ANA BIO CLR GAMMA - GT
(IFCC Method)

Intended Use
Gamma GT is a reagent set for determination of gamma glutamyltrasferase (GGT) in serum and plasma based on IFCC method.

Principle
Gamma-glutamyltrasferase(GGT) transfers the γ-glutamyl group of L- γ-glutamyl-3-carboxy-4-nitroanilide to glycylglycine. The amount of 5-amino-2-nitrobenzoate liberated at 405 nm is proportional to the activity of GGT in serum/plasma and is measured kinetically.

L- γ-glutamyl-3-carboxy-4-nitroanilide + glycylglycine

↓ GGT

L- γ-glutamyl-glycylglycine + 5-amino-2-nitrobenzoate

Reagents provided
1. Reagent R_1
2. Reagent R_2

Working reagent preparation
Prepare working solution by mixing Reagent R_1 and Reagent R_2 in the ratio 4:1 as per requirement.

Reagent storage and stability
The reagent kit should be stored at 2 - 8℃ and is stable till the expiry date indicated on the label.
R_1 and R_2 reagents are stable till expiry at 2 - 8℃.
The working solution ($4R_1 + 1R_2$) is stable for 21 days at 2 - 8℃.

Specimen collection and preservation
Blood should be collected in a clean dry container. Although serum is preferred, plasma with heparin or EDTA can be used. GGT in serum/plasma is stable for 7 days at 2 - 8℃ and 6 months at -20℃. Centrifuge samples containing precipitate before performing the assay. The samples should be brought to room temperature prior to use.

Assay guidelines for Analyzer

Reaction type	Kinetic
Reaction slope	Increasing
Wavelength	405 nm
Flow cell temperature	37℃
Zero setting with	Working solution
Delay time	60 seconds
Measuring time	120 seconds
Sample Volume	50 µl (0.05ml)
Reagent Volume	1000 µl (1.0ml)
Factor	2679

Assay guidelines for Manual procedure
Prewarm at 37℃ the required amount of working solution before use.

Reagent	Blank	Test
Working reagent	1000 µl (1.0 ml)	1000 µl (1.0 ml)
Sample	-	50 µl (0.05ml)

Mix thoroughly and transfer the assay mixture immediately to the thermostated cuvette and start the stop watch simultaneously. Record the first reading at 60th second and subsequently two more readings with 60 seconds interval at 405 nm.

Calculation

Activity of GGT in IU/L = ΔAbs/min. x 2679

Normal Range

Men	:	8 – 61 IU/L
Women	:	5 – 36 IU/L

Note: Expected range varies from population to population. It is therefore recommended that each laboratory should establish its own normal range.

Limitations

- If the GGT activity exceeds 1000 IU/L, dilute the specimen with normal saline and repeat the assay. In such cases the results obtained should be multiplied with the dilution factor to obtain correct GGT activity.
- The working solution is considered unsatisfactory and should not be used if the absorbance exceeds 1.000 at 405 nm against distilled water.

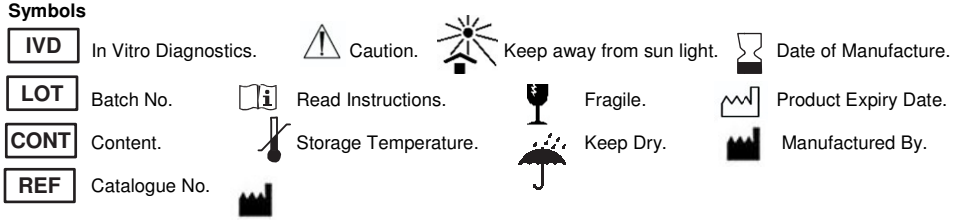
Quality Control

To ensure adequate quality control, it is recommended that each batch should include normal and abnormal commercial reference control serum. It should be realized that the use of quality control material checks both instrument and reagent functions together. Factors which might affect the performance of this test include proper instrument function, temperature control, cleanliness of glassware, and accuracy of pipetting.

References

1. Persijn JP, van der slik W.A new method for the determination of γ-glutamyltrasferase. J.*Clin.Chem.Clin.Biochem*. 1976; 4:421.
2. Shaw LM, Stromme JH, London JL *et. al. Clin. Chem*. Acta 1983; 135:315-338.
3. Shaw LM, Keeping pace with a popular enzyme GGT.*Diagnostic Medicine* 1982; May/ June: 1-8.
4. Tietz NW. *Clinical Guide to Laboratory Tests*, 3rd ed. Philadelphia, Pa: WB Saunders Company, 1995:286.

Symbols



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