GAMMA-GT

Optimised IFCC Method

INTENDED USE:

This reagent kit is intended for ***"in vitro"*** quantitative determination of y-Glutamyl - Transferase (y-GT) activity in serum.

CLINICAL SIGNIFICANCE:

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 hepato-biliary 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.

PRINCPLE:

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

L- γ-glutamyl-3-carboxy-4-nitroanilide+glycylglycyne $\xrightarrow{\text{γ-GT}}$
L- γ-glutamyl-glycylglycyne+3-carboxy-4-nitroaniline

REAGENT COMPOSITION:

Reagent 1: Buffer Reagent
Reagent 2: Substrate Reagent

MATERIALS REQUIRED BUT NOT PROVIDED:

-Clean & Dry Glassware.
-Micropipettes & Tips.
-Colorimeter or Bio-Chemistry Analyzer.

SAMPLES:

Serum free of hemolysis.

WORKING REAGENT PREPARATION & STABILITY:

Mix 4 Volume of Reagent 1, with 1 Volume of Reagent 2.
Working Reagent is stable for 30 days at 2-8°C.

GENERAL SYSTEM PARAMETERS:

Reaction type	Kinetic Reaction
Wave length	405 nm
Light Path	1 Cm
Reaction Temperature	37°C
Blank / Zero Setting	With Distilled Water
Reagent volume	1ml
Sample Volume	100 ul
Lag / Delay Time	60 Sec.
Read Time	180 Sec.
Interval Time	60 Sec
Factor	1280
Low Normal at 37°C	7 U/l
High Normal at 37°C	50 U/l
Linearity	300 U/l
Max. △ Abs/Min	0.234

ASSAY PROCEDURE:

Working Reagent	**1000 µl**
Sample	**100 µl**

Mix and after 60 second incubation, measure the decrease in absorbance every minute during 3 minutes at 37°C.
Determine the △A/min.

CALCUTION:

Gamma-GT Activity (U/l) = △A/min. x 1280

LINEARITY:

Reagent is Linear up to 300 U/l.
Dilute the sample appropriately and re-assay if Gamma - GT activity exceeds 300 U/l or AAbs/min Exceeds 0.234. Multiply result with dilution factor.

REFERENCE NORMAL VALUE:

Male: 11 - 50 U/l
Female: 7-32 U/l
The reference values are only indicative in nature. Every laboratory should establish its own normal ranges.

QUALTY CONTROL:

For accuracy it is necessary to run known controls with every assay.

LIMITATION & 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 assay 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 to sample ratio as mentioned here above must be strictly observed as any change in to it will effect the factor.

BIBLIOGRAPHY:

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2. TIETZ - Text Book of Clin. Chem. Burtis - Ashwood 2nd Edition (1984).
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