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PHYTOCHEMICAL PROFILE AND BIOLOGICAL PROPERTIES OF *PISTACIA VERA L* HULL ESSENTIAL OIL

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Although the chemical composition and biological properties of some species of the genus *Pistacia* has been investigated, studies on hull essential oil of *Pistacia vera L* variety Bronte (HEO) are currently lacking. In this work, we have carried out an in-depth phytochemical profile elucidation by Gas Chromatography-Flame ionization and Mass Spectrometry (GC-FID and GC-MS) analysis, and an evaluation of antioxidant scavenging properties, using several *in vitro* methods, and checking its cytoprotective potential on lymphocytes treated with tert-butyl hydroperoxide. Moreover, the antimicrobial activity against standard and clinical Gram-positive and Gram-negative as well as *Candida sp*. strains, was also investigated. Quali-quantitative analysis highlighted the richness of this complex matrix, with the identification of 40 derivatives. The major components identified were 4-Carene (31.743%), α-Pinene (23.584%), D-Limonene (8.002%), and 3-Carene (7.731%). The HEO showed a strong iron chelating activity and was found to be markedly active against hydroxyl radical. Moreover, HEO pre-treatment increase significantly the cell viability, decreasing the lactate dehydrogenase (LDH) release. HEO was bactericidal against all the tested strains at the concentration of 7.11 mg/mL, with the exception of *Pseudomonas aeruginosa* ATCC 9027, and fungicidal at concentrations between 2.50 and 5.0 mg/ml. The obtained results demonstrate the strong free-radical scavenging activity of HEO along with remarkable cytoprotective and antimicrobial properties, which makes the HEO potentially useful, particularly, in the treatment of fungal infections, especially drug-resistant ones.

BIOGRAPHY

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