

## ABSTRACT

**Charles University**

**Faculty of Pharmacy in Hradec Kralove**

**Department of Farmacology & Toxikology**

**Student:** Martina Fišrová

**Supervisor:** PharmDr. Marie Vopršalová, CSc.

**Title of diploma thesis:** The effects of some flavonoids on isolated rat aortic rings

Flavonoids are secondary plant metabolites that are profusely represented in nature. They are known for their wide range of effects and many of them have beneficial effects on the human body. Above all, they have anti-bacterial and anti-inflammatory properties and effects on cardiovascular system - they cause vasodilation. The aim of this diploma thesis was to investigate vasorelaxation effects of selected flavonoids from the group of flavonolignans – 2,3-dehydrosilybin A (DHS-A), 2,3-dehydrosilybin B (DHS-B) and metabolites, which are components of the silymarin complex found in the plant *Silybum marianum* (Asteraceae).

The vasorelaxation potential of tested substances was verified in *ex vivo* conditions on isolated rat aortic rings. The effect of increasing doses of individual substances in precontracted aortic rings with intact endothelium was measured.

From the measured values, the DRC curves were constructed and  $EC_{50}$  values were determined. The analysis of the results shows, that DHS-A ( $EC_{50} = 30,1 \mu\text{mol/l}$ ) had the most significant activity. Its metabolite 2,3-dehydrosilybin A-20-O-sulfate ( $EC_{50} = 42,5 \mu\text{mol/l}$ ) was also effective. Neither DHS-B nor its metabolite 2,3-dehydrosilybin B-20-O-sulfate showed no vasodilatory effect.