

## **Abstract**

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The atorvastatin effect on endoglin expression in the atherosclerotic plaques.

Diploma thesis

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**Background:** We observed the expression of endoglin in atherosclerotic plaques in Apo E/LDL receptor deficient mice with regard to the atorvastatin treatment.

**Methods:** We used C57BL/6J mice with double deficiency of apolipoprotein E and LDL receptor. Animals were divided into two groups and both groups were fed with special diet containing either 1 % of cholesterol or cholesterol with atorvastatin at a dose of 50 mg/kg/day. Biochemical analysis of blood samples was performed. Histological staining with oil was performed for the determination of lipids in atherosclerotic lesions. The immunohistochemical analysis of aortic sinus was also performed. Expression of the endoglin was detected using the Avidin-Biotin method (ABC).

**Results:** Atorvastatin treatment resulted in a significant decrease of total, VLDL and LDL cholesterol in comparison with the control group. Histological staining with oil red demonstrated the presence of the atherosclerotic lesions in both groups of animals. Atorvastatin treatment reduced the lesion size area staining when compared to control group. Immunohistochemical analysis showed stronger expression of endoglin in vascular endothelium and atherosclerotic plaques at atorvastatin group.

**Conclusions:** Increased expression of endoglin could have a protective effect on the atherosclerotic process, which could contribute to the positive effect of statins on atherogenesis.