PATHOZYME DIAGNOSTICS

LIQVIPATH SGPT (ALT)

(Modified IFCC Method)

CAT NO.: PTL

Reagent kit for quantitative estimation of SGPT activity in Serum or Plasma.

DIAGNOSTIC SIGNIFICANCE:

Alanine transaminase is present in high concentrations in liver, kidneys,heart and skeletal muscle tissue. It is also present in lung, spleen, pancreas,brain and erythrocytes at a lower concentration. Primary liver diseases (cirrhosis, obstructive jaundice, carcinoma, viral or toxic hepatitis) as well as liver damage secondary to other causes result in elevated GPT levels. Patients undergoing extended hemodialysis without supplemental vitamin B6 therapy may show low GPT in serum.

PRINCIPLE:

L-Alanine and alpha-ketoglutarate react in the presence of GPT in the sample to yield pyruvate and L-glutamate. Pyruvate is reduced by lactate dehydrogenase to yield lactate with the oxidation of NADH to NAD. The reaction is monitored by measurement of the decrease in absorbance of NADH at 340 nm. The rate of reduction in absorbance is proportional to SGPT activity in sample.

L-Alanine + α-Ketoglutarate $\xrightarrow{GPT}$ Pyruvate + L-Glutamate

Pyruvate + NADH $\xrightarrow{LDH}$ Lactate + NAD

SPECIMEN COLLECTION:

Serum or Plasma free of hemolysis.

KIT PRESENTATION:

PACK SIZE	2 X 25 ml	4 X 25 ml	4 X 50 ml
R1- SGPT (Buffer Reagent)	2 X 20 ml	4 X 20 ml	4 X 40 ml
R2- SGPT (Substrate Reagent)	2 X 05 ml	4 X 05 ml	4 X 10 ml

WORKING REAGENT PREPARATION:

Mixing 4 volumes of R1 – SGPT (Buffer Reagent) with 1 volume of R2 – SGPT (Substrate Reagent). i.e. 800 µl R1 + 200 µl R2.
The working reagent is stable for **30 days** at 2-8°C.

REAGENT STORAGE AND STABILITY:

All reagents are stable at 2-8^{0}C until the expiry date stated on the label.

NORMAL VALUES:

5 - 40 IU/L
Each laboratory should establish its own reference range.

LINEARITY:

Linearity is 500 IU/L with first assay procedure. With second assay procedure linearity is 1000 IU/L. For values above 1000 IU/L, dilute the sample suitably with 0.9 % saline, and repeat the assay. Apply correction due to dilution to arrive at a final result.

ASSAY PARAMETERS:

Parameters	Normal Procedure	High Linearity Procedure
Reaction	Kinetic	Kinetic
Wavelength	340 nm	340 nm
Flow Cell Temp.	37^{0}C	37^{0}C
Initial Delay	60 Sec	60 Sec
Interval Time	60 Sec	30 Sec
Read Time	180 Sec	90 Sec
No. of Reading	03 Nos.	03 Nos.
Sample Volume	**100 µl**	**50 µl**
R1 + R2 Volume	800 µl + 200 µl	800 µl + 200 µl
Factor	**1746**	**3376**
Reaction Slop	Decreasing	Decreasing
Zero Setting	Dist. Water	Dist. Water
Linearity	500	1000
Unit	IU/L	IU/L
Feed any one of above parameters as per your choice		

PROCEDURE:

Addition Sequence	Test
R1-SGPT (Enzyme Reagent)	800 µl
R2-SGPT (Starter Reagent)	200 µl
Sample (Test)	100 µl (For Normal Procedure) **or** 50 µl (For High Linearity Procedure)

Mix & aspirate immediately and read **first** absorbance of test exactly at 60 seconds and then, **second, third** and **fourth** at an interval of 60 / 30 seconds (As per Program) at 340 nm. Determine the mean change in absorbance per minute. (ΔA/min) and calculate the test results.

CALCULATION:

SGPT Activity (IU/L) = ΔA/min X Factor (as per sample value)

REFERENCES:

1. Tietz, N.W., Clinical guide to laboratory tests. 3rd Ed., (W.B.Saunders eds. Philadelphia USA), (1995), 76.
2. Henderson, A.R., Moss, D.W., *Enzymes*, Tietz Fundamentals of Clinical Chemistry, 5th Ed., Burtis, C.A. & Ashwood, E.R. (W.B.Saunders eds. Philadelphia USA), (2001), 352.

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Expiry Date | IVD In-Vitro Diagnostics Use | Storage | Mfg. Date | LOT Batch Number | REF Catalogue Number | See Package Insert

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