

SGOT (AST)

IFCC method without pyridoxal phosphate
(P-5'-P) Kinetic. UV.

Code: 11028 (5 x 10 ml)

(For the analyser estimation of AST/SGOT in Serum/
Plasma)

In VITRO USE Only.

SUMMARY & EXPLANATION OF TEST:

Aspartate aminotransferase (AST) also known as glutamate oxaloacetate transaminase (GOT) is a transaminase. AST catalyses the transfer of the aminogroup of L-aspartate to a ketoglutarate to give L-glutamate. AST is widely distributed in the body, but the highest levels are found in heart, liver, skeletal muscles and kidneys.

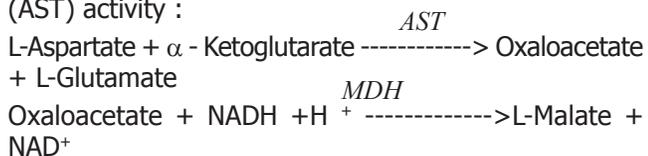
Damage to cells of these tissues induce AST increase in serum. In case of fluminant forms of hepatitis, especially viral hepatitis the enzyme level is markedly elevated. In case of myocardial in-farction, AST activity increases and reaches a peak after 18-24 hours. The activity falls back to normal after 4-5 days, provided no new infarct has occurred.

The following pathological states are examples of disorders also resulting in an increase of enzyme activity: liver cell necrosis or injury of any cause (for example intake of alcohol, delirium tremens, and administration of drug induce moderate AST elevation), alcoholic hepatitis, muscular dystrophy and gangrene, infectious mononucleosis, acute pancreatitis, hearty affection as myocarditis or pericarditis, pulmonary emboli....

On the contrary, AST serum level can decrease in case of vitamin B₆ deficiency.

PRINCIPLE:

Kinetic determination of the aspartate aminotransferase (AST) activity :



REAGENTS:

1. Enzyme Reagent 4x10 ml
2. 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 O 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

3. High AST 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) = $\Delta\text{OD}/\text{min.} \times 1746$.

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.

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