

Trigonella foenum-graecum Seeds Extract as Therapeutic Candidate for Treatment of Alzheimer's Disease

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Abstract : Intro: Trigonella foenum-graecum (Fenugreek), from Fabaceae family is a well-known plant traditionally used as food and medicine. Many pharmacological effects of Trigonella foenum-graecum seeds extract (TF extract) were evaluated such as anti-diabetic, anti-tumor and anti-dementia effects using in vivo models. Regarding the anti-dementia effects of TF extract, diabetic rats, aluminum chloride-induced amnesia rats and scopolamine-injected mice were used previously for evaluation, which are not well established as Alzheimer's disease models. In addition, those previous studies, active constituents in TF extract for memory function were not identified. Method: This study aimed to clarify the effect of TF extract on Alzheimer's disease model, 5XFAD mouse that overexpresses mutated APP and PS1 genes and determine the major active constituent in the brain after oral intake of TF extract. Results: Trigonelline was detected in the cerebral cortex of 5XFAD mice after 24 hours of oral administration of TF extract by LC-MS/MS. Oral administration of TF extract for 17 days improved object location memory in 5XFAD mice. Conclusion: These results suggest that TF extract and its active constituents could be an expected therapeutic candidate for Alzheimer's disease.

Keywords : Alzheimer's disease, LC-MS/MS, memory recovery, Trigonella foenum-graecum Seeds, 5XFAD mice

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