

# Abstract

Kristýna Paclíková

Influence of resveratrol on bile flow

Diploma thesis

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

Pharmacy

## Background:

Protective effect of resveratrol is shown in many experimental models of cholestasis, but its effect on bile production in healthy individuals has not been studied yet. As the use of resveratrol is frequent in population, the aim of this thesis was to investigate the effect of resveratrol on the bile flow in healthy animals and the clarification of the mechanism of this effect.

## Methods:

Wistar rats (n = 6, in each group, weighing 280 to 320 g) were divided into two groups: control group (Control) and the group of rats administered with resveratrol (10mg/kg/day, p.o.) for 28 days (RES). *In vivo* clearance study was performed to analyze bile production. Analysis of mRNA and protein expression of the transport proteins was performed by qRT-PCR and Western blot.

## Results:

Resveratrol led to a significant increase in the cumulative bile flow. Analysis of mRNA and protein expression of the transport proteins revealed that bile flow is changed due to posttranscriptional induction of canalicular transporters Bsep and Mrp2. Simultaneously, resveratrol led to induction of Mrp4 efflux protein, expressed at the basolateral membrane of hepatocytes.

## Conclusion:

The results of this study show that the choleric effect of orally administered resveratrol is caused by increased expression of the cannicular efflux transporters in healthy rats.