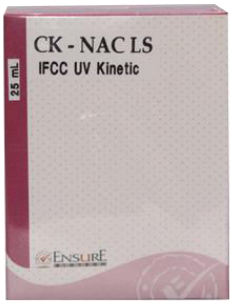
CK NAC



PRINCIPLE

Creatine Kinase (CK) catalyzes the phosphorylation reaction of ADP, in presence of creatine phosphate to form creatine and ATP. Produced ATP reacts with glucose in presence of hexokinase (HK), forming newADP and giucose-6-phosohate (G-6-P) which in presence of gtucose-6-phosphate dehydrogenase (G6-P-DH) produces 6-phosphogtuconate.The catalytic concentration of creatine kinase (CK) is determinated from the rate of NADPH measured at 340 in,which is formed in the last reaction of the enzyme chain. Nacetytcisteine (NAC) has function as Ckactivator.

Creatine Phosphate + ADP ------- Creatine + ATP

ATP + Glucose ---------- ADP + G6P

G6P+$NADP^+$ + H2O ---------- Gluconate-6P + $NADPH+H^+$

CLINICAL SIGNIFICANCE

Creatine Kinase enzyme (CK) is present in cardiac. cerebral and skeletal muscle tissue. An increase of its hematic activity could be associated to myocardial infarction. acutecerebrovascular forms. traumas or diseases in charge 0 the muscular system. After a myocardial infarction. the level of CK begins to grow up between the fourth and the sixth hour succeeding to the happening, reaching the maximum peak between the eighteenth and the thirtieth hour. returning then to the normal value during the third day.

SAMPLE COLLECTION & STORAGE

☑Serum, Plasma anticoagulated with heparin.

☑The activity of OK is stable 7 days at 2-8^{0}C

PRECAUTIONS

* CK NAC kit is for in vitro diagnostic use only.
* Bring all reagents to room temperature before use.

KIT CONTENT & STORAGE

Reagent A(Buffer Reagent) 10 ml - 2 Bottles
Reagent B(Enzyme Reagent) 5 ml - 1 Bottle
All reagents are to be stored at 2-8°C and stable till expiry date mentioned.

REAGENT PREPARATION

For Single test: Mix 800 µl of Reagent A with 200 µl of Reagent B (8: 2 Ratio)
For multiple tests: Mix 4 volumes of Reagent A with 1 volume of Reagent B (4: 1 Ratio)
Working Reagent is stable for 30 days at 2-8°C or 5 days at 20-25°C, protected from light.
Discard the reagent if presents an absorbance over 0.800 at 340 nm against distilled water

SYSTEM PARAMETERS

Reaction Type	Kinetic
Wave Length	340nm
Flow Cell Temp	37°C
Working Reagent	1.0 ml
Sample Volume	40 µl
Factor	4127
Delay Time	180 sec
Intervel	60sec
No of Readings	3
Blank	Dist. Water
Units	IU/L

PROCEDURE

Pipette in a clean dry test tube

Working Reagent	1.0ml
Sample	40µl

Mix gently, incubate for 3 minutes (180 seconds) and read initial absorbance. Repeat the absorbence readings exactly after 1,2 and 3 minutes against blank.caliculate ΔA/min.

CALCULATIONS

Conc of Total CKMB in serum (IU/L) = ΔA/min x 4127

LINEARITY

This method is linear up to 1600 IU/L. Samples exceeding linearity should be diluted and reassayed. The result has to be multiplied by the dilution factor.

Males	Females
24-195 IU/L	24-170 IU/L

Due to variation in inter-laboratory assay conditions, instruments and demography , it is recommended that each laboratory should establish its own normal range.

Bibilography

1. Kaplan, LA. Pesce, A.J.: Clinical Chemistry, Mosby Ed. (1996)

2. Mathieu, M., etcoll.,Ann. Biol, Clin, 40,87 (1982).

3. NCCLS Document, "Procedures for the collection of arterial blood specimens". Approved Standard, 3rd Ed. (1999)

4. EU-Dir 1999/11 Commission Directive of 8 March 1999 adapting to technical progress the principles of good laboratory practice as specified in Council Directive 87/18IEECEdition : 2007/07/04