

Arnica Flower CO₂-Extract – Approved Efficacy in Topical Treatment

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Abstract

Supercritical CO₂-extraction is the state-of-the-art technology for the production of standardised *Arnica*-extracts with high concentration of bioactive sesquiterpene lactones (SQLs). This provides the base for the development of valuable dermatological products with good efficacy, whilst simultaneously minimising the allergenic potential. A further advantage is that the lipophilic CO₂-extract does not contain polar components e.g. flavonoids which are suspected of allergenic effects.

Traditional use of *Arnica* preparations is supported by new pharmacological and clinical studies. Besides the application in the case of sports and accident related injuries, *Arnica* is increasingly used for treatment of age-related inflammatory diseases of the bones and joint apparatus. Topical treatment with *Arnica* preparations can be ranked today among rational phytotherapy. *Arnica* should not be administered orally or applied to open wounds where absorption can occur. The predominant opinion in literature that *Arnica* SQLs have strong allergenic potential could not be confirmed in recent investigations. Highly concentrated plant extracts standardised to bioactive ingredients have an enormous potential in skin care and dermatology when used properly.

Introduction

Knowledge about the healing power of *Arnica* can be traced back to the 13th century⁽¹⁾. *Arnica* preparations have traditionally been used for the treatment of backache, bruising, cramps, fibrositis, relief of muscular and rheumatic pain and stiffness, sport injuries and sprains.

Recent clinical studies for topical treatment of inflammatory diseases with *Arnica* preparations support the traditional use of *Arnica* for a variety of injuries and muscle or joint pains. The genus *Arnica* belongs to the Asteraceae family and comprises about 32 species which are divided into five subspecies: *andropurpurea*, *arctica*, *austromontana*, *chamonissonis* and *montana*. The European Pharmacopoeia monograph specifies only *Arnica montana*. The height of *Arnica montana* ranges from 30-60cm. It is a perennial plant with a round, hairy

stem and one to three flower stalks. Flowers are yellow-orange ray flowers around a cluster of tubular center flowers. The distribution area of *Arnica montana* is mainly the alpine Mediterranean region from the Pyrenees in the North of Spain to the Balkans, from the valleys up to 2500m altitude.



Figure 1a. *Arnica Montana*



Figure 1b. *Arnica Montana*



Figure 1c. *Arnica Montana*