

OPEN ACCESS

YOUR ACCOUNT

[Update your registration details](#)[Update your areas of interest](#)[Modify your password](#)

YOUR ORDERS

[Order to be completed](#)[Completed orders](#)

SHOPPING BASKET

Items: 0

Total amount: € 0,00

[Order details and checkout](#)

HOW TO ORDER

[Journals](#)[Books](#)

YOUR SUBSCRIPTIONS

[Activate](#)[View](#)[Contact subscription department](#)

YOUR ARTICLES

[View](#)

YOUR EBOOKS

[View](#)

COUPON

[Enable your coupon](#)

ACCESSIBILITY


[Standard viewing](#)[Larger font](#)[Text only](#)[High-contrast layout](#)

ORIGINAL ARTICLE

Minerva Biotechnology and Biomolecular Research 2023 September;35(3):161-72DOI: [10.23736/S2724-542X.23.02990-5](#)

Copyright © 2023 EDIZIONI MINERVA MEDICA

language: English

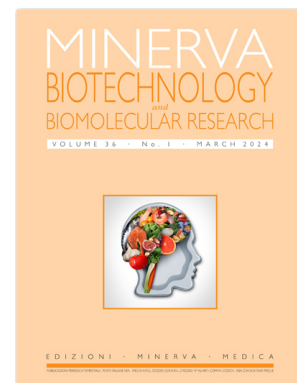
Trema Orientalis (Linn) Blume stem bark: polyphenol profile, in-vitro antioxidant and anti-proliferative activities on the A549 cell lineVictor O. MAKANJUOLA ^{1,2}, Robin ROBIN ^{3,4} , Pardeep KAUR ^{4,5}, Saroj ARORA ⁴, Francis I. DURU ¹, Abraham A. OSINUBI ¹, Bamidele OKOLI ^{6,7}, Ajay KUMAR ⁸, Shafiul HAQUE ⁹, Hardeep S. TULI ¹⁰

¹ Department of Anatomy, Faculty of Basic Medical Sciences, College of Medicine, University of Lagos, Lagos, Nigeria; ² Department of Anatomy, Faculty of Basic Medical Sciences, Bingham University, Karu, Nigeria; ³ Agilent Technologies India Pvt. Ltd. & Regional Water Testing Laboratory, Department of Water Supply and Sanitation, Government of Punjab, Amritsar, India; ⁴ Department of Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar, India; ⁵ Post Graduate Department of Botany, Khalsa College, Amritsar, India; ⁶ Department of Chemical Sciences, Faculty of Science and Technology, Bingham University, Karu, Nigeria; ⁷ Institute of Chemical and Biotechnology, Vaal University of Technology, Southern Gauteng Science and Technology Park, Vanderbijlpark, South Africa; ⁸ University Center for Research and Development (UCRD), Biotechnology Engineering & Food Technology, Chandigarh University, Mohali, India; ⁹ Research and Scientific Studies Unit, College of Nursing and Allied Health Sciences, Jazan University, Jazan, Saudi Arabia; ¹⁰ Department of Biotechnology, Maharishi Markandeshwar Engineering College, Maharishi Markandeshwar University, Mullana, India

HTML PDF

BACKGROUND: *Trema orientalis* (Linn) Blume is a plant that can be found in Australia, Asia, and Africa. Its stem bark is utilized in western Nigerian traditional medicine to cure a variety of illnesses. The study was designed to evaluate the polyphenol profile, antioxidant and anti-proliferative activity of methanol extract, butanol and aqueous fractions of *T. orientalis*.

METHODS: Maceration was used to generate the methanol extract, and solvent-solvent partitioning was used to produce the butanol and aqueous fractions. DPPH, metal chelating, and various reducing power assays were used to evaluate the antioxidant activity of the extract/fractions. The anti-proliferative activity of the extract/fractions on the A549 cell line was investigated using MTT assay, DAPI (4', 6-diamidino-2-phenylindole) staining, and measurements of mitochondria membrane potential (MMP), intracellular reactive oxygen species (ROS), along with Western blot, and RT-qPCR studies. Using ultra-high performance liquid chromatography (U-HPLC) with a diode detector and a C18 column, the polyphenolic contents of the extract/fractions were identified.



JOURNAL TOOLS

[Publishing options](#)[eTOC](#)[To subscribe](#)[Submit an article](#)[Recommend to your librarian](#)

ARTICLE TOOLS

[Publication history](#)[Reprints](#)[Permissions](#)[Cite this article as](#)[Share](#)