

## Abstract

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Title of diploma thesis: Study of expression of biotransformation enzymes and transport proteins in kidneys

Xenobiotics are a part of the everyday life of living organisms. Their source is, among other things, diet, environment, administered medicines, food colorings and others. The living organisms have developed complex metabolic processes that eliminate these substances from the body in order to protect themselves against their negative influence.

Within this work, we specifically focused on the effect of the murine Car agonist – TCPOBOP on influencing the expression of biotransformation and transport genes. The essence was the isolation of mRNA from the murine kidneys using the classic phenol-chloroform method, followed by the transcription of mRNA into cDNA. In the last step, the RT-PCR reaction was performed.

The results are graphs showing how the administration of TCPOBOP affected the expression of the monitored genes. It is clear from these graphs that TCPOBOP has some effect on the expression of target genes. In the case of *Cyp3a11*, *Cyp2b10*, *Slc22a2* and *Ugt3a2*, there was a several-fold increase in expression after administration of this agonist. For the *Nr1i2*, *Nr1i3*, *Sultc2*, *Abcc2*, *Abcb1a* and *Abcb1b* genes, the results were not significant. The expression of the target and control groups did not differ significantly from each other in these two cases.