Abstract

A method of high-performance liquid chromatography with evaporative light-scattering detector (HPLC-ELSD) has been optimalized for the determination of neutral and polar lipids. Column filled by silica with chemically bonded diol has been used as stationary phase. As mobile phase, a ternary gradient composed from A: hexan-tetrahydrofuran 99:1 (v/v), B: isopropanol-chloroform-acetic acid 82:20:0,01 (v/v/v), C: isopropanol-water-triethylamine 47:47:6 (v/v/v) was used. Calibration curves have been measured in the range 2-200 μg of the injected amount; for individual lipid classes, optimal interlay of experimental data corresponded to the following functions: triacylglycerols – third order polynom (R=0,998), cholesterol esters – exponential dependence (R=0,998), free cholesterol – third order polynom (R=0.9998), ceramid – exponential dependence (R=0,992), cardiolipin – square dependence (R=0,998), phosphatidylethanolamine – exponential dependence (R=0,999), phosphatidylcholine – square dependence (R=0,997), phosphatidylserine – third order polynom (R=0,9985), sphingomyelin – third order polynom (R=0,9997), lysophosphatidylcholine – exponential dependence (R=0,9986). Analysis of the synthetic control sample showed recovery in the range of 82-95%. On the basis od these measurements, concentration of individual lipid classes were determined in the brain tissue of female mice and thirty day old pups.