

Centaury

Species (Family)

Centaureum erythraea Rafin. (Gentianaceae)

Synonym(s)

Centaureum minus Moench,^(G45) *C. umbellatum* Gilib., *Erythraea centaureum* Pers., Minor Centaury

Part(s) Used

Herb

Pharmacopoeial and Other Monographs

BHP 1996^(G9)
BP 2001^(G15)
Complete German Commission E^(G3)
ESCOP 1999^(G52)
Martindale 32nd edition^(G43)
PDR for Herbal Medicines 2nd edition^(G36)
Ph Eur 2002^(G28)

Legal Category (Licensed Products)

GSL^(G37)

Constituents^(G2,G41,G64)

Acids Phenolic. Protocatechuic, *m*- and *p*-hydroxybenzoic, vanillic, syringic, *p*-coumaric, ferulic, sinapic and caffeic, hydroxyterephthalic and 2,5-dihydroxyterephthalic acids among others.

Alkaloids Pyridine-type. Traces of gentianine, gentianidine, gentioflavine and others.

Monoterpenoids Iridoids (bitters).^(1,2) Gentiopicroside (about 2%) as major, others include centapicrin, gentioflavoside, sweroside and swertiamarin; intensely bitter *m*-hydroxybenzoylestere of sweroside and catapicrin.

Triterpenoids Includes α - and β -amyrin, erythrodiol, crataegolic acid, oleanolic acid and sitosterol.

Xanthenes Highly methylated xanthenes, including eustomin and 8-demethyleustomin.

Other constituents Flavonoids, fatty acids, in, alkanes and waxes.

Food Use

Centaury is listed by the Council of Europe as a natural source of food flavouring (category N2). This category indicates that centaury can be added to foodstuffs in small quantities, with a possible limitation of an active principle (as yet unspecified) in the final product.^(G16) In the USA, the bitter properties of centaury are utilised in alcoholic and non-alcoholic beverages with maximum permitted doses between 0.0002% and 0.0008%.^(G41)

Herbal Use^(G2,G7,G52)

Centaury is reputed to act as a bitter, aromatic and stomachic. Traditionally, it has been used for anorexia and dyspepsia.

Dosage

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

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

Pharmacological Actions

Centaury is stated to have bitter tonic, sedative and antipyretic properties.^(G41) The antipyretic activity is stated to be due to the phenolic acids.^(G45) Gentiopicrosin is stated to have antimalarial properties.^(G48)

In vitro and animal studies

Anti-inflammatory activity has been documented in two rat models; subchronic inflammation (air pouch granuloma and polyarthritis) test,⁽³⁾ and the carrageenan rat paw oedema test (19% compared to 45% with indomethacin).⁽⁴⁾ Antipyretic activity has also been exhibited by a centaury extract against experimentally induced hyperthermia in rats, although pretreatment with the extract did not prevent hyperthermia.⁽³⁾ In the same study, no analgesic activity could be demonstrated in mice (writhing syndrome and hotplate models).⁽³⁾ Gentiopicroside (30 mg/kg/day intraperitoneally) inhibited tumour necrosis factor (TNF) production in carbon tetrachloride-induced and bacillus Calmette–Guérin/lipo-

polysaccharide-induced models of hepatic injury in mice.^(G52)

In rats, anticholinesterase activity has been demonstrated for swertiamarin in a dose-dependent manner following oral administration, demonstrated by inhibition of carbachol-induced contraction of proximal colon.^(G52) In mice, gentianine has central nervous system (CNS)-depressant activity at oral doses of 30 mg/kg, demonstrated by inhibition of spontaneous movement and prolonged hexobarbital-induced sleeping time.^(G52) Anti-ulcerogenic and inhibitory gastric secretion in rats (100 mg/kg) have been shown for gentianine.^(G52)

Side-effects, Toxicity

An alcoholic extract of centaury (200 mL/plate) was antimutagenic in *Salmonella typhimurium* strains TA8 and TA100.^(G52)

Contra-indications, Warnings

Centaury is contra-indicated for individuals with peptic ulcers.^(G52)

Pregnancy and lactation The safety of centaury taken during pregnancy has not been established. In view of the lack of toxicity data, use of centaury during pregnancy and lactation is best avoided.

Pharmaceutical Comment

There is little published information specifically concerning *C. erythraea*. Bitter components support the traditional use of centaury as an appetite stimulant, although it is said to be less active than comparable bitter herbs, such as gentian.^(G2) In view of the lack of pharmacological and toxicological data, excessive use should be avoided.

References

See also General References G2, G3, G9, G15, G16, G28, G31, G36, G37, G43, G48, G52, G56 and G64.

- 1 Van der Sluis WG, Labadie RP. Onderzoek naar en van secoiridoid glucosiden en zanthonen in het geslacht *Centaureum*. *Pharm Weekbl* 1978; 113: 21–32.
- 2 Van der Sluis WG, Labadie RP. Secoiridoids and xanthenes in the genus *Centaureum*. Part 3. Decentapicrins A, B and C, new *m*-hydroxybenzoyl esters of sweroside from *Centaureum littorale*. *Planta Med* 1981; 41: 150–160.
- 3 Berkan T *et al.* Antiinflammatory, analgesic, and antipyretic effects of an aqueous extract of *Erythraea centaureum*. *Planta Med* 1991; 57: 34–37.
- 4 Mascolo N *et al.* Biological screening of Italian medicinal plants for anti-inflammatory activity. *Phytother Res* 1987; 1: 28–31.