# Development of a high-throughput, label-free optical system to evaluate the interaction of enzymes involved in inflammation with cells

The production and purification of the plasma enzymes has been carried on according to the schedule. We possess both recombinant and plasma derived C1s and thrombin. We adapted HUVEC culture to the surfaces of label-free optical biosensors. Using 0.5% gelatin coat and MCDB 131 based medium, the cells adhered to the biosensors, they formed normal cobble-stone morphology throughout at least 30 hours, thus the system seems to be suitable for the label-free measurements of HUVECs. We tested the HUVEC-covered biosensors in two optical systems. EPIC BT is a high sensitivity, real-time optical biosensor system, and we succeeded to register the response of HUVECs to histamine. However, EPIC BT is currently unable to work under physiological conditions. Therefore, we involved another system, Byosens Lyte96 into the assay development, which can register the signals even in CO2-incubator. Since it is a prototype equipment, the optimization of Byosens Lyte96 is still under process.