AST/GOT (UV)
Kinetic-IFCC Method

CE IVD

PRODUCT CODE
CZ005

INTENDED USE
This reagent is intended for *in vitro* quantitative determination of AST/GOT in serum or plasma.

CLINICAL SIGNIFICANCE
The Aspartate aminotransferase (AST/GOT) a cellular enzyme, it is present in most of the tissues. Especially in cardiac muscle, liver cells, skeletal muscle & kidneys. Injury to these tissues results in the release of the enzyme in blood stream. Increased levels are found in myocardial infarction. The duration & extent of increase is related to the infract. GOT determination is of considerable value to differentiate myocardial infraction from other cardiac disorders. Increased levels are also found in various types of liver disease, skeletal muscle trauma & in renal diseases. Decreased levels may be found in pregnancy, Beriberi & Diabetic ketoacidosis.

PRINCIPLE
The AST/GOT catalyzes the transfer of the amino group from L-aspartate to 2-Oxoglutarate to yield oxaloacetate and L-glutamate. The oxaloacetate undergoes reduction with simultaneous oxidation of NADH to NAD^+ in the malate dehydrogenase (MDH) catalyzed indicator reaction. The resulting rate of decrease in absorbance at 340nm is directly proportional to the AST activity. Lactate dehydrogenase (LDH) is added to prevent interference from endogenous pyruvate which is normally present in serum.

$$\text{L-Aspartate} + \text{2-Oxoglutarate} \xrightarrow{\text{AST/GOT}} \text{Oxaloacetate} + \text{L-Glutamate}$$

$$\text{Oxaloacetate} + \text{NADH} + \text{H}^+ \xrightarrow{\text{MDH}} \text{L-Malate} + \text{NAD}^+$$

REAGENT COMPOSITION
REAGENT 1 (ENZYME REAGENT)

Tris pH 7.8	80 mmol/L
L-Aspartate	240 mmol/L
MDH	> 600 U/L
LDH	≥ 600 U/L

REAGENT 2 (SUBSTRATE)

2-Oxoglutarate	12 mmol/L
NADH	0.18 mmol/L

REAGENT PREPARATION
SUBSTRATE START
R1 and R2 are ready-to-use and stable upto the expiry date if contamination is avoided and stored at 2-8°C and protect from light.

SAMPLE START
Mix 4 parts of R1 + 1 Part of R2 = Mono reagent
Stability of mono reagent: 4 Weeks at 2-8°C, 4 days at 15-25°C,
Protect from light.
Note: Discard the working reagent if the blank absorbance less than 1.0 at 340 nm

SPECIMEN
Serum, heparinized plasma

PRECAUTION
1- The reagents contain sodium azide as preservative. Do not swallow and avoid contact with skin and mucous membranes.
2- To avoid contamination, use clean laboratory wares. Avoid direct exposure of reagent to light.

ASSAY
Wavelength : 340 nm, Hg 365 nm, Hg 334 nm
Cuvette : 1 cm light path
Temperature : 25°C/ 30°C/37°C
Adjust the instrument to zero with distilled water or air

PROCEDURE
SUBSTRATE START

Temperature	25°C or 30°C	37°C
Reagent 1 Buffer	1000 µL	1000 µL
Sample	200 µL	100 µL
Mix incubates for approx... 1 min, then add,		
Reagent 2 Substrates	250 µL	250 µL

SAMPLE START

Mono reagent (R1+R2)	1000 µL	1000 µL
Sample	200 µL	100 µL

READING FOR BOTH
Mix and read absorbance after 1 min and start stop watch.
Read absorbance again after 1, 2 and 3 min.

CALCULATION
Multiply factor from table below with ΔA/min,

Substrate start	**25°C / 30°C**	**37°C**
340 nm	1151	2143
334 nm	1173	2184
365 nm	2132	3971
Sample start	**25°C / 30°C**	**37°C**
340 nm	952	1745
334 nm	971	1780
365 nm	1765	3235

LINEARITY
up to 467 U/L,if the results obtained were greater than linearity limit, The sample should be diluted 1 + 9 with 0.9 % NaCl solution, if ΔA/min exceeds 0.16 at 340 nm or 334 nm, or 0.08 at 365 nm. Multiply the result by 10.

NORMAL RANGE

	25°C	30°C	37°C
Men up to	18 U/L	25 U/L	37 U/L
Women up to	15 U/L	21 U/L	31 U/L

Each laboratory should establish reference ranges for its own patients' population.

QUALITY CONTROL
All control sera with values determined by this method can be used.

SYMBOL ON LABELS

Symbols	Signify	Symbols	Signify
REF	Catalogue Number	SIZE	Pack Size
	Expiry Date	VOL	Volume
	Storage Condition	LOT	Lot Number
	Instruction for Use	IVD	In Vitro Diagnostics
	Manufacturing Date		Manufacturer
Σ	Number of Tests	2	For Single Use Only
EC REP	EC Representative	CE	European conformity

BIBILOGRAPHY

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