ABSTRACT

Michalicová A., Assessment of copper chelation of flavones by bathocuproine method, Rigorous thesis 2013/2014, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, pp.62.

In the human body, copper is the third most widespread trace element. It is responsible for the proper function of various enzymes, which are involved in many important metabolic processes. The maintenance of copper homeostasis is essential for human and its disorders lead to different diseases and pathological changes.

Plants produce a large number of metabolites, which are generally divided into primary and secondary. Secondary metabolism, built on primary metabolism, is not necessary for plant life, but offers a wide range of biological effects, used in medicine and pharmacy. Some secondary metabolites from the group of flavones also show chelating activity and are capable of forming chelating complexes with transition elements, such as copper, iron, etc. Thanks to their properties, they could introduce potential therapeutic solutions for copper homeostasis disorders.

This thesis deals with the chelating activity of six flavones with the substitution on the ring A – 5-hydroxyflavone, baicalein, baicalin, chrysin, mosloflavone and negletein.

Baicalein exhibited the highest chelating activity, while the baicalin chelating activity was the lowest one. The chelating activity of flavones is, to a high degree, affected by their structure.

Key words – secondary metabolism, flavones, copper, chelation, bathocuproine method