Ferric reducing property of three species of Ferula (Apiaceae) from Iran

M. Hamzeloo Moghadam¹, F. Fotoohi²*, H. Hajimehdipoor³, S. Esmaeili³, F. Naghibi¹

¹Traditional Medicine and Materia Medica Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran
²Pharmaceutical Sciences Branch, Islamic Azad University, Tehran, Iran
³Department of Traditional Pharmacy, School of Traditional Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Background and Aims: The genus of Ferula (Apiaceae) has been represented in Iran by 31 species which 16 species are endemic to Iran. Many investigations have proved different biological activity of these plants and in the present study the antioxidant activity of three species F. Szowitsiana, F. hirtella and F. oopoda has been evaluated through FRAP (Ferric Reducing Antioxidant Power) assay.

Methods: Dried and milled aerial parts of the species were extracted by using methanol and maceration method. The extracts were dried under reduced pressure. Antioxidant properties of the extracts were determined by a colorimetric method of FRAP at 593 nm with FeSO₄ calibration curve. BHT was used as positive control.

Results: The FRAP values of the extracts were calculated as 579.1±7.7, 337.4±7.7 and 612.0±68.3µM FeSO₄/g of extract for F. Szowitsiana, Ferula hirtella and Ferula oopoda respectively.

Conclusions: The results of the FRAP assay demonstrated antioxidant activity of the extracts. Since, Ferula species are rich in sesquiterpene lactones and coumarins, these compounds may be considered as antioxidant agents in these plants, however, further phytochemical investigations are necessary.

Keywords: FRAP; Antioxidant activity; Ferula oopoda; Ferula Szowitsiana; Ferula hirtella; Apiaceae