TRIGLYCERIDES KIT

(GPO / PAP method)

For the determination of Triglycerides in serum or plasma.

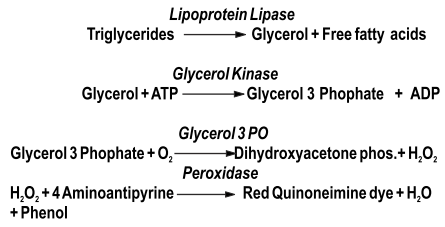
(For Invitro Diagnostic Use Only)

Summary

Triglycerides are a form of fatty acid esters. They are produced in the liver by binding glycerol and other fatty acids. They are transported by VLDL and LDL and act as a storage source for energy. Increased levels are found in hyperlipidemias, diabetes, nephrotic syndrome, hypothyroidism. Increased levels are risk factor for arteriosclerotic coronary disease and peripheral vascular disease. Decreased levels are found in malnutrition and hyperthyroidism.

Principle

Lipoprotein lipase hydrolyses triglycerides to glycerol and free fatty acids. The glycerol formed with ATP in the presence of glycerol kinase forms glycerol 3 phosphate which is oxidised by the enzyme glycerol phosphate oxidase to form hydrogen peroxide. The hydrogen peroxide further reacts with phenolic compound and 4-aminoantipyrine by the catalytic action of peroxidase to form a red coloured quinoneimine dye complex. Intensity of the colour formed is directly proportional to the amount of triglycerides present in the sample.



Normal reference values

Serum / Plasma (Suspicious) : 150 mg/dl and above

(Elevated) : 200 mg/dl and above

It is recommended that each laboratory establish its own normal range representing its patient population.

Contents	25 ml	75 ml	2 x 75 ml	2 x 150 ml
L1 : Enzyme Reagent 1	20 ml	60 ml	2 x 60 ml	2 x 120 ml
L2 : Enzyme Reagent 2	5 ml	15 ml	2 x 15 ml	2 x 30 ml
S : Triglycerides Standard (200 mg/dl)	5 ml	5 ml	5 ml	5 ml

Storage / stability

Contents are stable at 2-8^{0}C till the expiry mentioned on the labels.

Reagent Preparation

Reagents are ready to use.

Working reagent : Pour the contents of 1 bottle of L2 (Enzyme Reagent 2) into 1 bottle of L1 (Enzyme Reagent 1).This working reagent is stable for at least 8 weeks when stored at 2-8^0 C. Upon storage the working reagent may develop a slight pink colour however this does not affect the performance of the reagent.

Alternatively for flexibility as much of working reagent may be made as and when desired by mixing together 4 parts of L1 (Enzyme Reagent 1) & 1 part of L2 (Enzyme Reagent 2). Alternatively 0.8 ml of L1 and 0.2 ml of L2 may also be used instead of 1 ml of the working reagent directly during the assay.

Sample material

Serum, plasma. Triglycerides is reported to be stable in the sample for 5 days when stored at 2-8^{0}C.

Procedure

Wavelength / filter : 505 nm (Hg 546 nm) / Green
Temperature : 37^{0}C / R.T.
Light path : 1 cm

Pipette into clean dry test tubes labelled as Blank (B), Standard (S), and Test (T) :

Additiion Sequence	B (ml)	S (ml)	T (ml)
Working reagent	1.0	1.0	1.0
Distilled water	0.01	-	-
Triglycerides Standard (S)	-	0.01	-
Sample	-	-	0.01

Mix well and incubate at 37^{0}C for 5 min. or at R.T. (25^{0}C) for 15 min. Measure the absorbance of the Standard (Abs.S), and Test Sample (Abs.T) against the Blank, within 60 Min.

Calculations

$$\text{Triglycerides in mg/dl} = \frac{\text{Abs.T}}{\text{Abs.S}} \times 200$$

Linearity

This procedure is linear upto 1000 mg/dl. If values exceed this limit, dilute the serum with normal saline (NaCl 0.9%) and repeat the assay.

Note

Fasting samples of 12 to 14 hrs. are preferred. Fatty meals and alcohol may cause elevated results. Patient should not drink alcohol for 24 hrs. before the test.

References

Trinder, P., (1969) Ann. Clin. Biochem. 6 : 24
Bucolo, G., David, H., (1973) Clin. Chem. 19 : 476
Fossati, P., Prencipe, L., (1982) Clin. Chem. 28 : 2077

System Parameters

Reaction	:	End Point
Wavelength	:	505 nm
Zero Setting	:	Reagent Blank
Incub. Temp.	:	37°C / R.T.
Incub. Time	:	5 min. / 15 min.
Delay Time	:	---
Read Time	:	---
No. of read.	:	---
Interval	:	---
Sample Vol.	:	0.01 ml
Reagent Vol.	:	1.00 ml
Standard	:	200 mg/dl
Factor	:	---
React. Slope	:	Increasing
Linearity	:	1000 mg/dl
Units	:	mg/dl

TGL(2Rgt)\02(P)

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