these results indicated that *Euonymus alatus* extract improved scopolamine-induced memory deficit by AChE activity inhibition and upregulation of BDNF expression and CREB phosphorylation. *Euonymus alatus* extract may have potential therapeutic applications for the prevention or treatment of Alzheimer's disease.

### Biography

Woo Seung Yang has done his Master's degree in Department of Medical Biomaterials Engineering, College of Biomedical Sciences, Kangwon National University, Korea. He has done his Major in Pharmacognosy.

diddntmd11@gmail.com

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