Holy Thistle

Species (Family)
*Cnicus benedictus* L. (Asteraceae/Compositae)

Synonym(s)
Blessed Thistle, Carbenia Benedicta, Carduus Benedictus, Cnicus

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,G30,G40,G62,G64)
*Lignans* Arctigenin, nortracheloside, 2-acetyl nortracheloside and trachelogenin (1).
*Polyenes* Several polyacetylenes (2).
*Steroids* Phytosterols (e.g. *n*-nonacosan, sitosterol, sitosteryl glycoside, stigmasterol) (3).
*Tannins* Type unspecified (8%).

Terpenoids Sesquiterpenes including cnicin 0.2–0.7% (4), yielding salônitenolide as aglycone (5) and aristemisifolin. Shoot and flowering head are reported to be devoid of cnicin (4). Triterpenoids including *α*-amyrrenone, *α*-amyrin acetate, *α*-amyrine, multiflorenol, multiflorenol acetate and oleanolic acid (3).

Volatile oils Many components, mainly hydrocarbons (6).

Other constituents Lithospermic acid, mucilage, nicotinic acid and nicotinamide complex, resin.

Food Use
Holy thistle is listed by the Council of Europe as natural source of food flavouring (category N2). This category indicates that holy thistle 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, holy thistle is permitted for use in alcoholic beverages (G65).

Herbal Use (G2,G6,G7,G8,G64)
Holy thistle is stated to possess bitter stomachic, antidiarrhoeal, antihemorrhagic, febrifuge, expirator, antibiotic, bacteriostatic, vulnerary and antiseptic properties. Traditionally, it has been used for anorexia, flatulent dyspepsia, bronchial catarrh, topically for gangrenous and indolent ulcers, and specifically for atonic dyspepsia, and enteropathy with flatulent colic.

Dosage
*Dried flowering tops* 1.5–3.0 g or by infusion three times daily.

*Liquid extract* 1.5–3.0 mL (1:1 in 25% alcohol) three times daily.

Pharmacological Actions

In vitro and animal studies
Antibacterial activity has been reported for an aqueous extract of the herb, for cnicin, and for the volatile oil (6–9). Activity has been documented against *Bacillus subtilis*, *Brucella abortus*, *Brucella bronchiseptica*, *Escherichia coli*, *Proteus* species, *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Streptococcus faecalis*. The antimicrobial activity of holy thistle has been attributed to cnicin and to the polyacetylene constituents (9).

Cnicin has exhibited in vivo anti-inflammatory activity (carrageenan-induced rat-paw oedema test) virtually equipotent to indomethacin (0.04). Antitu mour activity has been documented in mice against sarcoma 180 for the whole herb (38) and against lymphoid leukaemia for cnicin; cnicin has also been reported to exhibit in vitro activity against KB
cells.\(^8\) An \(\alpha\)-methylene-\(\gamma\)-lactone moiety is thought to be necessary for the antibacterial and antitumour activities of cnicin.\(^8\)

Lithospermic acid is thought to be responsible for the antigonadotrophic activity documented for holy thistle.\(^{G30}\) The sesquiterpene lactone constituents are stated to be bitter principles.\(^{G62}\)

Tannins are generally known to possess astringent properties.

**Side-effects, Toxicity**

None documented for holy thistle. The toxicity of cnicin has been studied in mice: the acute oral \(LD_{50}\) was stated to be 1.6–3.2 mmol/kg body weight and intraperitoneal administration was reported to cause irritation of tissue. In the writhing test, cnicin was found to cause abdominal pain with an \(ED_{50}\) estimated as 6.2 mmol/kg.\(^4\)

Antitumour activity has been documented for the whole herb and for cnicin *(see In vitro and animal studies)*.

**Contra-indications, Warnings**

None documented for holy thistle. Plants containing sesquiterpene lactones with an \(\alpha\)-methylene-\(\gamma\)-lactone moiety are generally considered to be allergenic, although no documented hypersensitivity reactions to holy thistle were located. Holy thistle may cause an allergic reaction in individuals with a known hypersensitivity to other members of the Compositae (e.g. chamomile, ragwort, tansy).

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

**Pharmaceutical Comment**

The chemistry of holy thistle is well documented and the available pharmacological data support most of the stated herbal uses, although no references to human studies were located. In view of the lack of toxicity data, excessive use of holy thistle should be avoided.

**References**

*See also* General References G2, G3, G6, G9, G16, G30, G31, G36, G37, G40, G43, G56, G62 and G64.