ESTROM TRIGLYCERIDES-SLR
(GPO Method)

ANGSTROM BIOTECH PVT. LTD

This reagent kit is for quantitative estimation of Triglycerides in serum/plasma.

PRINCIPLE:
The triglycerides present in the serum are catabolised into glycerol and free fatty acids by lipoprotein lipase. Liberated glycerol is converted to glycerol-3-phosphate in presence of glycerol kinase and ATP. Glycerol 3 phosphate is acted upon by glycerol 3 phosphate oxidase to form hydrogen peroxide. This together with phenolic compound and 4 aminoantipyrine in presence of Peroxidase gives the colour complex. The intensity of the colour is measured at 546nm (530-570) nm or green filter and corresponds to the triglycerides concentration.

$$\text{TRIGLYCERIDES} + H_2O \xrightarrow{LPL} \text{GLYCEROL} + \text{FATTY ACIDS}$$

$$\text{GLYCEROL} + \text{ATP} \xrightarrow{GK} \text{GLYCEROL-3-PHOSPHATE} + \text{ADP}$$

$$\text{GLYCEROL-3-PHOSPHATE} + O_2 \xrightarrow{GPO} \text{DIHYDROXYACETONE PHOSPHATE} + H_2O_2$$

$$H_2O_2 + \text{4-AMINOANTIPYRINE} + \text{PHENOLIC COMPOUND} \xrightarrow{POD} \text{QUINONEMINE} + H_2O$$

CLINICAL SIGNIFICANCE:
Serum Triglycerides estimation is a significant and important aspect of the lipid profile test. It is important in hyper lipoprotemia investigation. Elevated levels are seen in atherosclerosis, diabetic mellitus, and glycogen storage disease like Von Gierke's disease, alcoholism and nephrotic syndrome.

SPECIMEN COLLECTION AND STORAGE:

1. Fresh, fasting, unhemolysed serum sample is preferred.
2. Plasma collected with heparin or EDTA as anti coagulant may be used.
3. Serum triglyceride are slightly (5mg/dl) higher than plasma levels.
4. Samples are stable for 2 days when stored at 2-8°C.

PRECAUTION:
ESTROM Triglycerides reagent is for invitro diagnostic use only.

REAGENTS:
All the reagents are to be stored at 2-8°C.

Pack Size	5 x 10ml	4 x 25ml
Triglycerides Reagent	5	4
Triglycerides Standard (200mg/dl)	1	1

REAGENT RECONSTITUTION:
Ready to use. Store at 2-8°C, protected from light when not in use.

REAGENT STORAGE AND STABILITY:
All the reagents are stable up to expiry date indicated on the bottle label.

GENERAL INSTRUMENT PARAMETERS:

Reaction type	:	End Point
Slope of reaction	:	Increasing
Wavelength	:	546nm (530 – 570)nm
Flow cell Temperature	:	37°C
Reagent Volume	:	1.0ml
Sample Volume	:	10µl (0.01ml)
Std. Conc.	:	200mg/dl
Units	:	mg/dl
Incubation	:	5 Minutes
Zero Setting	:	Reagent blank
Path Length	:	1.0 cm

PROCEDURE:

Allow the sample and reagent to attain room temperature prior to use.

	Blank	STD	Test
Reagent	1ml	1ml	1ml
Std	-	10µl	-
Sample	-	-	10µl

Incubate at 37°C for 5 minutes. Mix well and read at 546nm (530-570)nm or against green filter.

LINEARITY:
This method is linear for Triglycerides values up to 1000 mg/dl. For sample with values higher than 1000 mg/dl, dilute the sample using normal saline and repeat the assay. Apply proper dilution factor while calculation.

CALCULATIONS:

$$\text{Concentration of Triglycerides in sample (mg/dl)} = \frac{\text{Abs. Test}}{\text{Abs. Std}} \times 200$$

REFERENCE VALUES:

Serum Triglycerides
Male : 65 - 170 mg/dl
Female : 45 - 145 mg/dl

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

BIBILIOGRAPHY:

1. FOSSATI, P., LORENZO, P., Serum Triglycerides determined colorimetrically with an enzyme, that produces hydrogen peroxide, Clin. Chem 2, 2077-2080 (1982)
2. McGOWAN, M. W., ARTISS, J.D., STRANDBERG. D.R., ZAK, B.A. Peroxidase coupled method for the colorimetric determination of serum triglycerides, Clin. Chem. 29, 538 – 452 (1983).

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⚠	Attention,see instructions for use		Consult Instructions For Use
IVD	For in vitro diagnostic use only	REF	Catalog #
2°C 8°C	Store between 2-8°C	LOT	Lot Number
	Do not use if package is damaged		Date of Manufacturing
	Manufacturer		Use by