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Comparison and evaluation of different seed extracts of Trachyspermum ammi for immunomodulatory effect on cell-mediated immunity through delayed-type hypersensitivity assay skin thickness method (Article) (Open Access)

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Abstract

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Objective: The aim and objective of this study was to find the immunostimulant and immunomodulatory effect of T. ammi seed extracts. Methods: Seeds of T. ammi were extracted using three different solvents n-hexane, chloroform, and methanol by using soxhlet apparatus. To assess the immunomodulatory effect, delayed-type hypersensitivity (DTH) assay method was used and by the DTH assay, the effect of T. ammi on the skin thickness of rats was estimated. To find the exact dose for administration, acute toxicity test was performed using crude methanolic extract at a dose of 400, 800, 1600, and 3200mg/kg. After acute toxicity test, 500mg/kg dose was determined as safe for therapeutic effect and immunomodulatory effect was evaluated at this dose. Dose of 500mg/kg was administered to Wistar rats daily for 14 days and skin thickness of rats was measured at 24, 48, and 72h. Results: Results were obtained from six groups of rats, which were positive control group, negative control group, and the groups receiving the test drugs. Standard drug was the combination of sodium selenite, vitamin E, and sodium chloride and it showed more positive results as compared to that of test drug. Furthermore, among the three extracts, methanol extract showed more effectiveness on skin thickness. Conclusion: There was a meaningful difference was observed between the skin thickness of rats which shows that T. ammi have good immunomodulatory as well as immunostimulant activity. © 2019 Journal of Pharmacy and Bioallied Sciences | Published by Wolters Kluwer-Medknow.

Author keywords

Delayed-type hypersensitivity assay | immunomodulatory effect | Trachyspermum ammi seeds

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