CORALYZER
System Pack

Creatinine Kit

(Enzymatic PAP method)

For the determination of Creatinine in serum and urine.
(For Invitro Diagnostic Use Only)

Summary

Creatinine is the catabolic product of creatinine phosphate which is used by the skeletal muscle. The daily production depends on muscular mass and it is excreted out of the body entirely by the kidneys. Elevated levels are found in renal dysfunction, reduced renal blood flow (shock, dehydration, congestive heart failure) diabetes acromegaly. Decreased levels are found in muscular dystrophy.

Principle

The enzymatic assay for creatinine involves a series of coupled enzymatic reactions including creatininase enzymatic conversion of creatinine into the product creatine which is converted to sarcosine by creatine amidinohydrolase (creatinase), followed by oxidation of sarcosine by sarcosine oxidase (SOD) producing hydrogenperoxide.The hydrogen peroxide formed further reacts with a phenolic cromogen and 4 Aminoantipyrine by the catalytic action of peroxidase to form a coloured quinoneimine dye complex. Intensity of colour formed is directly proportional to the amount of Creatinine present in the sample. In the presence of Peroxidase (POD) the hydrogen peroxide is quantified at 550 nm by the formation of a colored dye. Any endogenous creatine present in the sample is removed by creatinase and sarcosine oxidase during preincubation.

$$\text{Creatinine} + H_2O \xrightarrow{\text{Creatininase}} \text{Creatine}$$

$$\text{Creatine} + H_2O \xrightarrow{\text{Creatinase}} \text{Sarcosine} + \text{Urea}$$

$$\text{Sarcosine} + H_2O + O_2 \xrightarrow{\text{Sarcosine Oxidase}} \text{Glycine} + H_2O_2 + \text{HCHO (Formaldehyde)}$$

$$2\,H_2O_2 + 4\text{AAP} + \text{Phenolic Chromogen} \xrightarrow{\text{Peroxidase}} 4\,H_2O + \text{Quinoneimine Dye}$$

Normal reference values

		Serum	Urine, 24hrs. collection
Males	:	0.6 - 1.2 mg%	1.1 - 3.0 gm
Females	:	0.5 - 1.1 mg%	1.0 - 1.8 gm

It is recommended that each laboratory establish its own normal range representing its patient population.

Contents

Coralyzer 100 System Packs	**60 ml**	**120 ml**
L1 : Enzyme Reagent 1	2 x 22.5 ml	3 x 30 ml
L2 : Enzyme Reagent 2	2 x 7.5 ml	30 ml

Coralyzer 200 System Packs	**60 ml**	**160 ml**
L1 : Enzyme Reagent 1	2 x 22.5 ml	3 x 40 ml
L2 : Enzyme Reagent 2	2 x 7.5 ml	40 ml

Stoage & Stability

Contents are stable at 2-8^0 C till the expiry mentioned on the labels.

Reagent preparation

Reagents are ready to use. Protect from bright light.

Sample material

Serum or Urine. Creatinine is stable in serum for 1 day at 2-8^0 C. Urine of 24 hours collection is preferred. Dilute the specimen 1:9 with distilled / deionised water before the assay.

Calibration

Calibrator is recommended for calibration of this assays.

Linearity

This procedure is linear upto 50 mg/dl.

Note

Avoid any contamination of reagent L1 with L2.

References

Piero Fossati ,et .al .Enzymatic Creatinine Assay A New Colorimetric Method Based on Hydrogen Peroxide Measurement (1983) Clin. Chem 29 : 1494-1496. Artiss J.D., Enroe.R.J.,Zak, (1984) Clin. Chem. 30:1389. Tietz N.W. (1995) Clinical Guide to Laboratory Test, 3rd Ed. P. 186-188. New water soluble reagents for the enzymatic photometric determination of hydrogen peroxide K. Tamaoku, et al. anal. clin. acta 136, 121 (1982)

Programming on	**CORALYZER 100/200**
Item	CREATININE (E)
Full Name	CREATININE (E)
Test Method	Two Point
Base Information	
Unit	mg/dl
Filter	546 nm
Sub. Filter	NONE
Decimal	xx.xx
High pollute	No
Reagent Blank	
Blank Medium	Reagent
Blank Value	0
Blank Low	0
Blank High	1
Sample	
Sample Volume	5
Dilution Times	1
Range Setup	
Reagent	
Rgt. 1 Volume	225
Rgt. 2 Volume	75
Linearity	50
Read data for check	
Assistant Start	NONE
Assistant End	NONE
Range Low	0
Range High	2
Test Point Start	17
Test Point End	23
Standard	
Number of standard	1
Factor	1
Correct Factor	1
Standard Cup	User Defined
Conc.	See Calibrator

Manufactured by :
Coral Clinical Systems
A Division of Tulip Diagnostics (P) Ltd.
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