

Abstract

The effects of free radicals and active oxygen species on biological molecules have created very problems in recent years. These compounds are known to be responsible for oxidative deterioration of vital molecules such as proteins, lipids and nucleic acids. Antioxidants protect biological systems against these factors and have been suggested to play a preventing role in human health. In the present study, the antioxidant activity of water and alcoholic extracts of walnut leaves and kernel was determined. The extracts obtained by ultrasonic and traditional methods. 2,2-Diphenyl-1-picrylhydrazyl (DPPH) was added to the extracts and the antioxidant activity was determined by amount of reagent consumption. For tracking the progress of the reaction, high performance liquid chromatography (HPLC) was used. In order to optimize the extraction conditions, effective parameters such as extracting solvent, temperature and time were investigated. Finally, the results were analyzed by SPSS software. Analysis of variance (ANOVA) suggests that there are significant differences between extraction methods ($P < 0.05$).

Keywords: Antioxidant activity, *Juglans regia* L., Ultrasonic assisted extraction, DPPH.



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**Evaluation and Comparison of Antioxidant
Activity of *Juglans regia* L. Leaf and Kernel
using Ultrasonic Waves**

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