MINERAL COMPOSITION, PHYTOCHEMICAL EXPLORATION AND ANTIOXIDANT ACTIVITIES OF AN ENDEMIC TAXA: *HYPOCHAERIS LAEVIGATA* VAR. *HIPPONENSIS* MAIRE

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Abstract. The aim of the present work is the scientific evaluation of an Algerian endemic taxa (*Hypochaeris laevigata* var. *hipponensis* Maire) widely used in folk medicine. For this objective, the active compounds, mineral element composition and antioxidant effects of three different extracts prepared from leaves were determined. Essays were started by a phytochemical screening, followed by mineral elements determination and leaf extract preparation using three organic solvents. The concentration of polyphenols, flavonoids, tannins, flavanols and orthodiphenols was determined in each extract as well as the radical scavenging activities and the total antioxidant properties. Correlation between bioactive compounds and antioxidant activities was also evaluated. Ethyl acetate extract showed the highest levels of polyphenols while the lowest one was found in raw extract, which contains the most important tannins. However, the lowest rate in anthocyanin was noted in butanol extract. Our data indicated that antioxidant properties varied according to extract type and radical scavenging used assay, indeed the half-maximal inhibitory concentration (IC_{50}) value ranged between 0.71 ± 0.02 and 7.00 ± 0.62 mg/g extract. Several positive correlations between secondary metabolite contents and antioxidant activities were registered. The obtained results support the influence of solvent extracts on bioactive compounds. These phytochemical constituents as well as mineral elements provide substantial antioxidant activities and explain the effectiveness of the studied species as traditional remedy.
Keywords: *Hypochaeris laevigata var. hipponensis Maire, radical scavenging, Algerian species, bioactive compounds, solvent extraction*

Introduction

Several scientific papers have indicated that reactive oxygen species (ROS) could be possibly involved in the etiology of large panoply of human pathologies and/or the development of their complications. In parallel, numerous studies have proven the antioxidant effects of many botanical species. It has been reported that the protective actions

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