Ethnobotanical Leaflets 13: 213-14. 2009.

Pharmacological Activities of *Mentha piperita*- Mini Review

S. Meenatchisundaram[1]*, G. Parameswari[1], Diana Sunny[1], M. Brinda[2], T. Subbraj[1], T. Suganya[1] and A. Michael[1]

[1]Department of Microbiology, PSG College of Arts and Science, Coimbatore, India
[2]Department of Microbiology, GRD College of Science, Coimbatore, India
*Corresponding author: Dr.S.Meenatchisundaram, E-Mail: drmscbe@gmail.com

Issued 30 January 2009

Peppermint (*Mentha × piperita*) is a hybrid mint, a cross between watermint (*Mentha aquatica*) and spearmint (*Mentha spicata*). The plant is indigenous in Europe and now widespread in cultivation throughout all regions of the world. It is found wild occasionally with its parent species

Pharmacological Activities of *Mentha piperita*

Antimicrobial activity

Extracts of Folium Menthae Piperitae have antibacterial and antiviral activity in vitro. Addition of ground leaves to the agar medium inhibited the growth of *Salmonella typhimurium*, *Staphylococcus aureus* and *Vibrio parahaemolyticus* at concentrations of 0.1–2.0% (w/v). Aqueous and ethanol extracts of the leaves reduced the number of plaques of the rinderpest virus at concentrations of 4–8mg/ml[1]. Aqueous extracts of the leaves demonstrated activity against the following viruses in egg and cell culture: Newcastle disease, herpes simplex, vaccinia, Semliki Forest and West Nile[2].

Smooth muscle contraction

A 31% ethanol extract of the leaves inhibited both acetylcholine- and histamine-induced smooth muscle contractions in guinea-pig ileum in vitro at a concentration of 10 ml/l. The results were similar to those obtained with 0.13 mg atropine[3,4]. An aqueous flavonoid fraction isolated from a leaf extract inhibited barium chloride-induced muscle contractions of guinea-pig ileum in vitro at a concentration corresponding to 0.5 g leaves/ml[5].

Choleretic activity

Injection of a leaf infusion (0.5 ml) or a flavonoid fraction (equivalent to 3.3 g leaves/kg body weight) increased the amount of bile acids in cannulated rats and dogs (dose 0.4 mg/kg body weight)[5,6]. A mixture of flavonoids, isolated from the leaves, had choleretic activity in dogs (2mg/kg body weight)[7]. Flavomentin, a flavonoid isolated from the leaves, stimulated bile secretion and the synthesis of bile acids in dogs (2mg/kg body weight)[8]. Intragastric administration of a 30% ethanol extract of the leaves to rats (1ml/kg body weight) increased bile flow by 43%. The extract did not induce sedation in mice at doses up to 10 ml/kg body weight[4].

Anti-oedema activity

Topical application of a methanol leaf extract to mice (2.0mg/ear) inhibited ear oedema induced by 12-*O*-tetradecanoylphorbol-13-acetate[9].

Analgesic activity

Intragastric administration of a 30% ethanol extract of the leaves inhibited phenylbenzoquinone-induced writhing in mice (ED50 2.1 ml/kg body weight)[4].

Toxicology

Intragastric administration of a leaf extract (50 g leaves infused with 500 ml hot water for 10 minutes, then spray-dried) to 12 mice (4 g/kg body weight as a single dose) did not result in central nervous system depression, toxic effects or mortality[10].

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