medical sciences forum

MDPI

Abstract

Bridelia speciosa Müll.Arg. Stem bark Extracts as a Potential Biomedicine: From Tropical Western Africa to the Pharmacy Shelf †

Claudio Ferrante

Department of Pharmacy, Università degli Studi "Gabriele d'Annunzio", via dei Vestini 31, 66100 Chieti, Italy; claudio.ferrante@unich.it

† Presented at the 1st International Electronic Conference on Molecular Sciences: Druggable Targets of Emerging Infectious Diseases, online, 01-14 September 2021.

Academic Editor: Clemente Capasso

Published: 31 August 2021

Abstract: Bridelia species have been used in traditional African medicine for the management of diverse human ailments. In the current work, the detailed phytochemical profiles of the extracts of the stem bark of B. speciosa were evaluated and the antioxidant and enzyme inhibitory properties of the extracts were assessed. The anti-bacterial and anti-mycotic effects of the extracts were evaluated against selected pathogen strains. Additionally, the anti-proliferative effects were studied on the liver cancer HepG2 cell line. Finally, the putative protective effects were assessed on isolated rat liver that was challenged with lipopolysaccharide (LPS). The results revealed the presence of 36 compounds in the ethyl acetate extract, 44 in the methanol extract, and 38 in the water extract. Overall, the methanol extract showed the highest antioxidant activity, particularly in LPS-stimulated rat liver. Additionally, this extract exerted the highest antimycotic effect on C. al-bicans, whereas the water extract showed a promising anti-proliferative effect on liver cancer HepG2 cells. The methanol extract was also the most active as enzyme inhibitor, against acetyl-cholinesterase and butyrylcholinesterase. The current study appraises the antioxidant and enzyme inhibition properties of B. speciosa methanol extract and showed that this specie could be a prom-ising source of biologically active phytochemicals, with potential health uses.

Keywords: *Bridelia speciosa*; qualitative fingerprint; anti-proliferative; antimicrobial; antioxidant; phenolic compounds