

Gammaglutamyl transferase (GGT)

GGT

- GGT is an enzyme that catalyzes the transfer of the gamma-glutamyl group of glutathione to an acceptor that may be an amino acid or water .
- Therefore, it is involved in glutathione metabolism.
- It is an enzyme that consists of two polypeptide chains, a heavy and a light subunit.
- The active site of GGT is known to be located in the light subunit.

Tissue sources

- Found in hepatocytes and biliary epithelial cells.
- GGT is also present in the cell membranes of many tissues, including the kidneys, pancreas, gall bladder, spleen, heart and brain.

Diagnostic Significance

***Increased plasma GGT is associated with:**

- Hepatobiliary disease
- Biliary obstruction
- Alcoholic cirrhosis

***Used with ALP to differentiate between liver and bone diseases**

Principle:

- γ -glutamyl- γ -carboxyl- ξ -nitroanalide + glycylglycine -----GGT \rightarrow γ -glutamylglycylglycine + δ -amino- γ -nitrobenzoate
- The rate of liberate of yellow color indicator δ -amino- γ -nitr-benzoate is directly proportional to GGT activity.

Procedure

	Sample
W.R(ml)	1
Sample(μ L)	100

Method

- Mix, read initial absorbance at wavelength λ after t_0 sec and start timer. Read again after 1, 2 and 3 minutes.
- Determine the main absorbance change per minute.

Calculation

Activity of GGT = $\Delta A \times 110 \text{ U/L}$

Reference range

- Females= 7-32 U/L
- Males= 11-50 U/L