



SGPT Test Procedure



Last Modified on December 21, 2019 | Category: [Test Procedures](#) | [No comments](#)



SGPT is an enzyme found in the liver that helps convert proteins into energy for the liver cells. When the liver is damaged, SGPT is released into the bloodstream and levels increase.

SGPT Test Procedure, Result, Principle and more

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SGPT (ALT) Test

Principle Procedure Normal Range



SGPT Also Known as : [ALT](#), [Serum Glutamic-Pyruvic Transaminase](#), [SGPT](#), [GPT](#), [Alanine Transaminase](#), [ALAT](#)

Test Panel: [Total Bilirubin](#), [Conjugated Bilirubin](#), [Unconjugated Bilirubin](#), [ALT](#), [AST](#), [ALP](#), [Total Protein](#), [Albumin](#), [Globuline](#), [A/G ratio](#), [GGT](#),

Kinetic UV method

Kinetic UV method based on IFCC recommendations

Principle :

SGPT (ALT) catalyzes the transfer of amino group between L-Alanine and α -ketoglutarate to form pyruvate and glutamate. The pyruvate formed reacts with NADH in the presence of Lactate Dehydrogenase to form NAD. The rate of oxidation of NADH to NAD is measured as a decrease in absorbance which is proportional to the SGPT (ALT) activity in the sample.

Kit Contents:

- R 1 : SGPT Enzyme Reagent
 - Buffer Tris, pH = 7.5 --- 125 mmol/L
 - L-alanine ----- 600 mmol/L
 - LDH ----- ≥ 1.7 KU/L
- R 2 : SGPT Substrate Reagent
 - NADH --- 0.18 mmol/L
 - α -ketoglutarate --- 15 mmol/L
 - Detergent, preservative.

Test Requirements :

- Test Tubes
- Micropipettes
- Tips
- Bio-Chemistry analyzer
- SGPT Test Kit
- Calibrator

Reagent Preparation and Stability :

Working Reagent:

4 Part of R1 (0.8 ml)

1 Part of R2 (0.2 ml)

and Mix well

Avoid direct exposure to light. Stability of working reagent: 3 days at 2 – 8 °C.

Specimen collection and handling:

1. Non-hemolyzed [serum](#), heparinized or [EDTA plasma](#) is recommended.
2. Stability: 10 days at 2 – 8° C.

Analyzer Parameter Required :

- Reaction Type : Kinetic (decreasing)
- Wavelength : 340 nm (334nm – 365nm)
- Cuvette Temp : 37°C
- Delay Time : 60 sec
- Interval Time : 60 sec
- No. Of reading : 2
- Zero Setting : Deionised Water
- Light Path : 1 cm
- Factor : 1746

Test Procedure:

Pipette into clean dry test tube labeled as (T) and Calibrator Label (c) and QC Label (QC) or as your required:

Specimin	(T)	(C) / (QC)
Working Reagent	1.0 ml	1.0 ml
Pt. Sample	0.1 ml	-
Calibrator or QC	-	0.1 ml

Mix well and read the initial absorbance after 1 min and repeat the absorbance reading after every 1, & 2 mins. Calculate the mean absorbance change per minute (Δ OD/min.).

CALCULATION : SGPT activity (U/L) = D A/min. x 1746

NOTE: Samples having a very high activity show a very low initial absorbance as most of the NADH is consumed prior to the start of the measurement. If this is suspected then dilute the sample and repeat the assay

LINEARITY :

The procedure is linear upto 300 U/L.

if the activity exceeds this limit dilute the sample with normal saline (NaCl 0.9 %) and multiply result by dilution factor.

QUALITY CONTROL :

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

Normal Value :

Serum : < 40 U/L

Note: Each Laboratory or Each Company Kits should establish it's own normal range.

[Serum Glutamic-Oxaloacetic Transaminase \(SGOT\)](#)

SGOT is an enzyme that helps metabolize amino acids. Like SGPT, SGOT is normally present [...]

[Aspartate Aminotransferase \(AST\)](#)

AST is an enzyme that helps metabolize amino acids. Like ALT, AST is normally present [...]

[Serum Glutamic-Pyruvic Transaminase \(SGPT\)](#)

SGPT is an enzyme found in the liver that helps convert proteins into energy for [...]

[Alanine Aminotransferase \(ALT\)](#)

ALT is an enzyme found in the liver that helps convert proteins into energy for [...]

[Stroke](#)

A stroke occurs when a blood vessel in the brain ruptures and bleeds, or when [...]

[Heart Attack](#)

A heart attack is a medical emergency in which the supply of blood to the [...]

[IRON](#)

Also Known as : Serum Iron, Serum Fe, Iron Test Panel : Serum iron, Ferritin, TIBC, [...]

[Anemia](#)

Anemia is a condition that occurs when the amount of hemoglobin in a person's blood [...]



[Possible References Used](#)

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