

## **ABSTRACT**

Charles University

Faculty of Pharmacy in Hradec Králové

Department of Biophysics and Physical Chemistry

Candidate: Kamila Kynclová

Supervisor of Diploma Thesis: Mgr. Monika Kuchařová, Ph.D.

Title of Diploma Thesis: Determination of fatty acids levels in selected human tissues

Fatty acid are an essential part of many metabolic processes in the body. The theoretical part of the the thesis presents primarily omega-3 and omega-6 fatty acids, their general characteristics, metabolism and their effect on various disease. The roles of fatty acid in cancer, neuropsychiatric and inflammatory diseases are described here. The thesis also mentions the method of gas chromatography, which was used to determine the levels of fatty acids. The experimental part of the thesis includes method, chromatographic analysis and results. 13 fatty acids in 7 different tissues were analyzed: subendocardial tissue, liver parenchymal tissue, kidney and adrenal tissue, skeletal muscle tissue, adipose and brain tissue. Tissues were collected from 20 healthy, suddenly deceased, cadavers. Donors were divided into two groups according to age. The obtained data were statistically processed and divided according to individual fatty acids. In the end the results between the two groups were evaluated with a possible explanation of the differences found in individual tissues.

### **Key words**

fatty acid, polyunsaturated fatty acids, essential fatty acids, omega-3 and omega-6 fatty acids