

IN VITRO EVALUATION OF ANTIOXIDANT, CYTOPROTECTIVE AND ANTIMICROBIAL PROPERTIES OF ESSENTIAL OIL OF PISTACIA VERA L. VARIETY BRONTE HULL.

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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 (HEOPVVB) are currently lacking.

A phytochemical profile elucidation, by GC-MS analysis, and evaluation of antioxidant and free-radical scavenging properties of HEOPVVB, using different in vitro methods (DPPH, TEAC, FRAP, Iron-chelating capacity, superoxide anion and hydroxyl radical scavenging assays), were carried out. Cell viability as well as LDH release, on tert-butyl hydroperoxide (t-BOOH) treated lymphocytes were evaluated. The antimicrobial activity against Gram positive and Gram negative strains (both ATCC and clinical isolates) was investigated.

The major components identified were 4-Carene (31.743%), α -pinene (23.584%), D-limonene (8.002%) and 3-Carene (7.731%). The HEOPVVB showed a strong iron chelating activity and was found markedly active against hydroxyl radical, while scarce effects was found against DPPH radical. Moreover, pre-treatment with HEOPVVB significantly increase the cell viability decreasing the LDH release. HEOPVVB was bactericidal against all the tested strains at the concentration of 7.11 mg/ml, with the exception of *Pseudomonas aeruginosa* ATCC 9027.

These results demonstrate the strong antioxidant and free-radical scavenging activity of HEOPVVB along with remarkable cytoprotective and antimicrobial properties.