

A059 Rosmarinus officinalis L. leaves and their steam distillation residue as source of anti-inflammatory principles

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Rosmarinus officinalis L. (Labiatae) leaves are traditionally used as a spice and natural antioxidant, but also as a remedy for the treatment of inflammatory-based diseases. The anti-inflammatory principles of the plant are not clearly defined and most of the previous research work was focused on its essential oil. Recently we found that non volatile constituents (ursolic and oleanolic acids), were responsible for the topical anti-inflammatory activity of the related plants *Thymus willdenowii* Boiss and *Salvia officinalis* L. (1, 2). Therefore, the non volatile constituents of *R. officinalis* leaves were investigated for their antiphlogistic activity. By means of successive extractions with solvents of increasing polarity, n-hexane, chloroform and methanol extracts were obtained and then evaluated for their topical anti-inflammatory activity by the Croton oil ear test in mice (3). The most active extract was the chloroform one with an ID₅₀ value (dose giving 50 % oedema reduction) of 83 µg/cm², similar to that of the reference drug indomethacin (93 µg/cm²). Its main anti-inflammatory principles resulted to be ursolic and oleanolic acids with an ID₅₀ of 53 and 132 µg/cm² respectively. The extract contains further triterpenes such as the 3-(β)-hydroxy-micromeric acid, as potent as oleanolic acid, and the 3-(β)-hydroxy-micromeric acid methyl ester, almost inactive.

The chloroform extract of *R. officinalis* distillation residue showed almost the same anti-inflammatory activity of the leaves extract. Therefore the wastes of the essential oil production could be an interesting source of triterpenic compounds with high anti-inflammatory activity.

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A060 Anti-inflammatory activity of *Alpinia calcarata*

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Alpinia calcarata belongs to family Zingiberaceae. The analysis of the volatile oil of *A. calcarata* has revealed the presence of methyl cinnamate and several terpenes as constituents. 1,8-cineol is the major component. Protocatechuic acid, 4-O-methyl quercetin, syringic acid, vanillic acid are also reported. The aqueous extract of the rhizome is widely used in the treatment of arthritis in traditional systems of medicine in Sri Lanka. However the anti-inflammatory activity and toxicity of the local plant is not scientifically verified. Therefore the extracts of the rhizome were subjected to anti-inflammatory assay.

The hot water extract of dried powdered rhizome was prepared by boiling with water for 2 h. The carrageenan induced rat paw oedema was chosen as a model for general inflammation. Healthy adult cross bred albino rats were used in the experiment. Inflammation was induced by injecting carrageenan to the hind paw. Half an hour before this the plant extract was orally administered. The water extracts in doses of 250, 500 and 1000 mg/kg were administered. The hind paw volume was measured plethysmometrically before the drug administration and after the 0.05 ml of 1% carrageenan injection at hourly interval up to 5 h. 500 mg/kg of water extract had the maximum activity (78% inhibition after 5h). No lethal effects were produced after oral administration of the extracts.

These results supports the traditional use of this plant.

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