

## Abstract

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**Project Code :** MRG5980032

**Project Title :** Effects of *Spilanthes acmella* Murr. on chronic restraint stress-induced memory deficits and neurons degeneration in rats.

**Investigator :** Asst.Prof. Wilasinee Suwanjang, Ph.D.

**E-mail Address :** wilasinee.suw@mahidol.ac.th

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### **Abstract:**

*Spilanthes acmella* Murr., a well-known Thai traditional medicine, has been used for treatment of toothache, rheumatism and fever. Diverse pharmacological activities of *S. acmella* Murr. has been reported. In the present study antioxidative and neuroprotective effects of *S. acmella* Murr. extracts and bioactive scopoletin, vanillic acid and trans-ferulic acid found in the aerial parts of this plant species have been described. Protective effect of *S. acmella* Murr. extracts and bioactive compounds on chronic stress induced cognitive impairment was investigated. The present study aimed to explore the molecular signals for mitochondrial dynamics and investigate the beneficial effects of *S.acmella* Murr. on mitochondrial dynamics in response to chronic restraint stress. The results demonstrated that *S.acmella* Murr. increased the expression of mitochondrial fission protein and induced HSP60, MnSOD and ATPsynthase in the hippocampus of the chronic restraint stress rats. In addition, *S.acmella* Murr. improved the spatial learning and memory function in morris water maze test (MWM) and reversed depressive symptoms in forced swim test (FST). Our findings suggested that *S. acmella* Murr. is a potential strategy for the treatment of chronic stress, and the possible mechanism is associated with the alleviation of neuronal injury and maintain the mitochondrial function.

**Keywords :** *Spilanthes acmella* Murr., chronic stress, cognitive function, mitochondrial, antioxidant