

RANDOX REAGENTS

EVALUATION OF AN ASSAY FOR THE DETERMINATION OF TRIGLYCERIDES INCORPORATING A NEW READY TO USE LIQUID STABLE REAGENT

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INTRODUCTION

Triglycerides have a pivotal role in lipid metabolism and are important biomarkers of risk of cardiovascular disease. Testing is also performed to monitor treatment in subjects with high triglyceride levels or in subjects with risk factors for heart disease such as diabetes, high blood pressure or high body mass index.

This study reports the evaluation of an assay for the determination of triglycerides in serum and plasma samples, which incorporates a new ready to use liquid stable reagent. This leads to a simplified procedure and to the reduction of handling errors prior to analysis.

METHODOLOGY

- The assay includes a series of steps, initiated by the conversion of triglycerides to glycerol and free fatty acids by lipase, and ending with the formation of a coloured complex from hydrogen peroxide, 4-aminophenazone and 4-chlorophenol.
- The performance of the assay at low levels was evaluated according to CLSI guideline EP17-A2.
- The reagent is liquid, stable and ready to use.
- The assay is applicable to a variety of analysers. In this evaluation ADVIA analysers were used.



RESULTS

Sensitivity and linearity

Triglycerides assay (ready to use reagent)		
Limit of Detection (mg/dl)	Linearity (mg/dl)	Sample type
8	550	Serum Plasma

12.004.RDDX.CCA14, 12.006.RDDX.CCA14

Correlations with other commercially available assay systems

Sample type	n	Regression equation	r	Range (mg/dl)
Serum	101	$y=0.94x + 4.0$	0.999	20-540
Plasma (lithium heparin)	59	$y=1.01x - 3.0$	0.999	34-509
Plasma (potassium EDTA)	60	$y=1.02x - 7.0$	0.999	34-509

12.009.RDDX.CCA14, 12.010.RDDX.CCA14

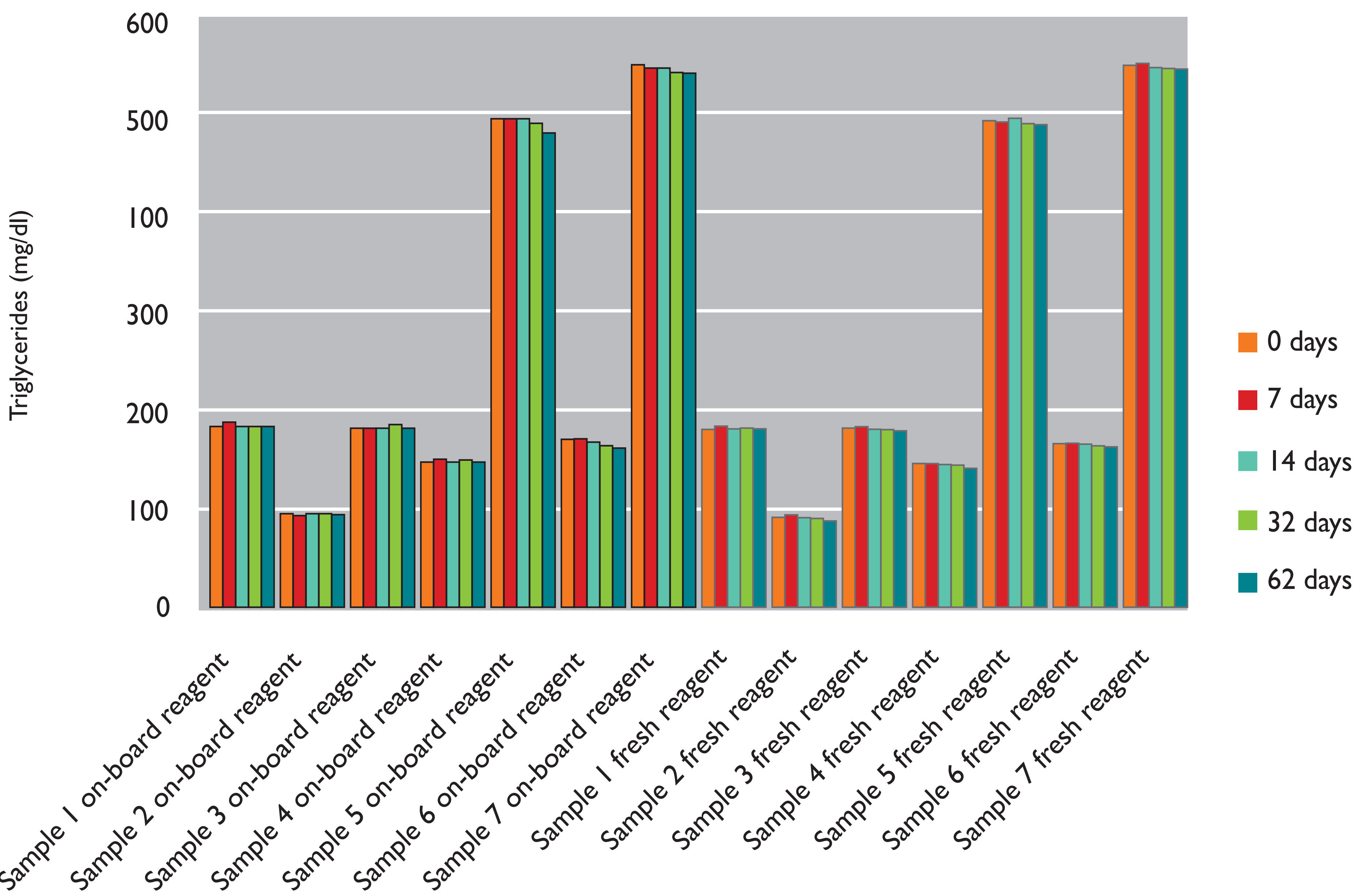
Precision

Triglycerides assay (ready to use reagent)				
Sample type	n	Mean (mg/dl)	Within-run	Between-run
			%CV	%CV
Serum sample 1	80	183	0.9	0.2
Serum sample 2	80	92	0.3	0.3
Serum sample 3	80	254	0.3	0.5
Serum sample 4	80	503	0.2	0.2

12.005.RDDX.CCA14



Reagent on-board stability



12.001.RDDX.CCA14

CONCLUSION

The results indicate that this assay for the determination of triglycerides in serum and plasma exhibits good analytical performance and favourable correlation with other commercial assay systems. Moreover, this assay incorporates a new liquid stable reagent, which simplifies the experimental procedure and reduces handling errors prior to analysis.