

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

γ - Glutamyl transferase Assay Kit

Catalog No.: BC00189

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	γ - Glutamyl transferase Assay Kit
Detection Method	Colorimetric
Sample Type	Serum, plasma
Assay Type	Quantitative
Detection Instrument	Microplate reader (415 nm)

Product Introduction

Gamma-glutamyl transpeptidase (γ -GT or GGT) is a peptide transferase that catalyzes the transfer of the gamma-glutamyl group. Its natural donor is glutathione (GSH), and the receptors are L-amino acids.

In human organs, the distribution of γ -GT in descending order of content is the kidney, prostate, pancreas, liver, cecum and brain. However, in renal diseases, the increase of serum γ -GT activity is insignificant, which may be related to its excretion through urine. Therefore, γ -GT is mainly used for the auxiliary diagnosis of hepatobiliary diseases.

Serum γ -GT increases significantly in primary liver cancer, pancreatic cancer and ampullary cancer. In particular, for judging liver metastasis in malignant tumor patients and postoperative non-recurrence of liver cancer, its positive detection rate can reach up to 90%.

The activity of γ -GT can be elevated in alcohol abusers or individuals taking certain drugs such as barbiturates for a long time. In addition, increased γ -GT levels can also be observed in acute and chronic hepatitis, active stage of chronic hepatitis, obstructive jaundice, biliary tract infection, cholelithiasis and acute pancreatitis.

Principle

Using γ -GT as the catalyst, the substrate undergoes an enzymatic reaction to produce 5-amino-2-nitrobenzoic acid. This product has a characteristic absorption wavelength, and its formation rate is positively proportional to serum γ -GT activity. The enzymatic activity of γ -GT can be quantitatively determined by monitoring the rising rate of absorbance.

Components

No.	Components	Size	Notes
Reagent 1	Liquid	20 mL	Store at 2-8°C
Reagent 2	Liquid	5 mL	Store at 2-8°C
Reagent 3	Standard powder	1 vial	Store at 2-8°C. Dissolve with 0.25 mL of distilled water before use; the enzyme activity value is shown on the label. For long-term storage, keep below -20°C.
Consumable 1	Microplate	1 plate	RT
Consumable 2	Plate Sealer	2 pieces	RT

Storage

The kit is stable for one year when stored at 2-8 °C in the dark. After opening, use it as soon as possible to avoid contamination.

Preparation

Microplate reader adjustable at 415 nm wavelength, distilled water, vortex mixer, 37 °C water bath or constant temperature incubator.

- **Sample handling**

Serum or plasma. Separate promptly after blood collection to avoid hemolysis. Specimens can be stored at 2-8°C for 3 days, or at -20°C for 1 month.

Operation process

1. Main Performance Parameters

Wavelength	415nm	Reaction method	Rate method
Reaction temperature	37°C	Reaction direction	Upward

2. Operation Procedure

	Blank well	Standard well	Assay well
Distilled water (μL)	15		
Standard solution (μL)		15	
Sample (μL)			15
Reagent 1 (μL)	200	200	200
Mix thoroughly and incubate at 37 °C for 3-5 minutes.			
Reagent 2 (μL)	50	50	50
Mix well, incubate at 37 °C for 60 seconds. Continuously monitor the absorbance change of each well at 415 nm with a microplate reader for 1–3 minutes, and calculate the ΔA.			

Note: When the sample activity is low, the continuous monitoring time can be extended to 5 minutes.

Calculation

$$\gamma - \text{GT (U/L)} = \frac{\Delta A_{\text{Assay}} - \Delta A_{\text{Blank}}}{\Delta A_{\text{Standard}} - \Delta A_{\text{Blank}}} \times \text{Standard activity (U/L)}$$

Reference Range:

Male (37 °C): 11~50 U/L

Female (37 °C): 7~32 U/L

(It is recommended that each laboratory establish its own reference range.)

Precautions

1. It is recommended to use disposable laboratory test tubes for operation.
2. 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.
3. If the instrument is not equipped with the wavelength required by this kit, select a nearby wavelength, and the wavelength difference should preferably not exceed 10 nm.
4. Mixing reagents of different batches is not recommended.
5. If the sample activity is low, double the sample loading volume. (In this case, dilute the standard solution by half and double its loading volume accordingly.)