

Poster Abstract

The Evaluation of the Measurement of Low Concentrations of Cholesterol and Triglycerides in Chromatography Fractions with the Cobas® c311 Chemistry Analyzer

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The purpose of this project was to modify and evaluate methods on the Cobas® c311 automated chemistry analyzer for the measurement of cholesterol and triglycerides in human serum, to be able to measure concentrations of cholesterol and triglycerides in chromatography fractions of mouse plasma which are much lower than the lower limit of quantitation for those methods. The modified assays showed linear responses up to 12 mg/dL for triglycerides and up to 14.5 mg/dL for cholesterol in mouse plasma diluted with chromatography mobile phase. The limit of detection (LOD) and functional sensitivity of the modified assays is ~0.1 mg/dL. Twenty replicates yielded mean values of 0.12 mg/dL and 0.14 mg/dL, with C.V. equal to 14 % and 20% for cholesterol and triglycerides, respectively. To assess feasibility and reliability of the performance of the assays on the Cobas® c311 automated analyzer, chromatography fractions of mouse plasma were analyzed. With a total of thirty-six (36) gel filtration chromatography fractions per mouse, we could demonstrate a clear difference in lipoprotein patterns for a non-fasting mouse lacking LDL receptors and fasting mice with normal lipid metabolism.