LiquiCHEK ™

BIOSS
See Life More Clearly

TRIGLYCERIDES (S.L)

4x10 mL/ 5x25 mL/ 6x50 mL/ 5x100 mL
11410007/ 11410002/ 11410008/ 11410004

INTENDED USE

This reagent is intended for in vitro quantitative determination of triglycerides in serum or plasma.

- GPO-TOPS methodology
- Linear up to 1000 mg/dL
- Contains LCF (Lipaemic clearing factor) which minimizes rerun

CLINICAL SIGNIFICANCE

Triglycerides are simple lipids, formed in the liver by glycerol & fatty acids. They are transported by VLDL, LDL & constitute about 95% of fat, stored as source of energy in the tissue & plasma.

Increased levels are found in hyperlipidemias, diabetes, nephrotic syndrome & hypothyroidism. Increased levels are risk factor for arteriosclerotic coronary disease, peripheral vascular disease, acute pancreatitis & hyperlipoproteinaemia. Decreased levels are found in malnutrition & hyperthyroidism.

PRINCIPLE

Enzymatic determination of triglyceride is based on following reactions:

$$TGL + H_2O \xrightarrow{LPL} Glycerol + Fatty\ acid$$

$$Glycerol + ATP \xrightarrow[Mg^{++}]{GK} Glycerol\text{-}3\text{-}phosphate + ADP$$

$$Glycerol\text{-}3\text{-}phospahte + O_2 \xrightarrow{GPO} Dihydroxyacetone\ phosphate + H_2O_2$$

$$2H_2O_2 + 4\text{-}Aminoantipyrine + TOPS \xrightarrow{POD} Violet\ coloured\ complex$$

GPO = Glycereol-3-phosphate Oxidase.
LPL = Lipoprotein Lipase
GK = Glycerol Kinase

REAGENT COMPOSITION

TRIGLYCERIDES REAGENT	**4x10mL / 5x25mL / 6x50mL / 5x100mL**
Pipes –buffer (pH 7.00)	5 mmol/L
TOPS	5.3 mmol/L
Potassium ferrocynate	10 mmol/L
Magnesium Salt	17 mmol/L
4-Aminoantipyrine	0.9 mmol/L
ATP	3.15mmol/L
Lipoprotein Lipase	> 1800 U/L
Glycerol Kinase	> 450 U/L
Glycerol – 3- phosphate oxidase	> 3500 U/L
Peroxidase	> 450 U/L
TRIGLYCERIDES STANDARD	**1 x 4 mL**
Triglycerides std.concentration	200 mg/dL

STORAGE AND STABILITY

The sealed reagents are stable up to the expiry date stated on the label, when stored at 2 - 8°C.

LINEARITY

This reagent is linear up to 1000 mg/dL.

If the concentration is greater than linearity (1000 mg/dL), dilute the sample with normal saline and repeat the assay. Multiply the result with dilution factor.

NORMAL RANGE

It is recommended that each laboratory establish its own reference values.

The following value may be used as guide line.

Male : 60-165 mg/dL
Female : 40-140 mg/dL

THE REAGENT IS READY TO USE

PRECAUTION

To avoid contamination, use clean laboratory wares.

Avoid direct exposure of working reagent to light.

SAMPLE

Serum / plasma (free of haemolysis)

GENERAL SYSTEM PARAMETER

Mode of Reaction	End Point
Slope of reaction	Increasing
Wavelength I	546 nm (540-560 nm)
Wavelength II	630 nm
Temperature	37°C
Standard Concentration	200 mg/dL
Linearity	1000 mg/dL
Blank	Reagent
Incubation time	5 min
Sample volume	10 µL
Reagent volume	1000 µL
Cuvette	1 cm light path

LABORATORY PROCEDURE

	Blank	Standard	Sample
Working Reagent 1000 µL	1000 µL	1000 µL	
Standard	-	10 µL	-
Sample	-	-	10 µL

Mix and incubate for 5 minutes at 37°C. Measure the change in absorbance of standard and sample against reagent blank.

CALCULATION

$$Triglycerides\ Con.\ (mg/dL) = \frac{Absorbance\ of\ Sample}{Absorbance\ of\ Standard} \times 200$$

BIBLIOGRAPHY

1. Schettler, G., Nussel, E.; Arav. Med 10, 25 (1975)
2. Jacobs, N.J. , VanDemark, P.J.; Arch, Biochem, Biophy. 88, 250 – 255 (1960)

SYMBOLS USED ON THE LABELS

SYMBOLS USED ON THE LABELS: IVD IN VITRO DIAGNOSTIC USE | SEE PACKAGE INSERT FOR PROCEDURE | LOT LOT NUMBER | MANUFACTURER'S ADDRESS | MANUFACTURING DATE | EXPIRY DATE | TEMPERATURE LIMIT

BIOSS BioTechnology, GmbH
Boekhulter Weg 1a, 47638 Straelen, Germany
E-mail: sales@biossbiotech.de, support@biossbiotech.de

EC REP Arthrex GmbH
Erwin-Hleischer-Strasse 9, 81249 Munchen, Germany

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