

[Look Up Full Text](#)[Find PDF](#)

Full Text Options

[Export...](#)[Add to Marked List](#)

1 of 1

In vivo anxiolytic and in vitro anti-inflammatory activities of water-soluble extract (WSE) of Nigella sativa (L.) seeds

By: Babar, ZM (Babar, Z. M.)^[1]; Jaswir, I (Jaswir, I.)^[1,2]; Tareq, AM (Tareq, A. M.)^[2]; Reza, ASMA (Reza, A. S. M. Ali)^[2]; Azizi, WM (Azizi, W. M.)^[3]; Hafidz, M (Hafidz, M.)^[1]; Ahfter, F (Ahfter, F.)^[2]; Hasan, M (Hasan, M.)^[2]; Farhad, S (Farhad, S.)^[2]; Uddin, MMR (Uddin, M. M. Rokib)^[2] ...[More](#)

[View Web of Science ResearcherID and ORCID](#)

NATURAL PRODUCT RESEARCH

DOI: 10.1080/14786419.2019.1667348

[Early Access](#): OCT 2019

Document Type: Article; Early Access

[View Journal Impact](#)

Abstract

The WSE is a highly polar, gummy and mucilaginous bioactive content of the Nigella sativa (L.) seeds. This study reports the anxiolytic and anti-inflammatory effects of WSE investigated using Elevated Plus Maze (EPM) and Hole-Board Test (HBT) in adult mice and human RBCs haemolysis inhibition and protein denaturation respectively. The oral WSE treatment (100 & 200 mg/kg b.w./day) for 72 hours has exhibited slightly better anxiolytic effect ($p < 0.05$) through the time span (92.33 & 93.33 s) spent in the opened arms of EPM vs. diazepam (1 mg/kg b.w. i.p./day; 69.33 s). In HBT, only WSE (200 mg/kg b.w./day) has shown a promising number of mean head pokes (13.27 times/min) vs. diazepam (12.87 times/min). The WSE (62.5-500 mg/mL) exposure has exhibited 40.14-72.18% protection against lysis of RBCs vs. aspirin (57.04-71.48%) whilst 62.67-67.66% inhibition of protein denaturation vs. diclofenac sodium (43.11-80.64%). The current findings suggested WSE has promising anxiolytic and anti-inflammatory activities.

Keywords

Author Keywords: Nigella sativa (L.) seeds; WSE; elevated plus maze (EPM); hole-board test (HBT); RBC haemolysis; anxiolytic; anti-inflammatory

KeyWords Plus: GLUTAMATE RECEPTORS; THYMOQUINONE; GABA(A); ANTIOXIDANT; MODULATION; ASPIRIN; ANXIETY

Author Information

Reprint Address: Jaswir, I (reprint author)

+ Int Islamic Univ Malaysia, Int Inst Halal Res & Training INHART, Kuala Lumpur, Malaysia.

Addresses:

+ [1] Int Islamic Univ Malaysia, Int Inst Halal Res & Training INHART, Kuala Lumpur, Malaysia

[2] Int Islamic Univ Chittagong, Dept Pharm, Kumira, Bangladesh

[3] PICOMS Int Coll, Kuala Lumpur, Malaysia

+ [4] IIUM, Fac Dent, Jalan Hj Ahmad Shah, Bandar Indera Mahkota, Pahang, Malaysia

+ [5] IIUM, Dept Pharmaceut Chem, Fac Pharm, Jalan Hj Ahmad Shah, Bandar Indera Mahkota, Pahang, Malaysia

[6] Univ Sci & Technol Chittagong, Dept Microbiol, Khulshi, Bangladesh

E-mail Addresses: irwandi@iium.edu.my

Funding

Funding Agency	Grant Number
Department of Pharmacy, International Islamic University Chittagong (IIUC), Chittagong, Bangladesh	

[View funding text](#)

Publisher

TAYLOR & FRANCIS LTD, 2-4 PARK SQUARE, MILTON PARK, ABINGDON OX14 4RN, OXON, ENGLAND

Citation Network

In Web of Science Core Collection

0

Times Cited

[Create Citation Alert](#)

29

Cited References

[View Related Records](#)

Use in Web of Science

Web of Science Usage Count

1

Last 180 Days

1

Since 2013

[Learn more](#)

This record is from:

Web of Science Core Collection
- Science Citation Index Expanded

[Suggest a correction](#)

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Journal InformationImpact Factor: [Journal Citation Reports](#)**Categories / Classification**

Research Areas: Chemistry; Pharmacology & Pharmacy

Web of Science Categories: Chemistry, Applied; Chemistry, Medicinal

[See more data fields](#)

◀ 1 of 1 ▶

Cited References: 29Showing 29 of 29 [View All in Cited References page](#)

(from Web of Science Core Collection)

- A review on therapeutic potential of *Nigella sativa*: A miracle herb** Times Cited: **331**
By: Ahmad, Aftab; Husain, Asif; Mujeeb, Mohd; et al.
Asian Pacific Journal of Tropical Biomedicine Volume: 3 Issue: 5 Pages: 337-352 Published: MAY 2013
- Neuropharmacological effects of *Nigella sativa*** Times Cited: **17**
By: Beheshti, Farimah; Khazaei, Majid; Hosseini, Mahmoud
AVICENNA JOURNAL OF PHYTOMEDICINE Volume: 6 Issue: 1 Pages: 124-141 Published: JAN-FEB 2016
- GABA(A), NMDA and AMPA receptors: a developmentally regulated 'menage a trois'** Times Cited: **602**
By: BenAri, Y; Khazipov, R; Leinekugel, X; et al.
TRENDS IN NEUROSCIENCES Volume: 20 Issue: 11 Pages: 523-529 Published: NOV 1997
- ANTIOXIDANT, ANTI-INFLAMMATORY, ANTICANCER AND ANTIBACTERIAL ACTIVITIES OF EXTRACTS FROM NIGELLA SATIVA (BLACK CUMIN) PLANT PARTS** Times Cited: **28**
By: Bourgou, Soumaya; Pichette, Andre; Marzouk, Brahim; et al.
JOURNAL OF FOOD BIOCHEMISTRY Volume: 36 Issue: 5 Pages: 539-546 Published: OCT 2012
- Classics in Chemical Neuroscience: Diazepam (Valium)** Times Cited: **58**
By: Calcaterra, Nicholas E.; Barrow, James C.
ACS CHEMICAL NEUROSCIENCE Volume: 5 Issue: 4 Pages: 253-260 Published: APR 2014
- Endogenous Positive Allosteric Modulation of GABA(A) Receptors by Diazepam binding inhibitor** Times Cited: **51**
By: Christian, Catherine A.; Herbert, Anne G.; Holt, Rebecca L.; et al.
NEURON Volume: 78 Issue: 6 Pages: 1063-1074 Published: JUN 19 2013
- BENZODIAZEPINE RECEPTORS AND DIAZEPAM BINDING INHIBITOR - A POSSIBLE LINK BETWEEN STRESS, ANXIETY AND THE IMMUNE-SYSTEM** Times Cited: **63**
By: FERRARESE, C; APPOLLONIO, I; BIANCHI, G; et al.
PSYCHONEUROENDOCRINOLOGY Volume: 18 Issue: 1 Pages: 3-22 Published: 1993
- Aspirin inhibits human bradykinin B-2 receptor ligand binding function** Times Cited: **3**
By: Gardes, Joelle; Michineau, Stephanie; Pizard, Anne; et al.
BIOCHEMICAL PHARMACOLOGY Volume: 75 Issue: 9 Pages: 1807-1816 Published: MAY 1 2008
- An investigation of the analgesic and anti-inflammatory effects of *Nigella sativa* seed polyphenols** Times Cited: **85**
By: Ghannadi, A; Hajhashemi, V; Jafarabadi, H
JOURNAL OF MEDICINAL FOOD Volume: 8 Issue: 4 Pages: 488-493 Published: WIN 2005
- Preclinical and clinical effects of *Nigella sativa* and its constituent, thymoquinone: A review** Times Cited: **62**
By: Gholamnezhad, Zahra; Havakhah, Shahrzad; Boskabady, Mohammad Hossein
JOURNAL OF ETHNOPHARMACOLOGY Volume: 190 Pages: 372-386 Published: AUG 22 2016
- Thymoquinone produced antianxiety-like effects in mice through modulation of GABA and NO levels** Times Cited: **49**
By: Gilhotra, Neeraj; Dhingra, Dinesh