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Rose geranium Essential Oil as a Source of New and Safe Anti-Inflammatory Drugs

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Abstract : Since the available anti-inflammatory drugs exert an extensive variety of side effects, the search for new anti-inflammatory agents has been a priority of pharmaceutical industries. The aim of the present study was to assess the anti-inflammatory activities of the essential oil of rose geranium (RGEO). The chemical composition of the RGEO was investigated by gas chromatography. The major components were citronellol (29.13%), geraniol (12.62%), and citronellyl formate (8.06%). In the carrageenan induced paw edema, five different groups were established and RGEO was administered orally in three different doses. RGEO (100 mg/kg) was able to significantly reduce the paw edema with a comparable effect to that observed with diclofenac, the positive control. In addition, RGEO showed a potent anti-inflammatory activity by topical treatment in the method of croton oil-induced ear edema. When the dose was 5 or 10 ml of RGEO per ear, the inflammation was reduced by 73 and 88%, respectively. This is the first report to demonstrate a significant anti-inflammatory activity of Algerian RGEO. In addition, histological analysis confirmed that RGEO inhibited the inflammatory responses in the skin. Our results indicate that RGEO may have significant potential for the development of novel anti-inflammatory drugs with improved safety profile.

Keywords : anti-inflammatory effect, carrageenan, citronellol, histopathology, Rose geranium
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