

ABSTRACT

Charles University

Faculty of Pharmacy in Hradec Králové

Department of Biophysics and Physical Chemistry

Candidate: Monika Novotná

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

Title of Diploma Thesis: The determination of fatty acid levels in the tissues of healthy, suddenly deceased persons and polymorbid patients

The aim of the thesis was to determine the levels of 14 fatty acids in tissues of suddenly deceased, otherwise healthy individuals and in the group of polymorbid, chronic patients. It was a comparison of fatty acid levels in seven tissues of the human body: subendocardial left ventricular tissue, liver parenchyma tissue, kidney cortex, adrenal tissue, skeletal muscle, abdominal subcutaneous adipose tissue, and brain tissue. Each group included 10 deceased patients.

The theoretical part includes fatty acids as the main component of lipids. It deals mainly with the group of polyunsaturated fatty acids and their relation to pathologies in the human body. Gas chromatography, thanks to which we analyzed the fatty acid spectrum, is also described.

The experimental part consists of the basic characteristics of the research groups, the description of the workflow and the results. Statistically processed data are divided into categories by individual fatty acids and other monitored parameters. The summary of statistically significant differences is reviewed at the end of the work, which also explains different values of obtained data between the group of healthy individuals and the chronically ill group.

Key words:

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