

## **Abstract**

Humans are exposed to various carcinogens during their life. One of the main sources of carcinogens is a human diet which plays an important role in the cancer development. This bachelor thesis deals with carcinogens that are formed during a technological food processing or cooking of food - polycyclic aromatic hydrocarbons, heterocyclic amines and nitrosamines, then carcinogens produced by fungi - mycotoxins, and carcinogens that are produced by plants - safrole, estragole and pyrrolizidine alkaloids. Among numerous enzymes involved in metabolism of carcinogens, cytochromes P450 belong to the most important ones. These enzymes constitute a superfamily of haem-thiolate proteins, which is significantly involved in the metabolism of many foreign compounds (e.g. carcinogens, drugs, pollutants). Cytochromes P450 catalyze mainly reactions leading to detoxification of harmful compounds. Besides these reactions, the metabolic activation of compounds to more toxic products may occur. Cytochromes P450 play an important role in the activation of carcinogens to reactive electrophiles causing DNA damage. The subject of this bachelor thesis is to show mechanisms of metabolic activation of carcinogens.

**Key words:** cytochromes P450, carcinogenesis, food carcinogens

(In Czech)