

Antioxidant activity and phenolic content of some medicinal plants traditionally used in Northern Iraq

Abdul-Lateef Molan^{1,*}, Abbas Mohamad Faraj², Abdulkhaliq Saleh Mahdy³

¹ Institute of Food, Nutrition and Human Health, Massey University, Private Bag 11 222, Palmerston North, New Zealand.

² College of Pharmacy, Hawler Medical University, Iraqi Kurdistan, Erbil, Iraq.

³ College of Agriculture, Diyala University, Diyala, Iraq.

*Corresponding Author: Email: A.L.Molan@massey.ac.nz

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Abstract

Several herbal plants have been used as therapeutics in Iraqi traditional medicine and phenolic content and antioxidant activity may contribute to their pharmacological effects. The total phenolic contents (TPC) and the antioxidant activities of water and ethanol extracts of 14 medicinal plants which had been used in Iraqi traditional medicine were investigated. The TPC were measured by Folin-Ciocalteu method. The antioxidant activity was assessed by ferric reducing antioxidant power (FRAP) assay and the scavenging activity towards 2, 2'-diphenyl-1-picryl hydrazyl (DPPH)-radical. Antioxidant activities as measured by FRAP and the scavenging activity towards DPPH radical was significantly correlated with TPC among all the plants studied. In most of the plants the TPC and the antioxidant activity of the ethanol extracts were significantly higher ($P < 0.05$) than that of water alone extracts. The results suggest that phenolic compounds are the significant contributors to the antioxidant activity of the medicinal plants studied. This study shows that the studied plants are good sources of free-radical scavenging compounds and may explain their traditional medicinal application. Therefore, ingestion of extracts from these plants may help to prevent *in vivo* oxidative damage associated with diseases and illnesses, for which the local traditional healers used some of these plants.

Keywords: Antioxidant activity; phenolic content

Introduction

In many parts of the world, medicinal plants are used as a source of phytochemicals to cure various illnesses such as urinary infections, cervicitis vaginitis, skin infections, blood infections, and gastrointestinal disorders (Caceres *et al.*, 1990; Bratner and Grein, 1994; Meyer *et al.*, 1996). In general, medicinal plants are the backbone of the traditional medicine (Farnsworth, 1994).