



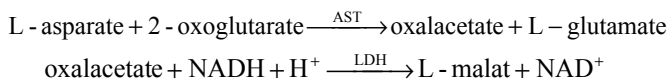
AST (GOT)
Aspartate aminotransferase / liquid
 (According to IFCC)

Cat.No. 101-0438

Size: 4x250 ml / 4x30 ml

PRINCIPLE:

AST catalyzes the transfer of amino group from L-aspartate to 2-oxoglutarate resulting in the formation of oxalacetate and L-glutamate. The oxalacetate thus formed undergoes reduction with simultaneous oxidation of NADH to NAD in the malate dehydrogenase catalyzed indicator reaction. Oxidation of NADH causes a decrease in absorbance at 340 nm (334 nm or 365 nm) and the rate of absorbance change is directly proportional to AST activity. LDH is included in the reagent to prevent interference from endogenous pyruvate which is normally present in serum samples at low concentrations.



SAMPLE:

Serum or heparinized plasma.

REAGENTS:

- Reagent 1 (Buffer/Substrate)
 - Tris buffer, pH 7.8 80 mmol/L
 - LDH 800 U/L
 - MDH 600 U/L
 - L-aspartate 200 mmol/L
- Reagent 2 (Enzyme/Coenzyme/ α -oxoglutarate)
 - α -oxoglutarate 12 mmol/L
 - NADH 0.18 mmol/L

Store at +2 °C to +8 °C.

REAGENT PREPARATION :

All reagents are ready to use.

Monoreagent method: mix 9 vol R1 + 1 vol R2

Working reagent is stable for 72 hours at +15 °C to +25 °C or 21 days at +2 °C to +8 °C.

PROCEDURE:

- Wavelength: 340, 334, 365 nm
- Temperature: 25 °C, 30 °C, 37 °C
- Cuvette: 1 cm light path
- Zero: air or H₂O

	Macro-test	Semimicro-test
Sample	200 μ l	100 μ l
Working reagent	2.0 ml	1.0 ml
Mix and wait 1 minute. Read absorbance decreasing every 60 sec during 1-3 min. Calculate $\Delta A/\text{min}$.		

CALCULATION:

$$\frac{\Delta A/\text{min} \times 10^6 \times \text{TV}}{6.3 \times 10^3 \times l \times V} = \Delta A/\text{min} \times F = U/l$$

Where is :

- ΔA = change in absorbance
- min = minute
- 6.3×10^3 = molar absorptivity of NADH at 340 nm
- 10^6 = conversion of mol to μ mol
- l = light path in cm
- TV = total reaction volume in ml
- V = sample volume in ml

$$\Delta A_{340 \text{ nm}/\text{min}} \times 1750 = \text{U/L AST}$$

$$\Delta A_{334 \text{ nm}/\text{min}} \times 1790 = \text{U/L AST}$$

$$\Delta A_{365 \text{ nm}/\text{min}} \times 3240 = \text{U/L AST}$$

$$\text{U/L} \times 16.67 = \text{nkatal/L}$$

EXPECTED VALUES:

	25 °C	30 °C	37 °C	UNIT
Men	up to 19	up to 26	up to 38	U/L
Women	up to 16	up to 22	up to 31	U/L

Temperature conversion factors.

Assay temperature	Desired temperature		
	25 °C	30 °C	37 °C
25 °C	1.00	1.37	2.08
30 °C	0.73	1.00	1.54
37 °C	0.48	0.65	1.00

LINEARITY:

If the absorbance change per minute ≥ 0.150 at 340 nm and 334 nm or ≥ 0.08 at 365 nm dilute the sample 1:10 with physiological solution and reassay (result x 10).

NOTE:

- Avoid haemolysis as it interferes with assay.
- Solution 1 contains sodium azide. Avoid ingestion or contact with skin or mucous membranes.

QUALITY CONTROL:

- CONTRO-N 20 x 5 ml Cat. No. 101-0083
- CONTRO-P 20 x 5 ml Cat. No. 101-0084

REFERENCE:

- Bergmeyer, H.U., Bowers, G.N., et al. Clin.Chim. Acta 70, 19-42 (1976) F and 21-22 (1977) F.
- Bergmeyer, H.U. and Wahlefeld, A. Clin.Chem. 24, 58-73 (1978).