



Evaluation of chemical composition and biological activity of the aerial parts of *Artemisia fragrans*

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Background and objectives: The genus *Artemisia*, an important member of the Asteraceae family, is mostly distributed in Europe, North America, Asia and South Africa, and represented in Iranian flora by 34 species. In the Iranian traditional medicine these plants were used as anthelmintic and anti-inflammatory. The presence of sesquiterpene lactones and germacranolides were reported in *A. fragrans*. Our objective in this investigation was to identify the chemical constituents and antioxidant activity of *A. fragrans*. **Methods:** The essential oil (EO) and different extracts (*n*-hexane, dichloromethane, and methanol) of the aerial parts of *A. fragrans* were obtained by hydro-distillation and Soxhlet apparatus. The essential oil was analyzed by GC-MS and GC-FID. For further investigation, the MeOH extract (2 g) was subjected to Sep-Pack fractionation using a step gradient of MeOH-water. Moreover, the free radical scavenging activity of the EO and extracts was evaluated by the 2, 2-diphenyl -1-picrylhydrazyl (DPPH) method. **Results:** The GC-MS analysis, led to the identification of six main monoterpenes accounting for the 88.7% of the total components present. Among the extracts, camphor was the main component. The essential oil of *A. fragrans* displayed weak antioxidant activity whereas the antioxidant activity of the MeOH extract was high. The analysis of the 20% and 40% methanolic Sep-Pack fractions resulted in the isolation of two flavonoid glycosides and one dipeptide. **Conclusion:** The results of the present study introduced *A. fragrans* as a new source of flavonoid glycosides and suggested it as an appropriate candidate for further radical scavenging studies.

Keywords: antioxidant assay, *Artemisia fragrans*, GC-FID, GC-MS