

Fumitory

Species (Family)

Fumaria officinalis L. (Fumariaceae)

Synonym(s)

Fumitory

Part(s) Used

Herb

Pharmacopoeial and Other Monographs

BHC 1992^(G6)

BHP 1996^(G9)

Complete German Commission E^(G3)

Martindale 32nd edition^(G43)

PDR for Herbal Medicines 2nd edition^(G36)

Legal Category (Licensed Products)

GSL^(G37)

Constituents^(G2,G6,G40,G64)

Alkaloids Isoquinoline-type. Protopines including protopine (fumarine) as the major alkaloid and cryptopine,^(1,2) protoberberines including aurotenosine, stylopinine, sinactine and *N*-methylnactine,⁽³⁾ spirobenzylisoquinolines including fumaritine, fumaricine and fumariline,^(4,5) benzophenanthridines including sanguinarine,⁽⁶⁾ and indeno-benzazepines including fumaritridine and fumaritrine.^(6,7)

Flavonoids Glycosides of quercetin including isoquercitrin, rutin and quercetrin-3,7-diglucoside-3-arabinoglucoside.^(8,9)

Acids Chlorogenic, caffeic and fumaric acids.⁽⁸⁾

Other constituents Bitter principles, mucilage and resin.

Food Use

Fumitory is listed by the Council of Europe as a natural source of food flavouring (category N3). This category indicates that fumitory can be added to foodstuffs in the traditionally accepted manner,

although there is insufficient information available for an adequate assessment of potential toxicity.^(G16)

Herbal Use

Fumitory is stated to possess weak diuretic and laxative properties and to act as a cholagogue. Traditionally, it has been used to treat cutaneous eruptions, conjunctivitis (as an eye lotion) and, specifically, chronic eczema.^(G2,G6,G7,G8,G64)

Dosage

Herb 2–4 g or by infusion three times daily.^(G6,G7)

Liquid extract 2–4 mL (1:1 in 25% alcohol) three times daily.^(G6,G7)

Tincture 1–4 mL (1:5 in 45% alcohol) three times daily.^(G6,G7)

Pharmacological Actions

In vitro and animal studies

The herb had no effect on normal choleresis but it modified bile flow which was artificially increased or decreased.⁽¹⁰⁾ Antispasmodic activity on smooth muscle has been reported.⁽¹¹⁾ Extracts inhibited formation of gall-bladder calculi in animals.⁽¹²⁾ The major alkaloid protopine has antihistaminic,⁽¹³⁾ hypotensive, bradycardic and sedative activities in small doses,⁽¹⁴⁾ whereas larger doses cause excitation and convulsions.⁽¹⁴⁾ Bactericidal activity against the Gram-positive organisms *Bacillus anthracis* and *Staphylococcus* have been reported.⁽¹⁴⁾

Clinical studies

Clinical studies involving 105 patients with biliary disorders claimed favourable results.⁽¹⁵⁾

Side-effects, Toxicity

No reported side-effects or documented toxicity studies were located, although possible adverse effects include raised intraocular pressure and oedema.⁽¹⁶⁾

Contra-indications, Warnings

Hypotensive actions have been documented in animal studies.

Pregnancy and lactation The safety of fumitory during pregnancy and lactation has not been established. In view of lack of pharmacological and toxicity data, the use of fumitory during pregnancy and lactation should be avoided.

Pharmaceutical Comment

Fumitory is characterised by isoquinoline alkaloids which represent the principal active ingredients. Animal studies support some of the traditional uses, but it should not be used in home-made ophthalmic preparations. In view of the active constituents and the lack of safety data, excessive ingestion of fumitory should be avoided.

References

See also General References G2, G3, G6, G9, G16, G31, G36, G37, G43, G56 and G64.

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- 4 MacLean DB *et al.* Structure of three minor alkaloids of *Fumaria officinalis*. *Can J Chem* 1969; 47: 3593–3599.
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- 15 Fiegel G. Die amphocholoretische Wirkung der *Fumaria officinalis*. *Z Allgemeinmed Landarzt* 1971; 34: 1819–1820.
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