ESTROM SGPT (ALT)

(IFCC Method)

ANGSTROM BIOTECH PVT. LTD

This reagent kit is for quantitative estimation of Glutamate Pyruvate Transaminase/ L-alanine transferase activity in serum or plasma.

PRINCIPLE:

In the bisubstrate reaction, transfer of aminogroup from L-alanine to ketoglutarate gives pyruvate and glutamate, this reaction is catalysed by pyruvate oxaloacetate transaminase. Further Lactate Dehydrogenase (LDH) acts on Pyruvate to yield lactate coupled with oxidation of NADH to NAD. The rate of decrease in absorbance is measured at 340 nm which corresponds to the GPT activity.

α-KETOGLUTARATE+L-ALANINE $\xrightarrow{\text{SGPT}}$ L-GLUTAMATE + PYRUVATE

PYRUVATE + NADH $\xrightarrow{\text{LDH}}$ LACTATE + NAD

CLINICAL SIGNIFICANCE:

GPT assay is an important factor in evaluating liver function in viral, bacterial or toxic hepatitis. Alanine transaminase is present in high concentration in liver, kidney, heart and skeletal muscle tissue. Elevated serum GPT is found in primary liver diseases (cirrhosis obstructive jaundice, carcinoma, viral or toxic hepatitis) and kidney diseases in metastatic carcinoma, hepatic congestion and myocardial infarction, there is slight increase in serum GPT level. In patients undergoing long term hemodialysis without vitamin B6 therapy, the GPT levels in serum may be decreased.

REAGENTS

All the reagents are to be stored at 2-8° C.

	No. of bottles	
	5 X 25 ML	5 X 10 ML
Reagent 1 (Substrate)	4	4
Reagent 2 (Buffer)	1	1

PRECAUTION:

- Estrom SGPT reagent is for In Vitro diagnostic use only.

Specimen:

1. Unhemolysed freshly collected serum/EDTA plasma (Morning samples are preferred).
2. Do not use the old samples that are stored for longer period as the internal pyruvate might give falsely elevated results.
3. Samples are stable for a week at 2-8°C and for a month when frozen at -10°C. Samples should be brought to room temperature prior to use.

Notes:

1.Take only the required amount of the reagent and keep the reagent back at 2-8°C immediately.
2.The reagent and sample volumes may be altered proportionally to accommodate into different analyzer requirements.

3. Using hemolysed sample is strictly restricted and the same may interfere with the original result.

Reagent Stability:

Do not make the working reagent.

Both Reagent 1 (R1) and Reagent 2 (R2) are available as ready to use reagents and are stable till the expiry date mentioned on the labels.

It is not suggested to make the working reagent when NADH are used as the reagents are configured as R1 and R2 systems to be used separately.

Mix R1 and R2 (800 R1 + 200 R2) along with sample at the time of testing

Test Procedure: Pipette into clean dry glass test tubes:

Dispense	Test
R1	800 µl
R2	200 µl
Serum / Plasma	100 µl

Mix well and after 60 Seconds incubation, measure the change in optical density per 60 seconds during 180 seconds against distilled water at 340 nm as follows.
Ao - Exactly after 60 Seconds
A1, A2, A3, A4 - Exactly after every 60 seconds for 180 seconds.

System Parameters:

Reaction type	: Kinetic	
Reaction Direction	: Decreasing	
Wavelength	: 340 nm	
Flow cell temp	: 37°C	
Zero setting with	: Distilled water	
Delay time	**: 60 secs**	**or Delay : 60 Sec**
Kinetic interval	**: 60 secs**	**Measuring : 180 Sec**
No. of readings	**: 4**	
Reagent volume	: 1ml	
Sample Volume	: 100 µl	
Factor	**: 1745**	
Linearity	: 500	
Units	: IU/L	
Low normal	: 0.00	
High normal	: 48.0	

LINEARITY:

This method is linear for SGPT activity up to 500 IU/L. For sample values exceeding the linearity limit, dilute the sample suitably with normal saline and repeat the assay. Apply proper dilution factor while calculation.

CALCULATION:

Concentration of SGPT in sample (IU/L) = Δ A/min. x Factor,
[Factor = 1745]

REFERENCE VALUES:

Normal Value : 0 - 48 IU/L
It is recommended that each laboratory establish its own reference values.

BIBLIOGRAPHY:

- The committee on Enzymes of the Scandinavian Society for Clinical Chemistry and Clinical Physiology, Recommended methods for determination of four enzymes in bloods. Scand.J. Clin. Lab invest 33, 291 (1974).
- Clin. Clim, Acta. 105, 147-172 (1980)

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	Attention,see instructions for use		Consult Instructions For Use
IVD	For in vitro diagnostic use only	REF	Catalog #
2°C 8°C	Store between 2-8°C	LOT	Lot Number
	Do not use if package is damaged		Date of Manufacturing
	Manufacturer		Use by