

Abstract

In this rigorous work UHPLC-MS/MS and Abbott Architect CMIA methods for determination of 25(OH)D (calcidiol) in human serum were compared.

Human serum samples were firstly analysed by the principle of CMIA and subsequently identical samples were processed by UHPLC-MS/MS method that was developed and validated in Research Laboratory of III. Internal Gerontometabolic Clinic of University Hospital in Hradec Králové for 25(OH)D₃ and 25(OH)D₂.clinical monitoring.

Comparison of these methods was performed using the statistical software NCSS 2007 (Number Cruncher Statistical Software, Kaysville, Utah, USA). Descriptive statistical methods described basic properties of both result sets (mean, median, standard deviation, etc.). The evaluation was tested using pair T-tests to assess the diversity or consensus between the two datasets. Correlation of the two sets of values was investigated by regression analysis.

Based on statistical analysis of the results we can conclude that the values obtained by UHPLC-MS/MS and CMIA Abbott Architect methods are statistically significantly different ($p = 0.0000$), but the correlation is very good ($r = 0,8832$). Therefore the both methods are well comparable and the results can be converted to each other.