

Detection of Sesquiterpene Lactones in Ten *Artemisia* Species Population of Khorasan Provinces

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Abstract

Objective

During the last three decades sesquiterpenoid lactones have emerged as one of the largest groups of plant products with over 3000 naturally occurring substances known. The genus *Artemisia* characteristically contains this biologically active type of secondary metabolites. With respect to increasing interest in the cytotoxic, antibiotic, phototoxic and antineoplastic activities of sesquiterpene lactones, identification of these compounds in Khorasanian *Artemisia* species, that some of them are endemic to Iran, can be worth while.

Materials and Methods

Ten species of *Artemisia* were collected from different parts of Khorasan Provinces of Iran. IR spectra recorded as KBr disks and in CH₂Cl₂ on a Unicam dp 110 spectrometer (UK). ¹H-NMR (500 MHz) spectra were measured in CDCl₃ using a Bruker DRX 500 spectrometer. Number of scans was 32 for all of the samples. The Herz-Högenauer technique was applied for preparation of the terpenoid extracts.

Results

Our findings revealed that *A. absinthium*, *A. ciniformis*, *A. fragrans*, *A. khorassanica*, *A. kopetdaghensis*, *A. santolina* and *A. sieberi* had a high amount of sesquiterpene lactones. A little or no sesquiterpene lactone had been detected in other species. Differentiation of saturated and unsaturated sesquiterpene lactones was one of the advantages of ¹H-NMR application in this method.

Conclusion

Many of tested Khorasanian *Artemisia* species contained high amounts of sesquiterpene lactones.

Keywords: *Artemisia*, ¹H-NMR, IR, Sesquiterpene lactone

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