

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

By: Siddiqui, MJ (Siddiqui, Mohammad Jamshed)^[1]; Aslam, A (Aslam, Adeel)^[2]; Khan, T (Khan, Tanveer)^[3]

JOURNAL OF PHARMACY AND BIOALLIED SCIENCES

Volume: 11 Issue: 1 Pages: 43-48

DOI: 10.4103/jpbs.JPBS_174_18

Published: JAN-MAR 2019

Document Type: Article

Abstract

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.

Keywords

Author Keywords: Delayed-type hypersensitivity assay; immunomodulatory effect; *Trachyspermum ammi* seeds

KeyWords Plus: TOXICITY; OIL

Author Information

Reprint Address: Aslam, A (reprint author)

+ Int Islamic Univ Malaysia, Dept Pharm Practice, Kulliyah Pharm, Kuantan 25200, Pahang, Malaysia.

Addresses:

[1] Osol Aldeen Univ Coll, Pharm Dept, Baghdad, Iraq

+ [2] Mustansiriya Univ, Coll Pharm, Clin Pharm Dept, Baghdad, Iraq

+ [3] Mustansiriya Univ, Coll Pharm, Clin Lab Sci Dept, Baghdad, Iraq

E-mail Addresses: adeel.aslam6666@gmail.com

Publisher

WOLTERS KLUWER MEDKNOW PUBLICATIONS, WOLTERS KLUWER INDIA PVT LTD , A-202, 2ND FLR, QUBE, C T S NO 1498A-2 VILLAGE MAROL, ANDHERI EAST, MUMBAI, 400059, INDIA

Categories / Classification

Research Areas: Pharmacology & Pharmacy

Web of Science Categories: Pharmacology & Pharmacy

Document Information

Language: English

Accession Number: WOS:000458368100007

ISSN: 0975-7406

Citation Network

In Web of Science Core Collection

0

Times Cited

Create Citation Alert

38

Cited References

View Related Records

Use in Web of Science

Web of Science Usage Count

0

Last 180 Days

0

Since 2013

Learn more

This record is from:

Web of Science Core Collection

- Emerging Sources Citation Index

Suggest a correction

If you would like to improve the quality of the data in this record, please suggest a correction.

Other Information

IDS Number: HLOEQ

Cited References in Web of Science Core Collection: **38**

Times Cited in Web of Science Core Collection: 0

[See fewer data fields](#)

◀ 1 of 1 ▶

Cited References: 38Showing 30 of 38 [View All in Cited References page](#)

(from Web of Science Core Collection)

1. **Immunomodulatory activity of *Carcum copticum* leaf extracts** Times Cited: **1**
By: Akhade, S; Jadhav, U.
Biomed Pharmacol J Volume: 3 Pages: 273-5 Published: 2015
2. **Ameliorative effect of ajwain extract on hexachlorocyclohexane-induced lipid peroxidation in rat liver** Times Cited: **17**
By: Anilakumar, K. R.; Saritha, V.; Khanum, Farhath; et al.
FOOD AND CHEMICAL TOXICOLOGY Volume: 47 Issue: 2 Pages: 279-282 Published: FEB 2009
3. **Immunomodulatory effects of fenugreek (*Trigonella foenum graecum* L.) extract in mice** Times Cited: **120**
By: Bin-Hafeez, B; Haque, R; Parvez, S; et al.
INTERNATIONAL IMMUNOPHARMACOLOGY Volume: 3 Issue: 2 Pages: 257-265 Published: FEB 2003
4. Title: [not available] Times Cited: **1**
By: Bose, TK; Kabir, J; Das, P; et al.
Tropical horticulture Volume: II Pages: 633-733 Published: 2001
Publisher: Naya Prokash, Calcutta, India
[\[Show additional data\]](#)
5. **Immunological determination in rabbits after immune response potentiation by using immunomodulators** Times Cited: **2**
By: Calin, V.; Turcu, D.; Petrut, T.
J. Vet. Med. Volume: 57 Issue: 3 Pages: 25-32 Published: 2011
6. **Essential oil constituents of *Trachyspermum copticum* (L.) Link fruits.** Times Cited: **12**
By: Chialva, F.; Monguzzi, F.; Manitto, P.; et al.
Journal of Essential Oil Research Volume: 5 Issue: 1 Pages: 105-106 Published: 1993
7. **The analgesic effect of *Carum copticum* extract and morphine on phasic pain in mice** Times Cited: **30**
By: Dashti-Rahmatabadi, Mohammad Hossein; Hejazian, Seyed Hassan; Morshedi, Abbas; et al.
JOURNAL OF ETHNOPHARMACOLOGY Volume: 109 Issue: 2 Pages: 226-228 Published: JAN 19 2007
8. Title: [not available] Times Cited: **1**
By: Descotes, J.
Introduction to immunotoxicology Pages: 235-40 Published: 2014
Publisher: CRC Press, London, UK
9. Title: [not available] Times Cited: **35**
By: Elgert, K. D.
Immunology: Understanding The Immune System. Published: 2009
Publisher: Wiley-Blackwell
10. **Studies on the antihypertensive, antispasmodic, bronchodilator and hepatoprotective activities of the *Carum copticum* seed extract** Times Cited: **84**
By: Gilani, AH; Jabeen, Q; Ghayur, MN; et al.
JOURNAL OF ETHNOPHARMACOLOGY Volume: 98 Issue: 1-2 Pages: 127-135 Published: APR 8 2005
11. Times Cited: **63**