

INTENDED USE:

This reagent kit is intended for *"in vitro"* quantitative determination of Creatine Kinase (CK-NAC) activity in serum based upon IFCC and DGKC recommendations.

CLINICAL SIGNIFICANCE:

Creatine kinase (CK) is an enzyme, which is found primarily in skeletal muscle, cardiac muscle and brain tissue. Elevated levels of CK are associated with myocardial infarction, various muscle disorders and diseases such as progressive Duchenne-type muscular dystrophy. In myocardial infarction, peak CK levels occur 24 to 36 hours after onset of chest pain and depending on the extent of damage can reach more than 10 times normal levels.

PRINCIPLE:

Creatine-phosphate + ADPK \longrightarrow Creatine + ATP

ATP + D-Glucose \longrightarrow G-6-P+ADP

G-6-P+NADP \longrightarrow Gluconate-6-phosphate⁻+NADPH+H⁺

CK= Creatine kinase
HK=Hexokinase

G-6-P-Glucose-6-phosphate
G-6-PDH = Glucose-6-phosphate-dehydrogenase

REAGENT COMPOSITION:

Reagent 1: Enzyme Reagent 1
Reagent 2: Enzyme Reagent 2

MATERIALS REQUIRED BUT NOT PROVIDED:

-Clean & Dry Glassware.
-Micropipettes & Tips.
-Colorimeter or Bio-Chemistry Analyzer.

SAMPLES:

Serum free of hemolysis. Heparin or EDTA plasma.

WORKING REAGENT PREPARATION & STABILITY:

Mix 4 Volume of Enzyme Reagent 1, with 1 Volume of Reagent Enzyme 2. Working Reagent is stable for 30 days at 2-8°C.

GENERAL SYSTEM PARAMETERS:

REACTION TYPE	Kinetic Reaction
WAVE LENGTH	340 nm
LIGHT PATH	1 cm
REACTION TEMPERATURE	37°C
BLANK / ZERO SETTING	With Distilled Water
REAGENT VOLUME	1 ml
SAMPLE VOLUME	50 µl
LAG / DELAY TIME	180 Sec.
READ TIME	30 Sec.
INTERVAL NO.	4.
FACTOR	3376
LOW NORMAL	0 U/l
HIGH NORMAL	190 U/l
LINEARITY	1500 U/l
Max. ΔAbs/min	0.363

ASSAY PROCEDURE:

WORKING REAGENT	1000 µl
SAMPLE	50 µl

Mix and after 120 second incubation, measure the change in absorbance every minute during 3 minutes at 37°C.

Determine the ΔA/min.

CALCULATION:

Creatine Kinase (CK-NAC) activity (U/l) = ΔA/min. x 3376

LINEARITY:

Reagents Linear up to 1500 U/l
Dilute the sample appropriately and re-assay if Creatine Kinase (CK-NAC) activity exceeds 1500 U/l or AAbs/min Exceeds 0.363. Multiply result with dilution factor.

REFERENCE NORMAL VALUE:

Female: upto 165 U/l, Male: upto 190 U/l

Babies (2-12 month) : upto 325 , Children (above 12 month) : upto 225

QUALITY CONTROL:

For accuracy it is necessary to run known controls with every assay.

LIMITATION & PRECAUTIONS :

1. Storage conditions as mentioned on the kit to be adhered.
2. Do not freeze or expose the reagents to higher temperature as it may affect the performance of the kit.
3. Before the assay bring all the reagents to room temperature.
4. Avoid contamination of the reagent during assay process.
5. Use clean glassware free from dust or debris.

BIBLIOGRAPHY:

Young et al., Clin. Chem., 21:10 (1975) Moren L. G., Clin. Chem., 23:1569 (1977)

PACK SIZE:

HCN010 1x10ml (R1: 8ml, R2: 2ml)



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