

The Longwood Herbal Task Force
(<http://www.mcp.edu/herbal/default.htm>) and
The Center for Holistic Pediatric Education and Research
(<http://www.childrenshospital.org/holistic/>)

Blessed Thistle (*Cnicus Benedictus*)

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Principal Proposed Uses: Digestive aid

Other Proposed Uses: Antineoplastic

Overview

Blessed thistle leaves, stems and flowers are traditionally used as a “bitter” tonic to enhance appetite and digestion; blessed thistle is also sometimes included in the anti-cancer herbal remedy, Essiac. There are remarkably few clinical trials evaluating these effects. Like many other herbs, blessed thistle has been tested *in vitro* for its antimicrobial, anticancer and anti-inflammatory effects, with some positive results. No controlled trials have documented clinical benefits in humans. A number of European multi-herb preparations containing blessed thistle are available. The only apparent side effects are allergic reactions in sensitive individuals and gastric irritation with very high dosages. The safety of blessed thistle for use during pregnancy, lactation and childhood has not been evaluated.

Historical and Popular Uses

Blessed or holy thistle has been used since at least the first century as a “bitter” to stimulate appetite, enhance bile secretion, strengthen the liver, diminish jaundice, decrease flatulence, and aid digestion. It was also historically used as a diuretic, diaphoretic, emmenagogue¹, contraceptive², and antipyretic, as a cure for the plague and malaria, and as a general tonic – practically a cure-all³. Nowadays, it is mainly used as a bitter tonic to treat dyspepsia, flatulence and indigestion⁴; some herbalists also recommend it as an astringent (to treat diarrhea or hemorrhage), vulnerary, galactagogue⁵, and remedy for dysmenorrhea⁶. It is

also used as a flavoring agent in Benedictine liqueur. Blessed thistle is sometimes added as a fifth ingredient to the anti-cancer herbal remedy, Essiac.

Botany

Medicinal species: Cnicus benedictus

Common names: Blessed thistle, bitter thistle, cardin, holy thistle, spotted thistle, St. Benedict thistle, Carbenia benedicta, Kardo-benediktenkraut (Ger), Chardon Benit (Fr), Cardo Santo (Sp)

Botanical family: Compositae/Asteraceae (like chamomile, echinacea, feverfew and others)

Plant description: The plant grows 30-50 cm high and its appearance is typical of the thistles.

The stems are heavily branched, fuzzy and sticky; leaves are thorny and dentate, and the upper leaves form a cup around the flower. The singular flowers are pale yellow and daisy-like.

Where it's grown: Blessed thistle is native to the Mediterranean areas of southern Europe. It is often imported from Italy and Spain. The leaves, flowering tops and seeds are used medicinally.

Biochemistry

Blessed Thistle's Active Chemical Constituents⁵

- Sesquiterpene lactone glycosides: cnicin (0.2-0.7%), salonitenolide⁷, absinthin⁸
- Triterpenoids: a-amyrenone, a-amyrin acetate, a-amyrine, multiflorenol acetate^{8, 9}
- Lignans: trachelogenin, artigenin, nortracheloside^{10, 11}
- Flavonoids, polyenes; tannins (8%)
- Essential/volatile oils (0.3%): p-cymene, fenchon, citral and cinnamaldehyde¹²⁻¹⁴
- Mucilage

Cnicin was first isolated in 1837 and is the main “bitter” ingredient in blessed thistle¹⁵,
¹⁶. *Sesquiterpene lactones* are the elements of Asteraceae/Compositae plants responsible for cross-sensitivity (allergic reactions)¹⁷.

The *lignans*, particularly *trachelogenin*, also contribute to the bitter characteristics of blessed thistle¹⁵. Several lignans are now under investigation as antiviral (particularly anti-HIV) and anticancer agents¹⁸⁻²¹.

Tannins are phenolic compounds found in many herbs and common foods (e.g. rhubarb and sorrel). Plants that contain more than 10% tannins may cause upset stomach as well as renal damage, hepatic necrosis, and an increased risk of esophageal and nasal cancer with long-term use. Blessed thistle contains approximately 8% tannins. Tannins are astringent and are traditionally used topically for a variety of wet or oozing skin conditions such as poison ivy.

Experimental Studies

Blessed Thistle: Potential Clinical Benefits

1. Cardiovascular: none
2. Pulmonary: none
3. Renal and electrolyte balance: Mild diuretic
4. Gastrointestinal/hepatic: Appetite stimulant, digestive tonic
5. Neuro-psychiatric: none
6. Endocrine: none
7. Hematologic: none
8. Rheumatologic: none
9. Reproductive: Dysmenorrhea, emmenagogue, abortifacient
10. Immune modulation: Anti-inflammatory
11. Antimicrobial: Antibacterial, antiviral
12. Antineoplastic: Antitumor
13. Antioxidant: none
14. Skin and mucus membranes: none
15. Other/miscellaneous: Antipyretic, diaphoretic

1. **Cardiovascular:** none
3. **Pulmonary:** none
3. **Renal and electrolyte balance:** Mild diuretic. Traditional use, no data.
4. **Gastrointestinal/hepatic:** Appetite stimulant, digestive tonic. Blessed thistle is traditionally used as a “bitter”, for dyspepsia and as a liver tonic and choleric. The German Commission E monographs recommended it to stimulate gastric juices and increase salivation²². However, we could find no randomized trials in animals or humans to evaluate these effects.
5. **Neuro-psychiatric:** none
6. **Endocrine:** none
7. **Hematologic:** none
8. **Rheumatologic:** none
9. **Reproductive:** Dysmenorrhea, emmenagogue, abortifacient. Traditional uses.

- i. *In vitro data*: Blessed thistle extracts did not stimulate contractions in guinea pig uteri²³.
- ii. *Animal data*: none
- iii. *Human data*: none

10. **Immune modulation:** Anti-inflammatory. Non-traditional use.

- i. *In vitro data*: none
- ii. *Animal data*: In the standard rat paw model of inflammation, cnicin had mild anti-inflammatory effects^{10, 24}.
- iii. *Human data*: none

11. **Antimicrobial:** Antibacterial, antiviral. Non-traditional uses.

a. Antibacterial

- i. *In vitro data*: Cnicin and the essential oil of blessed thistle were mildly antibacterial *in vitro* against *Bacillus subtilis*, *Brucella* species, *Escherichia coli*, *Proteus* species, *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Streptococcus faecalis*^{25, 26}; other studies demonstrated no activity against *Klebsiella*, *Pseudomonas*, *S. aureus*, *S. typhi*, or yeast²⁷⁻²⁹.
- ii. *Animal data*: none
- iii. *Human data*: none

b. Antiviral

- i. *In vitro data*: Blessed thistle exhibited no antiviral activity against herpes, influenza or polio viruses *in vitro*³⁰. Lignans found in blessed thistle are under investigation as anti-HIV agents³¹.
- ii. *Animal data*: none
- iii. *Human data*: There is one case report of an HIV+ woman who took an herbal mixture including blessed thistle; she felt better, but eventually died of pneumonia³².

12. **Antineoplastic:** Antitumor. Blessed thistle is included in some brands of the anti-cancer herbal remedy, Essiac.

- i. *In vitro data*: Cnicin and arctigenin exhibited cytotoxic activity against some tumor cell lines including leukemia (HL-60), hepatomas and sarcomas^{10, 21, 25, 33, 34}. Arctigenin also induced differentiation in mouse myeloid leukemia cell lines³⁵.

ii. *Animal data:* In mice, blessed thistle extracts and cnicin had antitumor activity against sarcoma 180 and lymphoid leukemia^{10, 36}.

iii. *Human data:* none

13. **Antioxidant:** none

14. **Skin and mucus membranes:** none

15. **Other/miscellaneous:** Diaphoretic, antipyretic. Traditional uses; no data.

Toxicity and Contraindications

All herbal products carry the potential for contamination with other herbal products, pesticides, herbicides, heavy metals and pharmaceuticals.

Allergic reactions can occur to any natural product in sensitive persons.

Allergic reactions to blessed thistle itself, as well as cross-reactivity to mugwort and echinacea, have been reported.

Potentially toxic compounds in blessed thistle: Unknown. Exposure to the growing plant may cause inflammation of the skin, eyes and mucous membranes³.

Acute toxicity: Gastric irritation and vomiting have been reported from high doses (over 5 grams per cup of tea)³⁷. No other acute reactions have been reported. In mice, the LD50 of cnicin was 1.6-3.2 mmol/kg body weight.

Chronic toxicity: Unknown. In the standard Ames test, water extracts of blessed thistle exhibited no mutagenicity even at concentrations up to 200 microliters/disc³⁸, but alcoholic extracts in concentrations of 400 microliters/disc had mild mutagenic effects when combined with several other herbs³⁹.

Limitations during other illnesses or in patients with specific organ dysfunction: Patients with gastric ulcers or gastrointestinal irritation are traditionally advised to avoid herbs, such as blessed thistle, that stimulate acid secretion and are intestinal irritants⁴⁰.

Interactions with other herbs or pharmaceuticals: Unknown

Safety during pregnancy and/or childhood: Due to blessed thistle's traditional use as an emmenagogue and abortifacient, it is not recommended during pregnancy⁴⁰. It is also not traditionally used in infancy or early childhood.

NOTE: Blessed thistle may be mistaken for milk thistle and other members of the thistle family.

Typical Dosages

Provision of dosage information does NOT constitute a recommendation or endorsement, but rather indicates the range of doses commonly used in herbal practice.

Doses are given for single herb use and must be adjusted when using herbs in combinations. Doses may also vary according to the type and severity of the condition treated and individual patient conditions.

Adult doses:

Tea is made by steeping 1-3 tsp of dried herb in 1 cup boiling water for 5–15 minutes.

Take 1 cup 30 minutes before meals^{5, 10, 12, 22}. The tea is very bitter.

Tincture: 1-2 mL TID⁵.

Liquid extract (1:1 in 25% alcohol): 1.5-3.0 mL TID¹⁰.

Pediatric dosages: Unknown

Trade names of European herbal mixtures containing blessed thistle: Asgocholan, Bilisan forte, Bomgall forte S, Carvomin, Cheiranthol, Chola-Dolan, Digestivum Hetterich, Esberigal, Frisoman, Gallexier, Gallitophen, Gastritol, Gastrosan, Gladlax, Hepaticum-Divinal, Hevert-Gall S, Losapan, Mag Kottas, Leber-Gallentee, Mariazeller, Rasyana, Tisane Antibiliaire et Stomachique, Tisane pour le coeur et la circulation H, Ventrodigest¹⁵.

Availability of standardized preparations: None

Dosages used in herbal combinations: Variable

See Also:

Blessed Thistle Clinician Information Summary:

<http://www.mcp.edu/herbal/blessedthistle/blessedthistle.cis.pdf>

Blessed Thistle Patient Fact Sheet:

<http://www.mcp.edu/herbal/blessedthistle/blessedthistle.ph.pdf>

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