

Anti-stress effects of *Gastrodia elata* on catecholamine pathway in rat

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Abstract

Enzymes involved in catecholamine synthesis are present in the highest concentration in the adrenal medulla, however they were found also in other, mainly nervous tissues.

Increased transcription of genes for catecholamine biosynthetic enzymes is an important mechanism to increase the capacity for epineprine/norepinephrine biosynthesis with stress. *Gastrodia elata*(Chinese name: Tienma), are very important Chinese herbal medicines used for the medical treatment of headaches, migraine, dizziness, epilepsy, rheumatism, neuralgia, paralysis and other neuralgic and nervous disorders. Immobilize stressed rat markedly increased tyrosine hydroxylase (TH) mRNA and dopamine- β -hydroxylase (DBH) mRNA transcription level more than control group. But treated *Gastrodia elata* extracts in immobilized stressed rat slightly increased TH mRNA and DBH mRNA transcription level more than normal group. In addition, we are obtained identical results in PC12 cell line. Decrease of transcription level of TH mRNA and DBH mRNA is indicating that *Gastrodia elata* have a anti-stress effects which decrease the transcription level of TH and DBH mRNA on catecholamine biosynthesis pathway.