

CENTELLA

Scientific name: *Centella asiatica* Linné

Family: *Umbelliferae*

Popular names: centella

Used parts: aboveground parts ^(1,2), the fresh and dried leaves and stem ⁽²⁾.

Botanical characteristics: *Centella asiatica* is a tender umbel plant, which has numerous creeping stems. The stems have roots at the nodes, which are smooth. The circular-reniform leaves are 2 to 6 cm long and 1,5 to 5 wide a crenate marging and 5 to 9 ribs. The petioles are 3 to 30 cm long. The pedicel are 1,2 to 4 cm long. The sepals of the epicalyxes are oval to circular, with a membranous border. They are about 2,5 to 3 mm long and 1,5 to 2,5 mm wide. The umbels have 2 or 3 sessile or short- pedicled florets. The petals are white, to purple or pink. The calyx is not generally dentate. The fruit is oval to globular in shape, and has a diameter of 2 to 5 mm. The mericarps are clearly flattened at the sides and usually have 7 to 9 ribs and are raised rugose ⁽²⁾.

Habitat: The plant is indigenous to southeast Asia, India, Sri Lank, parts of China, The western South Sea Islands, Madagascar, South Africa, southeast U. S., Mexico, Venezuela, Columbia, and eastern South America. ^(1,2) It grows in east of Europe and Brazil ⁽¹⁾.

Chemical composition: triterpene acids (asiatic acid, madecassic acid, terminolic acid), triterpene acid from oligosaccharides (pseudosaponins as asiaticoside, asiaticoside A, asiaticoside B) ^(2,7), alkaloids, oil volatile, flavonoids, quercetine, camphor, cineol, sugars, mineral salts, aminoacids, fat acids, resins ⁽¹⁾.

Indications: treating chronic venous insufficiency, varicose vein, venous hipertension, anti-inflammatory ^(2,5), ulcerations ^(2,6), extensive wounds, eczemas, inhibitory effect on the biosynthetic activity of fibroblast cells, general mental ability retarded children ⁽⁶⁾, locally fat and cellulite ⁽¹⁾,

collagen synthesizing ⁽⁷⁾ peripheral

vasodilatory, rejuvenant ⁽¹⁾, intelligence promoting property, tranquilizer ⁽⁴⁾.

Dose:

Inside use:

- Powder: 0,25 to 1 g daily, after meal. ⁽¹⁾
- Dry extract: 0,05 to 0,20 g daily. ⁽¹⁾
- Fluid extract: 0,25 to 1 ml daily. ⁽¹⁾

Outside use:

- Gel, creams and soften lotions: glycolic extract 2-5%. ⁽¹⁾
- Repair creams: glycolic extract 3-6%. ⁽¹⁾
- After sun creams: glycolic extract 1-5%. ⁽¹⁾

Others informations:

- It is advisable control the inside use because can cause toxicity ⁽¹⁾.
- In tropical country can cause skin photosensitivity ⁽¹⁾.
- For cellulite treatment, repeat the treatment for 3 months with therapeutically rests of 30 days ⁽¹⁾.
- Over doses (over 50 mg/Kg), cause SNC depression and dizziness ⁽¹⁾.
- The methanolic extract of *Centella asiatica* has shown significant cytotoxicity to Erlich ascites tumours cells (EAC) and Dalton's lymphoma ascites tumours cells (DLA) ⁽⁶⁾.
- Treatment with ⁽¹⁾ methanolic extract whole plant brought the anti-oxidant system to a normal level, indicating that it exhibits an anti-oxidant property in cell-induced lymphoma-bearing mice ⁽⁷⁾.
- Different parts of *Centella asiatica* were found to contain high phenolic contents, which exhibit strong association with antioxidative activities. Those phenolic compounds are the major contributors to the antioxidative activities of *Centella asiatica*. The anti-oxidant activity was as good as that of-tocoferol ⁽³⁾.
- Many phenolic compounds, particularly flavonoids, exhibit a wide range of biological effects, including antibacterial, antiviral, anti-

inflammatory, anti-allergic, anti-thrombotic and vasodilatory actions⁽³⁾.

- The aqueous extracts of whole plant of *Centella asiatica* have two pronounced effects, i.e. improving the learning and memory and, the antioxidant property by decreasing the lipid peroxidation and augmenting the endogenous antioxidant enzymes in brain⁽⁴⁾.

References:

1. TESKE, M.; TRENTINI, A. M. M. **Herbarium compêndio de fitoterapia**. 3. ed. Curitiba: Herbarium, 1997.
 2. MEDICAL ECONOMICS COMPANY. **PDR for herbal medicines**. 2. ed. Montvale: Copyright, 2000.
 3. ZAINOL, M. K. et al. Antioxidative activity and total phenolic compounds of leaf, root and petiole of four accessions of *Centella asiatica* (L.) Urban. **Food Chemistry**, v.81, p.575-581, 2003.
 4. KUMAR, M. H. V.; GUPTA, Y. K. Effect of different extracts of *Centella asiatica* on cognition and markers of oxidative stress in rats. **Journal of Ethnopharmacology**, v.79, p. 253-260, 2002.
 5. INAMDAR, P. K. Determination of biologically active constituents in *Centella asiatica*. *Journal of Chromatography A*, v. 742, p. 127-130, 1996.
 6. BABU, T. D.; KUTTAN, G.; PADIKKALA, J. Cytotoxic and anti-tumor properties of certain taxa of Umbelliferae with special reference to *Centella asiatica* (L.) Urban. **Journal of Ethnopharmacology**, v. 48, p. 53-57, 1995.
- JAYASHREE, G. et al. Anti-oxidant activity of *Centella asiatica* on lymphoma-bearing mice. **Fitoterapia**, v. 74, p. 431-434, 2003.