Abstract

Charles University

Faculty of Pharmacy in Hradec Králové

Department of Pharmaceutical Botany and Ecology

Candidate: Kamila Zemanová

Supervisor: PharmDr. Jana Karlíčková, Ph.D.

Title of Thesis: Interaction of phenylpropionic acids with copper

Copper is an essential trace element which is essential for our body. It has a significant effect on the correct functioning of important organs and it plays an important role in the transfer of electrons at the major enzymatic pathways as a prostetic group. On the other hand, excess or deficiency of copper in the human body can cause many diseases.

Phenylpropionic acids are group of substances which can have antioxidant, anti-inflammatory and anticancer effects. They are involved in the scavenging of free radicals and reactive oxygen species.

In this diploma thesis, I tested copper chelating activity of six phenylpropionic acids at different pHs by spectrofotometric methods using a hematoxylin and a bathocuproinedisulfonic acid disodium salt as an indicator.

3-(3,4-dihydroxyphenyl)propionic acid showed the highest chelating potential but only using a hematoxylin.

KEYWORDS: Copper, Phenylpropionic acids, Antioxidants, Chelating activity, Hematoxylin, Bathocuproin