



DIACHEM Ltd

H-1117 Budapest, Budafoki út 111-113
 Phone: +36-1-205-3246,
 +36-1-205-3247
 Phone/Fax: +36-1-205-3616

GAMMA-GT

FREEZE DRIED



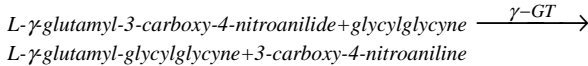
Cat. No.: 40531 40533
 9x50 ml 40x50 ml

Reagent kit for determination of γ -glutamyl-transferase (γ -GT) activity in serum. Modified kinetic colorimetric method of Szász.

γ -GT plays an important role in amino acid transport in the course of glutathione metabolism. The enzyme present in the serum is mainly of hepatobiliary origin. Increased enzyme activities are found in association with chronic alcoholism, different toxic liver damages, intra- and extrahepatic cholestasis, acute viral hepatitis, pancreatitis, neoplastic diseases of the liver and pancreas, myocardial infarction as well as with diabetes mellitus.

Principle

γ -GT catalyzes the transfer of the γ -glutamyl group from L- γ -glutamyl-3-carboxy-4-nitroanilide substrate to glycylglycine. The amount of released p-nitroaniline is proportional to the γ -GT activity of serum.



Reference values

Male: 11-50 U/l (0,18-0,83 μ kat/l)
 Female: 7-32 U/l (0,11-0,53 μ kat/l)

It is recommended that each laboratory should assign its own normal range.

Reagents

1. Reagent (R1)

TRIS buffer pH= 8.10 100 mmol/l
 Glycylglycine 100 mmol/l

2. Reagent (R2)

L- γ -glutamyl-3-carboxy-4-nitroanilide 4 mmol/l

Samples

Serum free of haemolysis.

PROCEDURE

Preparation of working reagent

Dissolve one vial substrate (R2) in the appropriate volume of buffer solution (R1).

Stability of working reagent

20-25°C: 7 days
 2-8°C: 10 days

Do not use working reagent if its initial optical density measured against distilled water at 405 nm 0.8 exceeds.

Assay conditions

Wavelength: 405 nm
 Temperature: 37 °C
 Cuvette: 1 cm light path
 Method: kinetic (increasing)

Pipette into cuvette

Working reagent	1 ml
Sample or control serum	100 μ l

Mix and after 1 minute incubation read the change of optical density (A) against air or distilled water in every minute for 3 minutes. Calculate the change of optical density per minute (ΔA /min).

Calibration: (37°C, modified method of Szász)

S1: Distilled water
 S2: Roche C.F.A.S. (Calibrator for automated system) or Randox Calibration Serum Level I

Calibration frequency

Two point calibration is recommended:

- after reagent lot change,
- as required following quality control procedures.

Calculation using calibration

$$\frac{\Delta A_{\text{sample}}}{\Delta A_{\text{standard}}} \times C_{\text{standard}} = C_{\text{sample}}$$

A = Absorbance, C = Concentration

Calculation using factor

$U/l = \Delta A/\text{min} \times 1540$ (405 nm); $(\mu\text{kat}/l) = \Delta A/\text{min} \times 25,67$

Quality control

A quality control program is recommended for all clinical laboratories. The analysis of control material in both the normal and abnormal ranges with each assay is recommended for monitoring the performance of the procedure. Each laboratory should establish corrective measures to be taken if values fall outside the limits.

PERFORMANCES DATA

The following data were obtained using the Olympus 600 analyzer (37°C).

Linearity

The test is linear up to 700 U/l (11,7 μ kat/l) γ -GT activity.

Sensitivity

It is recommended that each laboratory establishes its own range of sensitivity as this is limited by the sensitivity of the spectrophotometer used. Under manual conditions however, a change of 0.001 Abs units/min is equivalent to 1.54 U/l (0,026 μ kat/l) γ -GT activity at 405 nm.

Precision

Sample	Reproducibility		
	Average activity (U/l)	SD	CV%
sample I	44.8	0.80	1.79
sample II	189	2.30	1.22

Correlation

Comparative studies were done to compare our reagent with another commercial γ -GT reagent.

The results from these studies are detailed below.

Correlation coefficient: $r=0,9999$

Linear regression: y (U/l) = 1.046x + 0.065

(x = other commercial reagent, y = own reagent).

Specificity

Bilirubin 855 μ mol/l (50 mg/dl), lipid 1000mg/dl, glucose 55.5 mmol/l (50 mg/dl) and ascorbic acid 2.84 mmol/l (50mg/dl) don't interfere with the assay up to the given levels.

NOTE

Do not pipette by mouth!

Citrate, oxalate, EDTA (chelating agents) interfere with the test, the use of plasma is not recommended.

Do not use reagents after the expiry date stated on each reagent container label.

Do not use products, test solutions and reagents described above for any purpose other than described herein.

For in vitro diagnostic use only!

The following symbols are used on labels

For in vitro diagnostic use

Use by (last day of the month)

Temperature limitation

Batch Code

Code

Bibliography

Szász G.: Clin. Chem. 15, 124 (1969)

Lum G. et. a.: Clin. Chem. 18, 358 (1972)