Gamma GT

(Szaz Tris method)
Liquid Reagent

INTENDED USE:

This reagent kit is used for *in-vitro* quantitative determination of Gamma GT in human serum/plasma.

INTRODUCTION:

γ-Glutamyltransferase (GGT, GGTP) is a membrane localized enzyme that catalyzes the transfer of glutamyl groups from glutathione to amino acids or peptides. Large GGT amounts are present in secretory organs: kidney, liver, bile duct, pancreas. Although the GGT activity is highest in renal tissue, serum GGT is generally elevated as a result of liver disease. Since alcohol induces GGT production, measurement of GGT activity is used for monitoring of abstinence in withdrawal treatment.

TEST PRINCIPLE:

Kinetic method with L-g-glutamyl-3-carboxy-4-nitroanilide.
L-g-glutamyl-3-carboxy-4-nitroanilide + glycylglycine < γ-GT >
L-g glutamyloglycylglycine + 5-amino-2-nitrobenzoate.
The rate of absorbance changing at λ=405 nm is directly proportional to g-glutamyltransferase activity.

KIT CONTENTS:

Reagent 1: R1 GGT Reagent.

Reagent 2: R2 GGT Reagent.

Product Insert

WORKING REAGENT PREPARATION:

Assay can be performed with use of separate R1-GGT and R2-GGT reagents or with use of working reagent. For working reagent preparation mix gently 4 parts of R1-GGT with 1part of R2-GGT. Avoid foaming.
Stability of working reagent in darkness : 3 weeks at 2-8°C
5days at 15-25°C
Protect from light and avoid contamination.

REAGENT STABILITY AND STORAGE:

All the reagents must be stored at 2-8°C and are stable till expiry date mentioned on the labels.

PRECAUTIONS: ⚠

1. Storage conditions as mentioned on the kit to be adhered.
2. Do not freeze or expose the reagents to higher temperature as it may affect the performance of the kit.
3. Before the assy bring all the reagents to room temperature.
4. Avoid contamination of the reagent during assay process.
5. Use clean glassware free from dust or debris.
6. Reagent ratio as mentioned here above must be strictly observed as may change into it will adversly effect the factor.

SPECIMEN COLLECTION AND STORAGE:

Serum, EDTA plasma free from hemolysis. Do not use citrate, oxalate and fluoride as anticoagulants because of GGT activity inhibition! Heparin causes turbidity in the reaction mixture. GGT activity remains stable in specimen up to 2 days at 15-25 C or 1 week at 2-8 C or 1 month at -25 C but it is recommended to perform the assay with freshly collected samples. Freezing of sample causes a loss of enzyme activity. Frozen specimens should be thawed and kept at room temperature for 18 to 24 hours before measurement to achieve full enzyme reactivation.

PROCEDURE (Automated):

Refer to specific instrument application instructions.

TEST PROCEDURE (Manual):

Wevelength: 405 nm & Temperature: 37°C

Note : Bring reagents and samples to room temperature (21-25°C).

PIPETTE INTO THE TUBE:

Reagent	Test (T)
R1 GGT reagent	800 µl
R2 GGT reagent	200 µl
Bring to assay temperature, then add	
Sample	100 µl

Mix and incubate at adequate temperature. After about 1 min. read the absorbance against air or water. Repeat the reading after exactly 1, 2 and 3 minutes. Calculate the mean absorbance change per minute (ΔA/min.)

CALCULATION:

GGT activity [U/l] = ΔA/min. x 1600

NORMAL VALUES*:

Female	7 to 32 U/L
Male	11 to 50 U/L

*It is recommended that each laboratory establish its own normal range.

PERFORMANCE CHARACTERISTICS:

1. Sensitivity / Limit of Quantitation: 1.5 U/L.

2. Linearity: up to 1000 U/L

3. Specificity / Interferences

Haemoglobin up to 2.5 g/dl, ascorbate up to 62 mg/l, bilirubin up to 20 mg/dl and triglycerides up to 500 mg/dl do not interfere with the test.

SYSTEM PARAMETERS:

Method	Kinetic
Wavelength	405 nm
Zero Setting	Distilled Water
Temperature Setting	37° C
Incubation Temperature	37° C
Incubation Time	----
Delay Time	60 secs
Read Time	180 secs
No. of Reading	3
Interval Time	60 secs
Sample Volume	0.1 ml (100 µl)
Reagent Volume	1.0 ml (1000 µl)
Standard Concentration	----
Units	U/L
Factor	1600
Reaction Slope	Increasing
Linearity	1000 U/L

QUALITY CONTROL:

To ensure adequate quality control, each run should include assayed normal and abnormal controls. If commercial controls are not available it is recommended that known value samples be aliquoted, frozen and used as controls.

REFERENCE:

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