

Antioxidant property of two Star Thistles (Centaurea) from Iran

H. Hajimehdipoor¹, A. Bandidarian^{2,*}, M. Hamzeloo Moghadam³, M. Mosaddegh¹

¹*Traditional Medicine and Materia Medica Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

²*Pharmaceutical Sciences Branch, Islamic Azad University, Tehran, Iran*

³*Department of Traditional Pharmacy, School of Traditional Medicines, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

Background and Aims: Free radicals and reactive oxygen species can give the consequence of oxidative damage to various biomolecules including lipids, proteins and DNA which can cause development of versatile disorders such as coronary heart disease, cancer, diabetes, hypertension and neurodegeneration conditions and Materials which possess antioxidant property might have great potential in improving these diseases. Nowadays, there are overwhelming interests in finding naturally occurring antioxidants, and as *Centaurea aucheri* and *Centaurea albonites* (Asteraceae) have not been studied in this area before, we have decided to evaluate their antioxidant activity by examining their ability to scavenge DPPH radicals and reduce ferric by DPPH and FRAP experiments, respectively.

Methods: Aerial parts of the species were macerated with methanol 80% and different concentrations were prepared. Antioxidant activity of the extracts was determined by FRAP assay with FeSO₄ calibration curve. Radical scavenging activity was determined by DPPH free radicals at 517 nm and the IC₅₀ of each extract was calculated. BHT was used as positive control.

Results: The FRAP assay demonstrated that the antioxidant content of the extracts functioned as the reducing agents in a redox-linked colorimetric reaction with values of 509.5±71.9 and 483.7±36.5 μM of FeSO₄/g of extract for *C. aucheri* and *C. albonites*, respectively. The results of DPPH assay revealed that the extracts possessed antioxidant activity with the IC₅₀ of 103.8±5.2 and 104.5±7.6 μg/ml for *C. aucheri* and *C. albonites* respectively.

Conclusions: Both extracts showed similar antioxidant properties in DPPH and FRAP assay which is acceptable for total plant extracts, however phytochemical investigations in order to isolate active components are necessary.

Keywords: DPPH; FRAP; Antioxidant activity; *Centaurea*; Asteraceae