World Academy of Science, Engineering and Technology
International Journal of Biomedical and Biological Engineering
Vol:9, No:04, 2015

Phenolic Analysis, Antioxidant Capacity and Antimicrobial Activity of Origanum glandulosum Desf Extract from Algeria

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Abstract : The antioxidant and antimicrobial activities of Origanum glandulosum collected in Algeria have been studied. Extract was prepared from aerial part of endemic Algerian oregano. The produced extract has been characterized in terms of total phenols (using Folin method), total flavonoid, antioxidant activities (using the DPPH radical scavenging method and ORAC assay) and microbial activity against four bacteria: Streptococcus aureus, Bacillus subtilis, Escherichia coli, Klebsiella pneumoniae one yeast: Candida albicans and one fungi: Aspergillus niger. The results pointed the antioxidant activities of the extract of O. glandulosum and antimicrobial activities against all bacteria and C. Candida, but no effect on A. niger. High performance liquid chromatography combined with mass spectrometry (LC-MS) and nuclear magnetic resonance (LC-NMR) were used to separate and identify the major compounds present in the oregano extract. Rosmarinic acid, globoidnan A and B, lithospermic acid B and three flavonoids were identified.

Keywords : origanum glandulosum, antioxidant, microbial activity, polyphenol, LC-MS, LC-NMR
Conference Title : ICMBPS 2015 : International Conference on Medical, Biological and Pharmaceutical Sciences
Conference Location : Boston, United States
Conference Dates : April 20-21, 2015