# Abstract

Charles University in Prague

Faculty of Pharmacy in Hradec Kralove

Department of Biological and Medical Sciences

Consultant: Doc. PharmDr. Petr Nachtigal, PhD.

Student: Lenka Pešlová

Title of Thesis: Endothelial dysfunction markers and soluble endoglin

**Background:** To analyze possible changes in histological structure in myocardium of mice with low or high levels of soluble endoglin. We focused on description of general histology, observation of ligament changes and possible development of inflammatory reactions using immunohistochemical analysis.

**Method:** In the study we used genetically modified female mice, strain CBAxC57BL/6J, with low or high levels of soluble endoglin (Sol-Eng+). Six-month-old female mice were fed for three months using a high fat rodent diet containing 1,25% of cholesterol and 40% of fat. Then their myocardia were resected. For identification of endoglin expression we used immunohistochemical analysis called En Vision-CD3-T-lymfocyty (rabbit anti mouse). In histological analysis we used hematoxylin-eosin and green trichrome staining.

**Results:** Histological analysis did not reveal any pathological accumulation of collagen in any of animal myocardium we focused on. There were any changes in staining neither of nuclei or cytoplasm, nor any infiltration of leucocytes. Immunohistochemical analysis did not detect any lymphocytes of type T by any animal or in the group of mice with low or high levels of soluble endoglin.

**Conclusions:** Neither high fat diet containing cholesterol nor soluble endoglin level is able to affect the morphological structure of myocardium or induce inflammation in myocardium within the animals we focused on. We cannot eliminate possibility that older animals with high levels of soluble endoglin might suffer from hypertension caused by soluble endoglin, which could finally result in alteration of the myocardium.