Abstract

Nicotinic acid (NA) is a hypolipidemic agent with pleiotropic effects on plasma lipoproteins. Its medicamentous form with delayed secretion leads to pyrimidine metabolites, which make increased risk of hepatotoxicity and should be monitored. The aim of the presented study was to introduce HPLC-MS method for the determination of NA, nicotinamide (NAM), nicotinuric acid (NUA), 1-methyl-nicotiamide (MNA), nicotinamid-N-oxide (NNO), 1-methyl-2-pyridon-5-carboxamide (2-Pyr) and 1-methyl-4-pyridon-5-carboxamide (4-Pyr) in blood plasma useful for the monitoring of hypolipidemic therapy.

We have compared calibration dependences of individual metabolites using two columns - Hypercarb (grapfite carbon) and Hypersil Silica (silicagel). Both columns revealed linear calibration dependences for all mentioned analytes except MNA in the concentration range 10-2000 ng/ml for chemical standards; calibration dependence in human blood plasma measured with the column Hypersil Silica was linear in the range 20-4000 ng/ml for all tested analytes. Correlation coefficient varied between the value 0,9400 and 0,9997. Analysis time was 15 min with the column Hypercarb and 27 min with Hypersil Silica. Biological samples were extracted using solid phase with sulphonyl group. Reproducibility of the results of biological samples varied between 0,06% and 19,97 %.