# ABSTRACT

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Title of rigorosum thesis: **Investigating of anthocyanidins as the putative ligands of the human constitutive androstane receptor (hCAR) *in vitro***

Anthocyanidins are natural flavonoid compounds occurring in various fruits and berries, which represent an important part of the normal healthy diet. In addition to their doubtless health benefits, recent studies have suggested that flavonoids are able to activate xenosensors and therefore regulate a wide range of xenobiotic enzymes involved in the biotransformation of drugs, which might be associated with the increased risk of drug-food interaction.

Human constitutive androstane receptor (hCAR) is a xenosensor and a nuclear receptor, which regulates the activity of various hepatic and extrahepatic biotransformation enzymes, especially from the CYP superfamily.

In this thesis we used the molecular biology methods - Gene reporter assay and Two-hybrid assay to examine the ability of 6 diverse anthocyanidins, cyanidin, delphinidin, malvidin, pelargonidin, peonidin and petunidin to activate the hCAR receptor *in vitro*. We found, that none of the examined anthocyanidins has activated hCAR in the statistically significant matter.