SGOT (ASAT)

(Mod. IFCC method)

INTRODUCTION

Aspartate aminotransferase (ASAT, AST, GOT) is an enzyme participated in amino acids metabolism. ASAT is found in all tissues but particularly high level of ASAT is observed in heart muscle, skeletal muscle, liver and kidney. Elevated ASAT serum level is a marker of myocardial infarction and kidney, liver or skeletal muscle injury.

METHOD PRINCIPLE

Optimized, modified method according to International Federation of Clinical Chemistry (IFCC), without pyridoxal phosphate.

L-aspartate + 2-oxoglutarate <ASAT> oxalacetate + L-glutamate

oxalacetate + NADH + H+ <MDH> malate + NAD+

The rate of absorbance changing at l=340 nm is directly proportional to aspartate aminotransferase activity.

KIT CONTENTS

Reagent Name	Pack Size
R1 SGOT reagent	2 x 40 ml
R2 SGOT reagent	2 x 10 ml

The reagents when stored at 2-8°C are stable up to expiry date printed on the package. The reagents are stable for 4 weeks on board the analyser at 2-10°C. Protect from light and avoid contamination.

WORKING REAGENT PREPARATION AND STABILITY

Assay can be performed with use of separate R1-ASAT and R2-ASAT reagents or with use of working reagent. For working reagent preparation mix gently 4 parts of R1-ASAT with 1 part of R2-ASAT. Avoid foaming.

Stability of working reagent: 4 weeks at 2-8°C
5 days at 15-25°C

Protect from light and avoid contamination.

CONCENTRATIONS IN THE TEST

Tris (pH 7.8)	80 mmol/l
L-aspartate	240 mmol/l
Malate Dehydrogenase (MDH)	≥ 400 IU/l
Lactate Dehydrogenase (LDH)	≥ 3000 IU/l
alpha-ketoglutarate	10 mmol/l
NADH	0.23mmol/l

WARNINGS AND NOTES

- Product for in vitro diagnostic use only.
- The reagents contain 0.09% sodium azide as a preservative. avoid contact with skin and mucous membranes.
- The reagents are usable when the absorbance of the working reagent is higher than 1.00 (read against distilled water, wavelength = 340 nm, cuvette l = 1 cm, at temp. 25°C).

ADDITIONAL EQUIPMEN

- Automatic analyzer or photometer able to read at 340 nm (Hg 334nm, 365nm)
- Thermostat at 25°C, 30°C or 37°C
- General laboratory equipment

SPECIMEN

Serum, heparinized or EDTA plasma free from hemolysis.
Do not use heparine ammonium salt.
Hemolysis should be avoided, since ASAT activity in erythrocytes is 10 times higher than in normal serum.
ASAT activity remains stable in specimen up to 1 day at 15-25°C or up to 7 days at 2-8°C. Although samples frozen at -20°C can be stored up to 1 month, it is recommended to perform the assay with freshly collected samples.

PROCEDURE

These reagents may be used both for manual assay and in several automatic analysers. Programme Sheets are available on request.

Wavelength	340 nm
Temperature	37°C
Cuvette	1 cm

Pipette into the cuvette:

Reagent	Test (T)
R1 SGOT reagent	800 µl
R2 SGOT reagent	200 µl
Bring to assay temperature, then add	
Sample	100 µl

Mix and incubate at adequate temperature. After about 1 min. read the absorbance against air or water. Repeat the reading after exactly 1, 2 and 3 minutes. Calculate the mean absorbance change per minute (ΔA/min.).

CALCULATION

ASAT activity [U/l] = ΔA/min. x 1746

REFERENCE VALUES

Female	upto 31 U/L
Male	upto 37 U/L

It is recommended for each laboratory to establish its own reference ranges for local population.

QUALITY CONTROL

To ensure adequate quality control, each run should include assayed normal and abnormal controls. If commercial controls are not available it is recommended that known value samples be aliquoted, frozen and used as controls.

PERFORMANCE CHARACTERISTICS

- **Sensitivity / Limit of Quantitation:** 5 U/L.
- **Linearity:** up to 500 U/L.
- **Specificity / Interferences:** Haemoglobin up to 2.5 g/dl, ascorbate up to 7.75 mg/l, bilirubin up to 20.0 mg/dl and triglycerides up to 500 mg/dl do not interere with the test.
- The working reagent should not be used, if the absorbance is less than 0.900 at 340 nm. against distilled water

WASTE MANAGEMENT

Please refer to local legal requirements.

LITERATURE

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4. Bergmeyer H.U., Horder M., Rej R.: J. Clin. Chem. Clin. Biochem. 24, 497 (1986).
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SYSTEM PARAMETERS

Method	Kinetic
Wavelength	340 nm
Zero Setting	distilled water
Temperature Setting	37° C
Incubation Temperature	37° C
Incubation Time	----
Delay Time	60 sec
Read Time	180 sec
No. of Reading	3
Interval Time	60 sec
Sample Volume	0.1 ml (100 ul)
Reagent Volume	1.0 ml (1000 ul)
Units	U/L
Factor	1746
Reaction Slope	Decreasing
Linearity	500 U/L

IVD

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