

SGPT (ALT)

IFCC method without pyridoxal phosphate (P-5¹-P)
Kinetic. UV.

Code: 11030 (5x10 ml)

(For the analyser estimation of ALT/SGPT in Serum/
Plasma)

In VITRO USE Only.

SUMMARY & EXPLANATION OF TEST :

Alanine aminotransferase (ALT) also known as glutamate pyruvate transaminase (GPT) is a transaminase. ALT catalyses the transfer of the aminogroup of L-alanine to a ketoglutarate to give L-glutamate. The highest levels are found in the liver and kidneys, and in smaller amounts in heart and skeletal muscle.

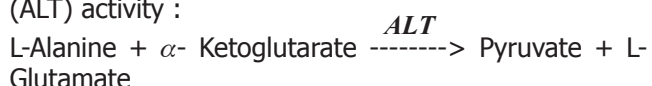
ALT concentration is increased when hepatic cells are damaged (liver cell necrosis or injury of any cause). Indeed, viral and toxic hepatitis induce a market elevation of ALT activity in serum. Intake of alcohol, delirium tremens, and administration of various drug induce slight or moderate elevation of ALT. ALT concentration in serum is also slightly increased in various conditions such as : muscular dystrophy, haemolytic disease, myocar-dial infarction....

ALT is more liver specific than AST (Aspartate aminotrasferase). Measurement of both AST and ALT has some value in distinguishing hepatitis from other parenchymal lesions.

ALT serum level can decrease in case of vitamin B₆ deficiency.

PRINCIPLE :

Kinetic determination of the alanine aminotransferase (ALT) activity :



REAGENTS :

01. Enzyme Reagent 4x10ml
02. Substrate Reagent 1x10 ml

The reagents are ready to use and usable to the expiration date when stored at 2 - 8°C & Protected from light, if contamination is avoided.

SAMPLE :

Serum
Heparin or EDTA plasma

EXPECTED RANGE:

Normal : <40 U/L

LINEARITY :

S G P T kit is linear upto 300 U/L

INSTRUCTIONS :

1. The reagents R1 & R2 contain less than 0.1 % sodium azide. Sodium azide can react with copper and lead plumbing to form explosive metal azides.
2. Use clean or single use glass material only to avoid contaminations.

3. High ALT values may induce falsely low results due to the depletion of the substrate (total consumption of NADH before reading of the result). If an analyser is used, verify the presence of a depletion factor on the application.

DIRECTIONS FOR USE ON ANALYSERS :

| | | |
|-----------------|---|---------------------|
| Reaction Type | : | Kinetic with factor |
| Wave Length | : | 340nm |
| Incubation Temp | : | 37°C |
| Incubation Time | : | 1 min. |
| Read Time | : | 3 min |
| No. of Readings | : | 4 |
| Interval Time | : | 1 min. |
| Sample Volume | : | 0.1 ml |
| Reagent Volume | : | 1 ml |
| Unit | : | U/L |
| Factor | : | 1746 |

PREPARATION AND STABILITY OF WORKING REAGENT:

Mix 4 volumes of the reagent 1 with 1 volume of reagent 2 this working reagent is stable upto 3 weeks at 2-8°C.

PROCEDURE:

One Reagent procedure

| | | |
|-----------------|---|--------|
| Working Reagent | : | 1ml |
| Sample | : | 0.1 ml |

Mix and after a 1 minute incubation, measure the change of optical density per minute ($\Delta\text{OD}/\text{min.}$) during 3 minutes.

Two Reagent procedure

| | | |
|----------------------------|---|----------|
| Reagent 1 | : | 1ml |
| Sample | : | 0.125 ml |
| Mix, wait 1 minute and add | : | |
| Reagent 2 | : | 0.250 ml |

Mix and after a 1 minute incubation, measure the change of optical density per minute ($\Delta\text{OD}/\text{min.}$) during 3 minutes.

CALCULATION:

At 340nm, with the one-reagent procedure and the two reagent procedure: Activity (U/L)= $\Delta\text{OD}/\text{min.}$ x 1746.

NOTES:

★ Due to variations in inter - laboratory assay conditions, instruments and demography, it is recommended that each laboratory should establish its own normal range. To ensure adequate quality control, each run should include a normal and abnormal assayed controls. The assigned value of the control must be confirmed by this methodology.

★ Final diagnosis should be based on a co-relation of test results with other clinical observations / Diagnostic tools.

BIBLIOGRAPHY:

1. 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.
2. Tietz, N.W., Clinical guide to laboratory tests, 3rd Ed., (W.B. Saunders eds. Philadelphia USA), (1995), 76.

Marketed in India by :

M/s Excel Diagnostics Pvt. Ltd.

Plot NO. 89, Road No.8, ALEAP I.E., Near Pragathi Nagar,
Opp. Kukatpally JNTU, Hyderabad - 500 090 (A.P.) INDIA.
E-mail : edpl@rediffmail.com Visit us at - www.exceldiag.com