Brought to you by INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Scopus

Back

Chemical composition and biological activities of essential oil of the Malaysian endemic Syzygium variolosum (King) Chantar. & J.Parn

Natural Product Research • Article • 2025 • DOI: 10.1080/14786419.2024.2353914

Rahim, Faezatul Alwani Mohd [a]; Salleh, Wan Mohd Nuzul Hakimi Wan [a]; Ab Ghani, Nurunajah [b,c]; Salihu, Abubakar Siddiq [a,d]; Arzmi, Mohd Hafiz [e]

[a] Department of Chemistry, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Perak, Malaysia

Show all information

4 83th percentile
Citations

1.15
FWCI

Full text Export Save to list

Document Impact Cited by (4) References (28) Similar documents

Abstract

This study was designed to investigate the chemical composition of the essential oil of Syzygium variolosum (King) Chantar. & J.Parn. and their cytotoxicity, acetylcholinesterase, antityrosinase, and anti-inflammatory activities. In total, 32 chemical components were identified in the essential oil, which made up 98.9%. The essential oil is mainly composed of β-elemene (20.2%), bicyclogermacrene (13.5%), viridiflorol (11.1%), globulol (8.6%), and selin-11-en-4α-ol (5.3%). Acetylcholinesterase, antityrosinase, and anti-inflammatory activities were evaluated with the Ellman method, mushroom tyrosinase, and lipoxygenase enzymes, respectively, while cytotoxicity was assessed using an MTT assay. The results showed that essential oil gave significant percentage inhibition (I%: acetylcholinesterase 35.2%, antityrosinase 42.5%, lipoxygenase 48.6%). Furthermore, the essential oil exhibited cytotoxicity against three cancer cell lines, HepG2, MCF7, and A549, with IC_{50} values ranging from 90.2 to 95.2 µg/mL. The current study highlights the potential of the use of essential oils as an alternative to the development of pharmaceutical antichemopreventives or cosmetics. © 2024 Informa UK Limited, trading as Taylor & Francis Group.

Author keywords

bicyclogermacrene; cholinesterase; essential oil; lipoxygenase; Syzygium variolosum; tyrosinase

Indexed keywords

MeSH

Acetylcholinesterase; Anti-Inflammatory Agents; Antineoplastic Agents, Phytogenic; Cell Line, Tumor; Cholinesterase Inhibitors; Humans; Monophenol Monooxygenase; Oils, Volatile; Plant Oils; Syzygium

EMTREE drug terms

acetylcholinesterase; bicyclogermacrene; doxorubicin; essential oil; kojic acid; lipoxygenase; viridiflorol; antiinflammatory agent; antineoplastic agent; cholinesterase inhibitor; essential oil; monophenol monooxygenase; vegetable oil

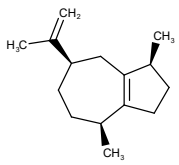
EMTREE medical terms

A-549 cell line; Alzheimer disease; antiinflammatory activity; Article; biological activity; chemical composition; chromatography; controlled study; cytotoxicity; enzyme activity; Eugenia; Eugenia involucrate; gene expression; HEK293 cell line; Hep-G2 cell line; human; human cell; hydrodistillation; IC50; isomerization; MCF-7 cell line; MTT assay; photoisomerization; Syzygium; Syzygium variolosum; chemistry; tumor cell line

Reaxys Chemistry database information

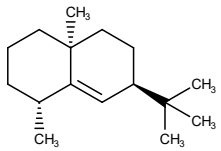
Reaxys is designed to support chemistry researchers at every stage with the ability to investigated chemistry related research topics in peer-reviewed literature, patents and substance databases. Reaxys retrieves substances, substance properties, reaction and synthesis data.

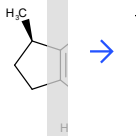
Substances View all substances (39)


View details

View details

View details


View details


View details

Powered by Reaxys

Chemicals and CAS Registry Numbers

Unique identifiers assigned by the Chemical Abstracts Service (CAS) to ensure accurate identification and tracking of chemicals across scientific literature.

acetylcholinesterase	9000-81-1
doxorubicin	23214-92-8, 25316-40-9
kojic acid	501-30-4
lipoxygenase	9027-17-2, 9029-60-1

Show more

Funding details

Details about financial support for research, including funding sources and grant numbers as provided in academic publications.

Funding sponsor	Funding number	Acronym
Fundamental University	GPUF) 2022 [2022-0130-102-01	

Funding text
This research was supported by the Fundamental University Research Grant (GPUF) 2022 [2022-0130-102-01]. The authors would like to thank Dr. Shamsul Khamis, Director of Fraser\u2019s Hill Research Center for plant identification and collection at Fraser\u2019s Hill, Pahang.

Corresponding authors

Corresponding author	W.M.N.H.W. Salleh
Affiliation	Department of Chemistry, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Perak, Malaysia
Email address	wmnhakimi@fsmt.upsi.edu.my

© Copyright 2025 Elsevier B.V., All rights reserved.

Abstract

Author keywords

Indexed keywords

Reaxys Chemistry database information

Chemicals and CAS Registry Numbers

Funding details

Corresponding authors

About Scopus

What is Scopus

Content coverage

Scopus blog

Scopus API

Privacy matters

Language

日本語版を表示する

查看简体中文版本

查看繁體中文版本

Просмотр версии на русском языке

Customer Service

Help

Tutorials

Contact us

ELSEVIER

Terms and conditions ↗ Privacy policy ↗ Cookies settings

All content on this site: Copyright © 2026 Elsevier B.V. ↗, its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the relevant licensing terms apply.

RELX™