

Medicinal plants used in the treatment of addiction potentiate K⁺-stimulated endogenous dopamine release from rat striatal slices

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Natural medicines such as Thunbergiaceae (*Thunbergia laurifolia* Linn., TH) and Symplocaceae (*Simplocos racemosa* Roxb., SY) have been used to treat patients with drug addiction without scientific support for their mechanism of action. Clinically, drugs such as amphetamine (AM) activate a reward mechanism in humans (1, 2) therefore any medicines which affect the neurotransmission involved may alter drugs effects. The present study aims to investigate the effect of these medicinal plants on mesolimbic dopaminergic transmission.

The effect of crude water extracts (1 g/10 ml) of TH and SY on K⁺ (20 mM) stimulated dopamine (DA) release were compared with AM (10⁻⁴ M) using a semi superfusion method (3) with HPLC with electrochemical detector measurement of endogenous DA. AM, TH and SY significantly increased K⁺-stimulated DA release (P<0.001,

P<0.005 and P<0.05, respectively). The effect of TH was potentiated in the presence of AM (P<0.01). The results indicated that TH and SY stimulated DA release in the same manner as AM. It remains to be determined whether the effect of these extracts on DA function is important in their therapeutic use in the treatment of drug addiction.

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Reference

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