Abstract
Spirulina platensis is a blue-green microalga belonging to the cyanobacteria family. Microalga is a large source of proteins and good fatty acid and other nutritional elements, for example iron, calcium, chromium, lithium, selenium. It also contains natural dyes chlorophyll, phycocyanin. Its antioxidant and antiinflammatory were described.
The aim of this thesis was to determine potential hypolipidemic and antiinflammatory effects Spirulina platensis in apoE-deficient mice.
ApoE-deficient mice were fed standard diet for 2 weeks. At the age of 8 weeks the control group of animals were fed with the western type diet, which contained 21% fat and 0.15% cholesterol for 8 weeks. The same atherogenic diet was used in Spirulina platensis group, where Spirulina platensis was added to the atherogenic diet at the dosage of 20 mg per day. The biochemical analysis of lipid spectrum was done, area of atherosclerotic lesions was determined and immuno-histochemical and stereological analysis of VCAM-1 expression was performed as well.
The results of this thesis showed positive effects of Spirulina platensis on cholesterol levels. On the other hand the atherosclerotic lesion area was not affected by Spirulina treatment. Moreover stereological analysis of immuno-histochemical staining revealed that, that endotelial expression VCAM-1 was not affected by Spirulina treatment as well..
These results of this pilot study with Spirulina platensis shows its potential hypolipidemic effects in apoE-deficient mice. However these hypolipidemic effects were not accompanied by positive effect on atherosclerotic plaque area and expression of VCAM-1 in the vessel wall.