

عنوان مقاله:

Immunomodulatory activity of geranial, geranial acetate, gingerol, and eugenol essential oils: evidence for humoral and cell-mediated responses

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خلاصه مقاله:

Objective: The immunomodulatory effect of geranial, geranial acetate, gingerol, and eugenol essential oils were evaluated by studying humoral and cell-mediated immune responses. **Materials and Method:** The essential oils were evaluated for immunomodulatory activity in in vivo studies, using rats as the animal model. The essential oils were tested for hypersensitivity and hemagglutination reactions, using sheep red blood cells (SRBC) as the antigen while sodium carboxy methyl cellulose (SCMC) served as the control in all the tests. **Result:** Orally administrated essential oils showed a significant increase of test parameters, viz., haemagglutinating antibody titre (HAT) and delayed type hypersensitivity (DTH) response. In rats immunized with sheep RBC, essential oils enhanced the humoral antibody response to the antigen and significantly potentiated the cellular immunity by facilitating the foot pad thickness response to sheep RBC in sensitized rats with doses of 50-800 mg/ml. Haemagglutination titre of geraniol showed the highest increase of 139.3 ± 6.38 and with 5.9 ± 0.7 DTH, respectively. For geranial acetate, the haemagglutination titre showed a moderate increase of 87.5 ± 5.9 and highest increase in DTH with 5.9 ± 0.8 , respectively. Using gingerol, the haemagglutination titre showed a moderate increase with 88.2 ± 6.306 and DTH 3.5 ± 0.5 , respectively and for eugenol, the haemagglutination titre showed a moderate increase with 112.06 ± 6.169 and DTH 4.4 ± 0.6 , respectively. These differences were statistically significant. **Conclusion:** The essential oils were found to have a significant immunostimulant activity on both the specific and non-specific immune mechanisms.

کلمات کلیدی:

Geranial, Geranial Acetate, Gingerol, Eugenol, Haemagglutination

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