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**The ameliorating effects of *Eclipta prostrata* L. and its active compound, Eclalbasaponin II, against memory impairment**Bokyung Koo<sup>1</sup>, Won Yong Jung<sup>1,2</sup>, Yulan Liao<sup>1</sup>, Jiabao Zhang<sup>1</sup>, Yubeen Kwon<sup>1</sup>, Hojung Bae<sup>1</sup> and Jong Hoon Ryu<sup>1</sup><sup>1</sup>Kyung Hee University, Republic of Korea<sup>2</sup>Kyung Hee University Medical Center, Republic of Korea

*Eclipta prostrata* L. (Asteraceae) has been used as whole body nourishment and nervine tonic in traditional herbal medicine. In the present study, we investigated the effect of *E. prostrata* on cognitive function. A single administration of *E. prostrata* ameliorated scopolamine- induced memory impairment in the passive avoidance, the Y-maze and the Morris water maze tasks. Moreover, hippocampal long-term potentiation and Western blot analyses were also employed to confirm the effects of *E. prostrata* on the levels of memory-related synaptic plasticity and biochemical parameters. Next, we conducted to isolate active compound from the ethanolic extract of *E. prostrata* by activity-guided fractionation method and found the Eclalbasaponin II, an oleanane-type triterpenoid saponin. We also conducted such behavior tasks to confirm the effect of Eclalbasaponin II on cognitive function. Similar to the extract of *E. prostrata*, Eclalbasaponin II (10 or 20 mg/kg, p.o.) significantly ameliorated the cognitive dysfunction induced by scopolamine in the above behavioral studies. Western blot analysis revealed Eclalbasaponin II increased the phosphorylation levels of Akt and GSK-3 $\beta$  in the hippocampus. These results suggest that *E. prostrata* and Eclalbasaponin II would be useful agents against cognitive dysfunction observed in the neurodegenerative disease such as Alzheimer's disease.

**Biography**

Bokyung Koo is currently working at the Department of Life and Nanopharmaceutical Sciences at Kyung Hee University Republic of Korea.

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