

## Anticonvulsant effect of Citrus bigaradia Duh. leaves extracts in mice

Hosseinzadeh, H., Sayadi, S.K.M., Taghiabadi, E., Razavi, B.M.

Department of Pharmacodynamics and Toxicology, School of Pharmacy, Mashhad University of Medical Sciences, 9176-91770, Mashhad, IR, Iran

[View references \(3\)](#)

### Abstract

Citrus bigaradia Duh. is used in traditional medicine for its anticonvulsant property. To confirm the traditional use of this plant, the anticonvulsant effects of the aqueous and ethanolic extracts of C. bigaradia leaves were studied in mice. The anticonvulsant effect of both extracts of C. bigaradia, was investigated using pentylenetetrazole (PTZ) and maximal electroshock (MES) induced seizure models. Also, phytochemical screening of both extracts was performed. LD<sub>50</sub> values of the aqueous and ethanolic extracts were 0.74 g/kg and 1.09 g/kg and the maximum non-fatal doses were 3.0 g/kg and 3 g/kg, respectively. In the PTZ test, the i.p. injection of aqueous extract (0.30, 1.5, 2.50 and 3.0g/Kg) and ethanolic extract (0.3, 1.5, 2.5 and 3 g/Kg) delayed the onset of tonic convulsions. The protective effect against lethality was 70% and 70% in the highest dose of both extracts, respectively. In the MES test, both extracts showed mild to moderate anticonvulsant activity. The effects of both extracts were dose dependent and aqueous extract was more effective than ethanolic extract. The phytochemical analysis showed the presence of flavonoids, alkaloids, saponins and tannins in the aqueous extract and tannins in the ethanolic extract. The present study indicated that C. bigaradia has anticonvulsant activity in PTZ-induced seizures, in mice, more than in maximal electroshock (MES) model. It is concluded that C. bigaradia may be useful in petit mal and grand mal epilepsy.

### Author keywords

Anticonvulsant; Citrus aurantium; Citrus bigaradia; Maximal electroshock seizure (MES) test; Pentylenetetrazole (PTZ) induced seizure

### Indexed Keywords

**EMTREE drug terms:** alcohol; alkaloid; anticonvulsive agent; Citrus bigaradia extract; flavonoid; pentetrazole; plant extract; saponin; tannin derivative; unclassified drug

**EMTREE medical terms:** animal experiment; anticonvulsant activity; aqueous solution; article; Citrus bigaradia; citrus fruit; controlled study; drug screening; electric shock; female; grand mal epilepsy; LD<sub>50</sub>; lethality; male; mouse; nonhuman; petit mal; phytochemistry; plant leaf; tonic seizure

**Chemicals and CAS Registry Numbers:** alcohol, 64-17-0; pentetrazole, 04-90-0; saponin, 8047-10-2

ISSN: 1827862 • Source Type: Journal Original language: English

Document Type: Article