

Antioxidant and Antimicrobial Activities of Phenolic Extracts of Endemic Plants *Marrubium deserti* and *Ammodaucus leucotrichus* from Algeria

Authors : Sifi Ibrahim, Benaddou Fatima Zohra, Yousfi Mohamed

Abstract : The *Marrubium deserti* and *Ammodaucus leucotrichus* L. an Algerian endemic species, has several applications in traditional medicine for example as a remedy for asthma and diabetes, and was found to have antibacterial properties. In this work, an antioxidant and antimicrobial activities was performed on phenolic extracts of *Marrubium deserti*, *Ammodaucus leucotrichus* plants. The yield of methanol maceration of these plants is 12.4% and 20.4% respectively. The content of total polyphenols, flavonoids and anthocyanin in methanolic extracts, are varied between 19.52 ± 1.88 and 59.24 ± 3.45 mg/g gallic acid equivalent, and 2.08 ± 0.29 to 1.46 ± 0.39 mg/g quercetin equivalent, and 0.395 to $1.934 \mu\text{mol/g}$ respectively. The total chlorophylls and carotenoids were be ranged from 0.149 ± 0.20 to 1.537 ± 0.20 g/ml and 1.537 ± 0.20 to 0.149 ± 0.20 g/ml, respectively. According to DPPH and FRAP test, the values of EC50 was shows a higher activity of *Marrubium deserti* than *Ammodaucus leucotrichus* with EC50 values (DPPH) were $34.53 \pm 0.71 \mu\text{g/mL}$ and 258.60 ± 15.67 mg/ml respectively. The TEAC values of FRAP test was a highly superior for *Marrubium deserti* 209.66 ± 0.26 mg Equivalent Trolox/g dry residue than *Ammodaucus leucotrichus* 45.88 ± 2.93 mg Trolox Equivalent/g dry residue. The antimicrobial activity against nine strains of bacteria (*Staphylococcus aureus*(+), *Staphylococcus aureus* (-), *Bacillus cereus*, *Enterococcus faecalis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* and *Salmonella typhi*), was showed that the tested extracts are a significant antibacterial activity with inhibition zones ranging from 10 to 50 mm. the value of CMI were ranging from 0.89 to 14.29 mg/ml.

Keywords : phenolic extract, antioxidant activity, antimicrobial activity, *Marrubium deserti*, *Ammodaucus leucotrichus*

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