

3RD WORLD CHEMISTRY CONFERENCE &

World Congress on

BIOTHERAPEUTICS AND BIOANALYTICAL TECHNIQUES

September 11-12, 2017 Dallas, USA

In vitro evaluation of the antioxidant, cytoprotective, and antimicrobial properties of essential oil from Pistacia vera L. variety bronte hull**Antonella Smeriglio**

University of Messina, Italy

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-Mass Spectrometry (GC-MS) analysis, and an evaluation of antioxidant scavenging properties of HEO, using several different *in vitro* methods, checking also its cytoprotective potential on lymphocytes treated with tert-butyl hydroperoxide. Moreover, the antimicrobial activity against Gram-positive and Gram-negative strains, both American Type Culture Collection (ATCC) and clinical isolates, was also investigated. GC-MS 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, while scarce effects were found against 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical. Moreover, pre-treatment with HEO was observed to significantly increase 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, except for *Pseudomonas aeruginosa* ATCC 9027. The obtained results demonstrate the strong free-radical scavenging activity of HEO along with remarkable cytoprotective and antimicrobial properties.

asmeriglio@unime.it