ORGANIC HERB INC
NATURAL INGREDIENT SOLUTIONS
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- **Latin Name:** Calendula officinalis L.
- **Active Ingredient:** triterpenoid esters, lutein , zeaxanthin
- **CAS No.:**
- **Test method:** HPLC
- **Specifications:** 35:1

Product Description:

Name :Calendula extract
Source:Calendula
Botanical Name :Calendula officinalis L.
Extract part: Flower
Composition ratio:35 to 1
Identification measure :HPLC
Appearance: Fine Yellow powder
Country of origin:P.R. China

Source

Calendula officinalis is a short-lived aromatic herbaceous perennial in the daisy family Asteraceae that are often known as the pot marigolds.They are native to southwestern Asia, western Europe, Macaronesia, and the Mediterranean.Calendula officinalis is the most commonly cultivated and used member of the Calendula genus .It growing to 80 cm (31 in) tall, with sparsely branched lax or erect stems. The leaves are oblong-lanceolate, 5–17 cm (2–7 in) long, hairy on both sides, and with margins entire or occasionally waved or weakly toothed. The inflorescences are yellow, comprising a thick capitulum or flowerhead 4–7 cm diameter surrounded by two rows of hairy bracts; in the wild plant they have a single ring of ray florets surrounding the central disc florets. The disc florets are tubular and hermaphrodite, and generally of a more intense orange-yellow colour than the female, tridentate, peripheral ray florets. The flowers may appear all year long where conditions are suitable. The fruit is a thorny curved achene.

Main bio-actives

The flowers of Calendula officinalis contain flavonol glycosides, triterpene oligoglycosides, oleanane-type triterpene glycosides, saponins, and a sesquiterpene glucoside.

The petals and pollen of Calendula officinalis contain triterpenoid esters and the carotenoids flavoxanthin and auroxanthin (antioxidants and the source of the yellow-orange coloration). The leaves and stems contain other carotenoids, mostly lutein (80%), zeaxanthin (5%), and beta-carotene. Plant extracts are also widely used by cosmetics, presumably due to presence of compounds such as saponins, resins, and essential oils.

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Functions

Anti-inflammatory and wound healing

Calendula officinalis is an annual herb from Mediterranean origin which is popularly used in wound healing and as an anti-inflammatory agent.The experimental study onEvidence-Based Complementary and Alternative Medicine revealed that C. officinalis presented anti-inflammatory and antibacterial activities as well as angiogenic and fibroplastic properties acting in a positive way on the inflammatory and proliferative phases of the healing process.Studies evaluated and evidenced the antiinflammatory

activity of C. officinalis and related this activity to the presence of triterpenes, especially to faradiol esters and taraxasterol.

Antitumor

The cytotoxic anti-tumor and immunomodulatory activities and in vivo anti-tumor effect of Calendula Extract(CE) was evaluated .Report on BMC Cancer showed tumor cell lines derived from leukemias, melanomas, fibrosarcomas and cancers of breast, prostate, cervix, lung, pancreas and colorectal were used and tumor cell proliferation in vitro was measured by BrdU incorporation and viable cell count.Effect of CE on human peripheral blood lymphocyte (PBL) proliferation in vitro was also analyzed. Studies of cell cycle and apoptosis were performed in CE-treated cells. In vivo anti-tumor activity was evaluated in nude mice bearing subcutaneously human Ando-2 melanoma cells.The CE extract showed a potent in vitro inhibition of tumor cell proliferation when tested on a wide variety of human and murine tumor cell lines. The inhibition ranged from 70 to 100%. Mechanisms of inhibition were identified as cell cycle arrest in G0/G1 phase and Caspase-3-induced apoptosis. Interestingly, the same extract showed an opposite effect when tested on PBLs and NKL cell line, in which in vitro induction of proliferation and activation of these cells was observed. The intraperitoneal injection or oral administration of CE extract in nude mice inhibits in vivo tumor growth of Ando-2 melanoma cells and prolongs the survival day of the mice.These results indicate that LACE aqueous extract has two complementary activities in vitro with potential anti-tumor therapeutic effect: cytotoxic tumor cell activity and lymphocyte activation.

Antibacterial

The antimicrobial potential of CE was evaluated against a panel of microorganisms isolated from patients at the Belfast City Hospital (BCH), including bacteria and fungi, using disc diffusion assay. Methanol CE exhibited better antibacterial activity against most of the bacteria tested, than ethanol extract. Both methanol and ethanol extracts showed excellent antifungal activity against tested strains of fungi, while comparing with Fluconazole.

The lowest concentrations of the extracts that inhibit microorganism’s growth were CEE, MIC of 0.39mg/mL against S. aureus 13048 and B. stearo thermophylus; FDC, MIC of 4.37 mg/mL against S. aureus 6532 and S. aureus 13048, MIC of 1.08mg/mL against B. stearo thermophylus and B. cereus, MIC of 0.5mg/mL against M. roseus; FHC, MIC of 0.19 mg/mL against S. aureus 13048. According to Alonso, the antibacterial activity is due to the presence of flavonoids and essential oils in CE

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Acute Dermatitis

The effectiveness of CE for the prevention of acute dermatitis during adjuvant radiotherapy for breast carcinoma has been demonstrated by a Randomized Trial published on JOURNAL OF CLINICAL ONCOLOGY.Between July 1999 and June 2001, 254 patients who had been operated on for breast cancer and who were to receive postoperative radiation therapy were randomly allocated to application of either

trolamine (128 patients) or CE (126 patients) on the irradiated fields after each session. The primary end point was the occurrence of acute dermatitis of grade 2 or higher. Prognostic factors, including treatment modalities and patient characteristics, were also investigated. Secondary end points were the occurrence of pain, the quantity of topical agent used, and patient satisfaction.The study showed the occurrence of acute dermatitis of grade 2 or higher was significantly lower (41% v 63%; P .001) with the use of CEthan with trolamine. Moreover, patients receiving CE had less frequent interruption of radiotherapy and significantly reduced radiation-induced pain. CE was considered to be more difficult to apply, but self-assessed satisfaction was greater. Body mass index and adjuvant chemotherapy before radiotherapy after lumpectomy were significant prognostic factors for acute dermatitis.Researchers concluded that CE is highly effective for the prevention of acute dermatitis of grade 2 or higher and should be proposed for patients undergoing postoperative irradiation for breast cancer.

Applications

Calendula officinalis contain Carotenoids mostly lutein (80%) which has primarily been used as a natural colorant due to its orange-red color in food and drug industry .The pharmacological effects of Calendula officinalis showed its potential applications in medical treatment ,pharmaceuticals and health promote supplement .

--Calendula - Wikipedia, the free encyclopedia
--Calendula officinalis - Wikipedia, the free encyclopedia
--LeilaMaria Leal Parente et al; “Wound Healing and Anti-Inflammatory Effect in AnimalModels of Calendula officinalis L. Growing in Brazil”;Evidence-Based Complementary and Alternative Medicine
--Jimenez-Medina, E., et al. (2006). A new extract of the plant Calendula officinalis produces a dual in vitro effect: cytotoxic anti-tumor activity and lymphocyte activation. BMC Cancer
-- Efstratiou E et.al; "Antimicrobial activity of Calendula officinalis petal extracts against fungi, as well as Gram-negative and Gram-positive clinical pathogens". Complement Ther Clin Pract 2012
--Pommier, P et al; “ Phase III randomized trial of Calendula officinalis compared with trolamine for the prevention of acute dermatitis during irradiation for breast cancer” J Clin Oncol. 2004