

## **Abstact**

Rutin is a flavonol glycoside appearing in many kinds of plants, vegetable and fruits. There are numerous biological activities attached to it, such as antioxidant properties, hypertension treatment, anti-inflammatory effect, antihemorrhagic activity, strengthening of capillaries, ability to regulate a capillary permeability and stabilization of blood platelets as well. Other qualities characteristic for rutin are antibacterial, antiviral and antiallergenic properties, antiprotozoal activities and anticarcinogenic effects. In recent years, the biological activity of rutin is the matter of many studies.

The main objective of this thesis is to review an influence of rutin on experimental myocardium damage with usage of isoprenaline model of myocardium damage, which is causing morphological and biochemical changes of certain parameters. These changes can be compared to the myocardial infarction. Rutin was chosen to be a potentially cardio preventive substance and it was applied intravenously 5 minutes before an isoprenaline application. On experimented animals a plasma concentration of cardiac troponin T and histology images of the heart were judged. The concentration of cardiac troponin T was charted into a diagram and histological preparations (samples) were evaluated by the medium of the light microscopy.

Values of the concentration of cardiac TnT were not lowered after application of rutin 5 minutes before application of isoprenaline, and these values were similar to the values recorded in the group of animals medicated only with isoprenaline. Isoprenaline was applied in a dose of 100mg/kg s.c. In the histology image an application of isoprenaline produces damage of the cardiac muscle with characteristic edematous extension of interstitial spaces with inflammatory infiltrate especially in subendocardial space. Similar histology image was observed in groups of animals premedicated with rutin 5 minutes before application of isoprenaline.

In experiment structured this way, rutin does not work cardio protectively in case of isoprenaline damage of myocardium. For further studies it would be appropriate to evaluate a long time giving of rutin in various doses.