

Abstract

Introduction: Plant extract and antioxidant compounds of plants have a critical role in health providing, so that they can play an important role in maintaining health and preventing cardiovascular disease, cancer, etc. The studies conducted by researchers and pre-established pilots indicate that there are potential antioxidant compounds in the *Levisticum officinale*, which in this thesis we aimed to evaluate the antioxidant effects of various extracts of *L.officinale* and the fractions obtained from of them.

Materials and methods: In this study, first ethyl- acetate extract of the root, was selected as the main sample for fraction preparation. Then, in order to prepare different fractions based on polarity several solvent systems were used. To obtain IC₅₀, four concentrations of samples were tested. Then, the concentration curve was plotted against the percentage of free radical scavenging, and from the line equation, the concentration that causes 50% of free radical scavenging was obtained.

Discussion and conclusion: In this study, the fraction of 50% n-hexane- 50% ethyl acetate of the root of *L.officinale* showed acceptable antioxidant properties, therefore, this extract and the resulting fraction can be used to produce topical and dietary supplements with antioxidant properties to prevent and treat systemic diseases.

Key words: Antioxidant, *Levisticum officinale*, fraction, extract