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Abstract

Identification and determination of chemical compounds of five aromatic waters from Iran

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Background and objectives: Herbal aromatic waters are one of the products used in the Iranian traditional medicine. These products have small amount of essential oil. The purpose of this study was to identify the effective substances of herbal aromatic waters by various techniques (GC/FID and GC/MS). It is hoped that with assessment of these compounds by mentioned techniques a suitable way could be found for standardization of the herbal aromatic waters**. Methods:** Four medicinal plants (*Zataria multiflora, Fumaria parviflora, Rosa damascena*, and *Mentha spicata*) and aromatic water of *Salix aegyptiaca* were purchased from Tehran and their aromatic waters were extracted by hydrodistillation. In the next step, the essential oils of these aromatic waters were extracted by *n*-hexane and injected into GC/FID and GC/MS and chemical compounds were identified. Also, the standard components (thymol, carvone and 2-phenylethanol) were injected to GC, separately and calibration curves were drawn. So, the content of the major components was calculated, carefully. **Results:** The results showed that the essential oil of *F. parviflora* contained more than 30 compounds. Its main compounds included carvacrol (16.7%) and dihydroactinidiolide (13.8%). The essential oil of *Salix aegyptiaca* had 27 different compounds including 1,4-dimethoxybenzene (33.3%) and heptacosane (28.1%). *Z. multiflora*, *M. spicata* and *R. damascena* essential oils contained thymol (0.065 mg/mL), carvone (0.01 mg/mL) and 2-phenylethanol (0.015 mg/mL), as the main component, respectively. **Conclusion**: These results can be helpful for standardization and quality control of aromatic waters used in Iran.

Keywords: *Fumaria parviflora, Mentha spicata, Rosa damascena, Salix aegyptiaca, Zataria multiflora*

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