AGD
CliniPak

TRIGLYCERIDES

(GPO/POD)

Code	Pack Size
AGDSP - TG160	8 X 20 mL
AGDSP - TG144	8 x 18mL
AGDSP - TG184	8 x 23mL

INTENDED USE

Triglyceride is a reagent set for in vitro quantitative determination of Triglyceride concentration in serum based upon enzymatic colorimetric method.

CLINICAL SIGNIFICANCE

Triglycerides are esters formed from glycerol and fatty acids, the later being synthesized in the liver or extracted from blood. Determination of the level of triglyceride concentration is part of the evaluation of lipid metabolism and plays a major role in identification of various hyperlipoproteinemia.

Increased Levels : are observed in certain liver and renal diseases in diabetes mellitus and coronary disease.

PRINCIPLE

The triglycerides in the sample are hydrolysed to glycerol and fatty acids by lipoprotein lipase (LPL). Glycerine is then phosphorylated by glycerol kinase (GK) in the presence of ATP and Mg^{++} ions. In the next step Glycerol - 3- Phosphate is oxidized by Glycerol-3- phosphateoxidase (GPO) in the presence of molecular oxygen (O_2).A coloured compound at 505 nm (490-550) nm is formed from hydrogen-peroxide,4-aminoantipyrine and phenol-derivative in the presence of the Peroxidase (POD).

$$\text{Triglycerides} + H_2O \xrightarrow{\text{LPL}} \text{Glycerol} + \text{Fatty Acids}$$

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

$$\text{Glycerol-3-phosphate} + O_2 \xrightarrow{\text{GPO}} \text{Di-hydroxyacetone phosphate} + H_2O_2$$

$$2H_2O_2 + 4\ \text{Aminoantipyrine} + \text{P-Chlorophenol} \xrightarrow{\text{POD}} \text{Red Quinone} + 4H_2O_2$$

PROCEDURE

Reagent+Sample+Incubation→ Measurement (300µL)

(3µL) (300sec) (505nm)

REAGENT COMPOSITION

Goods buffer pH 7.2	≈ 50 mmol/L
Lipase	≈ 150 KU/L
Glycerol Kinase	≈ 55 IU/L
Glycerol phosphate oxidase	≈ 5 KU/L
Peroxidase	≈ 50 IU/L
ATP	≈ 1 mmol/L
Chromogens	≈ 2 mmol/L

REAGENT STORAGE AND STABILITY

Triglyceride is a ready to use reagent .

The reagent is stable till the expiry date stated on the reagent bottle label when stored at 2-8°C.Protect the reagent from light.

SAMPLE

Sample should be using standard sampling tube.
Fasting sample should be collected for triglyceride assay.
Serum or EDTA plasma can also be used.

BASIC PARAMETER

SHORT NAME	TRIG
NAME	Triglyceride
METHOD	GPO/POD
ASSAY	End point (two point reagent blank)
MAIN WAVE	505nm
SUB WAVE	0
DECIMAL	2
UNIT	mg/dL
R1 VOLUME	300µL
INCUBATION	36 secs
R2 VOLUME	0
SAMPLE VOLUME	3µL
INCUBATION	0 secs
MIXING SPEED	0
REACTION TIME (DELAY)	260 secs
CHECK TIME (READ)	40 secs
LINEAR RANGE	0 -1000
ABSORBANCE RANGE	0.0-2.5
DISCREPANCY	-
CALIBRATION TYPE	SINGLE SPOT LINEARITY
DILUTION RATIO	6
SAMPLE VOLUME	50

*Enter calibrator value as per the lot of calibrator and method.

LINEARITY

Reagent is linear up to 1000 mg/dL.
Dilute the sample appropriately and re-assay
If triglyceride concentration exceeds 1000mg/dL.
Multiply result with dilution factor.

PRECISION

Reproducibility of within run determined using quality Control Sera as shown below. n=15

Quality control material	Mean mg/dl	SD mg/dl	% CV
Low Control serum	92.0	0.79	0.86
High Control serum	249	1.8	0.80

REFERENCE NORMALVALUE

Female:40-140mg/dL Male : 50 - 165 mg/dL

QUALITY CONTROL

To ensure adequate quality control,it is recommended that the laboratory should use a normal and abnormal commercial reference control serum.The quality control material is used to check the function of reagents and the machine together.

LIMITATIONS & PRECAUTIONS

- Storage conditions as mentioned on the kit to be adhered.
- Do not freezeor expose the reagents tohigher temperature as it may affect the performance of the kit.
- Before the assay bring all the reagents to the room temperature.
- Avoid contamination of the reagent during assay process.
- Use clean glassware free from dust and debris.
- Reagent to sample ratio as mentioned above must be strictly adhered, as any change to it affects the factor.
- In case reagent comes in contact with eyes,immediately rinse with plenty of water and seek medical advice.

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ISO 13485:2016 ISO 9001:2015

EU REP

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