

Abstract

Medicinal Herbs are rich in phenolic compounds, which are considered most important natural antioxidants. In the present study, the antioxidant activity of medicinal plant extracts of *Urtica dioica* L. aerial parts were evaluated and compared. Therefore, the microwave-assisted extraction and traditional methods were performed. In order to optimize the microwave extraction conditions, the parameters affecting the extraction efficiency such as instrument power (200-600 W), the type of extraction solvent (water, ethanol and methanol), extraction temperature (60-110 °C) and time (2-20 min) were investigated. For traditional extraction herb powder in the presence of solvent (water, ethanol and methanol) for 48 hours were placed on the electric mixer. To evaluate the antioxidant activity, extract in 1:1 to 2,2-diphenyl-1-picrylhydrazyl (DPPH) chemical reagent was added and placed in a dark place. Then, the solution to high performance liquid chromatography (HPLC) was injected. Progress of the reaction between the extract and represent reagent, the amount of antioxidant activity was determined. Finally, the results were analyzed by SPSS software. This research showed that the antioxidant activity of extract of leave is more than the stem.

Keywords: *Urtica dioica* L ; Antioxidant Activity ; Microwave Assisted Extraction ; High Performance Liquid Chromatography ; DPPH.



University of Zabol

Graduate school

Faculty of Science

Department of Chemistry

The Thesis Submitted for the Degree of M. Sc

In the field of Analytical Chemistry

**Evaluation and Comparison of Antioxidant
Activity of *Urtica dioica* L. Leaf and Stem by
MAE**

Supervisor:

Dr. M. Nejati Yazdinezhad

Advisor:

Dr. Gh. R. Motalleb

By:

M. R. Lohrasbi Dashtaki

January 2013