



Evaluation of antioxidant activity and phenolic contents and identification of main compounds of various extracts from *Artemisia aucheri* aerial parts

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Background and objectives: *Artemisia aucheri* Boiss. is regarded as one of 34 *Artemisia* species growing in Iran. The aim of this study was to undertake an investigation of the antioxidant activity as well as identification of main compound of different extracts and fractions of *A. aucheri*. **Methods:** Antioxidant activity and total phenolics content of five different extracts (petroleum ether, dichloromethane, ethyl acetate, ethanol and ethanol-water) and five fraction of ethanol extract was investigated by three different methods (2,2-diphenyl-1-picrylhydrazyl radical scavenging method, ferrous ion chelating assay and β -catotene bleaching test) and Folin-Ciocalteu method, respectively. Purification of major constituents of the most active fraction was done by preparative and semi preparative HPLC. For one of the isolated compounds, structure elucidation was achieved using spectroscopic techniques (ESIMS, 1D NMR, 2D NMR) experiments. **Results:** Hydroethanolic extract exhibited the strongest inhibitory activity in BCB assay in comparison with other extracts. The ethanol extract was the most active one in DPPH assay while none of the extracts showed notable ferrous ion chelating activity. Fraction 40% MeOH in water showed both the highest total phenolics content and the most potent DPPH radical scavenging activity. Statistical analysis did not show any significant difference between the two aforementioned assays in screening the samples for the antioxidant ability. One known caffeic acid derivative, ethyl caffeate, was isolated from the most active fraction of ethanolic extract. **Conclusion:** The findings of present study suggested that *A. aucheri* may be regarded as a potential source of natural antioxidants.

Keyword: *Artemisia aucheri*, structure elucidation, total phenolics content