LDH

Kinetic-SCE Modified Method

IVD CE

PRODUCT CODE
CZ008

INTENDED USE
This reagent is intended for in vitro quantitative determination of Lactate dehydrogenase (LDH) in serum or plasma.

CLINICAL SIGNIFICANCE
Lactate dehydrogenase (LDH) is an enzyme with wide tissue distribution in the body. The higher concentrations of LDH are found in liver, heart, kidney, skeletal muscle and erythrocytes. Increased levels of the enzyme are found in serum in liver disease, myocardial infarction, renal disease, muscular dystrophy and anemia. Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

PRINCIPLE
Lactate dehydrogenase (LDH) catalyses the reduction of pyruvate by NADH, according the following reaction:

$$\text{Pyruvate} + \text{NADH} + H^+ \xrightarrow{\text{LDH}} \text{L-lactate} + NAD^+$$

REAGENT COMPOSITION
REAGENT 1 (BUFFER REAGENT)

Tris buffer	80 mmol/L
Pyruvate	1.6 mmol/L
Sodium Chloride	200 mmol/L

REAGENT 2 (SUBSTRATE)

NADH	0.15 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: 5 days at 2-8°C, 8 hours at 15-25°C.

SPECIMEN
Serum, Heparinized or EDTA plasma avoid hemolysis; Loss of activity within 3 days at (2-8)° C = 8% and at (15-25)° C=20%

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	20 µL	10 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	20 µL	10 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	10080	20000
334 nm	10275	20390
365 nm	18675	37060
Sample start	**25°C / 30°C**	**37°C**
340 nm	8095	16030
334 nm	8250	16345
365 nm	15000	29705

LINEARITY
If activities exceed 1200 U/L. Dilute 50 ul of sample with 500 ul of 0.9% NaCl and multiply the result by 11.

NORMAL RANGE

Temperature	25°C	30°C	37°C
Adults	120-240 U/L	160-320 U/L	225-450 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.

NOTE
The reagent contains sodium azide, handle with care and wash thoroughly with water if it comes in contact with the skin.

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
1- Z.Klin. chem. Klin Biochem.8,658 (1970), 1, 1820(1972).
2- Wei Bhaar, D., et al Med.Welt 26,387 (1975)

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