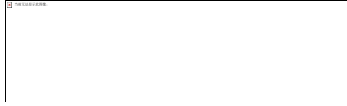


(FOR RESEARCH USE ONLY. DO NOT USE IT IN CLINICAL DIAGNOSIS!)

Triglyceride (TG) Assay Kit (GPO-PAP Method)

Catalog No.: BC00056

Size: 100T

Please read the instructions carefully before use. If you have any questions or need further help during experiment, please don't hesitate to contact us through the following methods:

Email (Sale) order@enkilife.com

Email (Techsupport) techsupport@enkilife.com

Tel: 0086-27-87002838

Website: www.enkilife.com

Shelf life: Please refer to the label on the outer package.

Techsupport: In order to provide you with better service, please inform us the lot number on the label of the outer package.

Basic Information

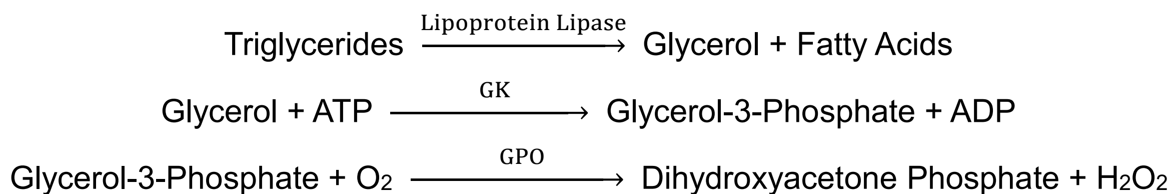
Product Name	Triglyceride (TG) Assay Kit (GPO-PAP Method)
Detection Method	Colorimetric
Sample Type	Tissue, serum, plasma and other samples
Assay Type	Quantitative
Detection Instrument	Microplate reader (500 nm)

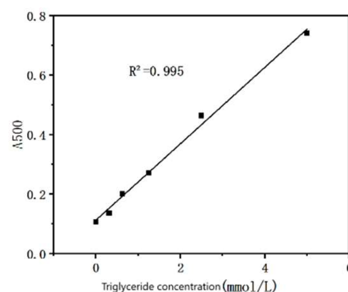
Product Introduction

Triglycerides are widely present in nature and are usually stored in animals and plants in a non-hydrated form. They are one of the main forms of energy acquisition and storage for animals and humans, and are also the main component of fat in food.

Principle

Triglycerides (TG) can be hydrolyzed into glycerol and free fatty acids by lipoprotein lipase. Glycerol generates glycerol-3-phosphate and ADP under the action of glycerol kinase (GK). Glycerol-3-phosphate generates hydrogen peroxide under the action of glycerol phosphate oxidase (GPO). In the presence of 4-aminoantipyrine and phenol, hydrogen peroxide is catalyzed by peroxidase (POD) to generate red quinone compounds of benzoquinone imine phenazone, and its color depth is proportional to the TG content (the principle diagram is as follows).





Components

No.	Components	Size (100T)	Storage
Reagent 1	Enzyme Working Solution	10 mL	-20℃, store at 2-8°C in the dark after opening.
Reagent 2	10 mmol/L Standard	0.1 mL	-20℃, store at 2-8°C after opening.
Consumable 1	Microplate	1 plate	RT
Consumable 2	Plate Sealer	2 pieces	RT

Storage

The unopened kit can be stored at -20℃ for 12 months, and after opening, it can be stored at 2-8℃ for 6 months.

Preparation

- **Sample handling**

1. Liquid samples such as serum and plasma: Can be measured directly.
2. Tissue samples: Take 0.020-1.0 g of fresh tissue blocks, rinse with 2-8°C PBS (0.01 M, pH 7.4), dry with filter paper, weigh, put into a homogenization container, add homogenization medium (**homogenization medium is anhydrous ethanol**) at a ratio of weight (g) : volume (mL) = 1:9, homogenize, centrifuge at 4°C, 10000×g for 10 min, take the supernatant and place on ice for testing.
3. Sample dilution: Before formal testing, select 2-3 samples with expected large differences and dilute them to different concentrations for a preliminary experiment. Refer to the table below for different sample dilution factors.

Sample	Dilution factor	Sample	Dilution factor
Human serum	No dilution	10% mouse liver homogenate	No dilution
Mouse serum	No dilution	10% mouse kidney homogenate	No dilution
Rat plasma	No dilution	10% mouse heart homogenate	No dilution

Note: The diluent for serum (plasma) samples is physiological saline (0.9% NaCl) or PBS (0.01M, pH 7.4); **the diluent for tissue samples is anhydrous ethanol**.

- **Preparation of the kit**

1. Before testing, equilibrate the reagents in the kit to room temperature. Double distilled water, physiological saline (0.9% NaCl) or PBS (0.01 M, pH 7.4) are required.
2. Dilution of different concentrations of standards: Dilute the standard solution with physiological saline or PBS according to the half-dilution method to different concentrations such as 5, 2.5, 1.25, 0.625, 0.15625, 0 (blank well) mmol/L.

Operation process

1. Blank wells: Take 2.5 μL of double-distilled water and add to the A wells of the plate.
2. Standard wells: Take 2.5 μL of Reagent 2 and add to the B wells of the plate.
3. Sample wells: Take 2.5 μL of the sample to be tested and add to the S wells of the plate.
4. Add 100 μL of Reagent 1 to each well from step (1).
5. Incubate at 37°C for 10 minutes, and measure the OD values at 500 nm with a microplate reader.

	Blank well	**Standard well**	**Sample well**
Double distilled water (μL)	2.5	-- --	-- --
Standard (μL)	-- --	2.5	-- --
Sample to be tested (μL)	-- --	-- --	2.5
Reagent 1 (μL)	100	100	100
Incubate at 37°C for 10 min and measure the OD value of each well at 500 nm using a microplate reader.			

Calculation

The calculation formula for triglyceride content in serum (plasma): TG content (mmol/L) = $\Delta A1/\Delta A2 \times c \times f$

The calculation formula of triglyceride content in tissue is: TG content (μmol/g tissue fresh weight) = $\Delta A1/\Delta A2 \times c \times f \div (m/V)$

$\Delta A1$: OD value of the measured well - OD value of the blank well

$\Delta A2$: Standard well OD value - blank OD value

c: Concentration of the standard

f: Dilution factor of the sample before adding it to the detection system

m: Tissue sample mass (g)

V: Volume of tissue sample homogenate (mL)

Notes

1. Standards and samples should be added to the bottom of the plate.
2. When measuring the OD value, there should be no bubbles in the wells of the ELISA plate.
3. When measuring low-value samples, increase the sample volume to 5-10 μL, and the volume of the blank and standard wells should also be increased accordingly.
4. This product is intended for scientific research use only by professionals and must not be used for clinical diagnosis or treatment, in food or drugs, or stored in ordinary residences.