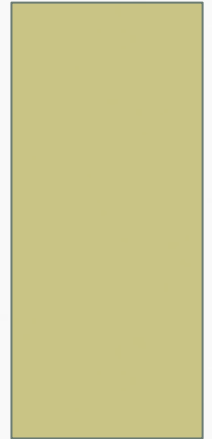


LAB 6

CK ENZYME

DAHEEYA ALENAZI
BIOSYSTEMS KIT (CHS264)



DEFINITION

Creatine kinase is an enzyme found in the heart, brain, skeletal muscle, and other tissues.

Increased amounts of CK are released into the blood when there is muscle damage.

person may have muscle injury with few or nonspecific symptoms, such as weakness, fever, and nausea.

TYPES

gene	protein
CKB	creatine kinase, brain, BB-CK
CKBE	creatine kinase, ectopic expression
CKM	creatine kinase, muscle, MM-CK
CKMT1A, CKMT1B	creatine kinase mitochondrial 1; ubiquitous mtCK; or _u mtCK
CKMT2	creatine kinase mitochondrial 2; sarcomeric mtCK; or _s mtCK

PRINCIPLE



The rate of **NADPH** formation, measured photometrically, is proportional to the catalytic concentration of CK present in the sample.

INVOLVED ENZYMES

- **CK**= Creatine kinase
- **HK**= Hexokinase
- **G6PDH**= glucose 6 phosphate dehydrogenase

CLINICAL SIGNIFICANCE

- Its physiological role is associated with ATP generation for contractile or transport systems.
- Its major function is predominantly active in muscles.
- Highest activity is present in skeletal muscle, heart, brain tissue.
- Lesser activity is seen in bladder, placenta, GIT, lung, liver and pancreas.

CLINICAL USE

- ◆ Elevated CK values are observed in disorders of cardiac and skeletal muscles.
- ◆ Is regarded as the most sensitive indicator of acute myocardial infarction and of muscular dystrophy.
- ◆ **Sample:**
Serum or plasma

PROCEDURE

WR -μl	1000
Test	50

Put in cuvette and mix.

1- read 1st Abs. as initial reading. At 340 nm

2- After 1 min read the 2nd Abs.

3-After 1 min read the 3rd Abs

4- After 1min read the 4th Abs.

Calculate the difference between the intervals.

To get $\Delta A / 3 \text{ min}$.

CALCULATIONS

$\Delta A/\text{min} \times 3333 = \text{U/L of CK}$

◆ Reference values:

Men = 10-65 U/L

Women = 7-55 U/L

Children have higher CK than Adults.

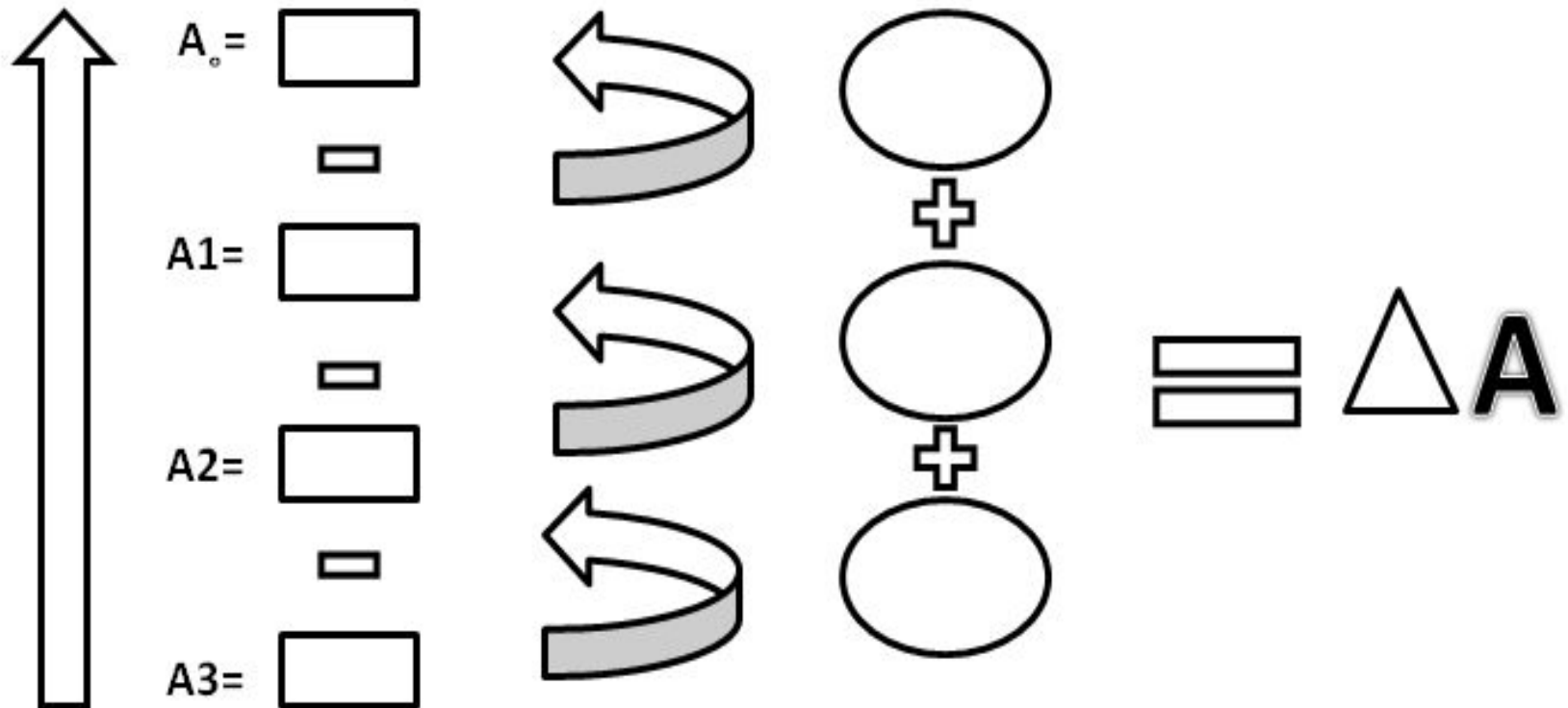
CLS431 Enzymology Reports

1-Title of Experiment:

2-Principle:

3-Sample#

4-Readings:



$\Delta A / \text{min} =$

*Activity of Enzyme(name it)= $\Delta A / \text{min} \times \text{Factor}(\text{given}) = \dots \text{U/L}$

5- Normal range for male and female

6-Comment the result:

The activity of enzyme it's with in normal range(Normal)

OR The activity of enzyme, it's out of the normal range (Abnormal)