# N BIO - CREATININE (Kin.)

(Mod. Jaffe's kinetic method)

KIT NAME	KIT SIZE	CAT. NO
N BIO - Creatinine	2 x 50 ml	DCRK02050M
N BIO - Creatinine	2 x 100 ml	DCRK02100M

## INTRODUCTION

Creatinine is a product of creatine nonenzymatic dehydration in skeletal muscle. The amount of creatinine generated and excreted by kidney is proportional to muscle mass and usually is higher in men than women. Daily creatinine generation remains fairly constant, with the exception of crushing injury or degenerative diseases that cause massive damage to muscle. Creatinine blood and urine level depends on glomelural filtration so creatinine clearance is excellent index of renal function.

#### METHOD PRINCIPLE

Modificated Jaffe's method, without deproteinization. In alkaline solution picrate reacts with creatinine to form a yellow-red 2,4,6-trinitrocyclohexadienate. The colour intensity is proportional to the creatinine concentration.

#### **KIT CONTENTS**

Reagent Name	DCRK02050M	DCRK02100M
R1 Creatinine Reagent	1 x 50 ml	1 x 100 ml
R2 Creatinine Reagent	1 x 50 ml	1 x 100 ml
R3 Standard	1 vial	1 vial

Plese refer standard value mentioned in the vial.

The reagents when stored at R.T are stable up to expiry date printed on the package. The reagents are stable for 1 week on board the analyser at  $2-10^{\circ}$ C. Protect from light and avoid contamination.

# WORKING REAGENT PREPARATION AND STABILITY

Assay can be performed with use of separate R1-CREATININE and R2-CREATININE reagents or with use of working reagent.

Stability of working reagent : 1 week at 2-8°C 5 days at 15-25°C

Working reagent should be stored in tightly closed vials! If stored in open vial, it is stable for 1 day at 15-25°C! Protect from light and avoid contamination.

#### **CONCENTRATIONS IN THE TEST**

Sodium hydroxide	500 mmol/
Sodium picrate	7.7 mmol/

#### WARNINGS AND NOTES

Product for in vitro diagnostic use only.

The reagents are usable when the absorbance of the working reagent is less than 0.750 (read against distilled water, wavelength  $\lambda$ =500 nm, cuvette I=1 cm, at temp. 25°C).

#### ADDITIONAL EQUIPMENT

- Automatic analyzer or photometer able to read at 500 nm (492 nm)
- Thermostat at 25°c
- General laboratory equipment

#### **SPECIMEN**

Serum, EDTA or heparinized plasma free from hemolysis, 24-hours urine.



Urine Creatinine should be usually carried out in 24 hours urine collection. Thymol should be used as a preservative for collection. The urine sample should be mixed and diluted with 1: 25 with distilled water Specimen can be stored up to 7 days at 2-8°C. For longer storage samples should be frozen at -20°C. Nevertheless it is recommended to perform the assay with freshly collected samples.

#### PROCEDURE

These reagents may be used both for manual assay and in several automatic analysers. Applications for them are available on request.

Wavelength	505 nm	
Temperature	25°C	
Cuvette	1 cm	

#### **Pipette into the cuvettes:**

Reagent	Standard (S)	Test (T)
R1 Creatinine Reagent	500 μl	500 μl
R2 Creatinine Reagent	500 µl	500 µl
R3 Standard	100 µl	-
Sample	-	100 µl

Mix well and after exactly 30 sec read absorbance A1 of the test (T) and standard (S) against air. After next 60 sec repeat absorbance reading (A2) and calculate  $\Delta A$  (A2 – A1) for the test and standard.

#### Calculation

Creatinine concentration =  $\Delta A(T) / \Delta A(S) x$  standard concentration

#### **REFERENCE VALUES**

Serum / Plasma	mg / dl
Female	0.6 to 1.1
Male	0.7 tp 1.3
2 hour urine	mg / 24 hours
Female	11 to 20
Male	14 to 26

It is recommended for each laboratory to establish its own reference ranges for local population.

#### **QUALITY CONTROL**

To ensure adequate quality control, each run should include assayed normal and abnormal controls. If commercial controls are not available it is recommended that known value samples be aliquoted, frozen and used as controls

#### PERFORMANCE CHARACTERISTICS

- Sensitivity / Limit of Quantitation: 0.05 mg/dl
- Linearity: up to 30 mg/d, if creatinine concentration exceeds 30 mg/dl, dilute the sample with distilled water in the ratio of 1:9 and repeat the assay. Multiply the result by 10
- Specificity / Interferences Haemoglobin up to 12.5 g/dl, triglycerides up to 500 mg/dl, ascorbate up to 62 mg/l and bilirubin up to 20 mg/dl do not Interfere with the test.

#### WASTE MANAGEMENT

Please refer to local legal requirements.

#### LITERATURE

- 1. Jaffé M., Z. Physiol. Chem. 10, 391-400 (1886).
- 2. Fabiny D.L. and Ertinghausen G., Clin. Chem. 17, 696-700 (1971).
- 3. Bartels H., Bohmer M., Clin. Chim. Acta 32, 81-85 (1971).
- 4. Bowers L.B. and Wong E.T., Clin. Chem. 26/5, 555-561(1980).
- Murray R.L., Meth. in Clin. Chem., the C.V. Mosby Comp., 10-17 (1987).
- Kaplan L.A., Pesce A.J., ed. Chemistry Theory, Analysis, and Correlation, 3rd ed. St Louis, MO: Mosby, 498-9(1996).
- Tietz N.W., ed. Clinical Guide to Laboratory Tests, 3rd ed. Philadelphia, PA: WB Saunders, 188, (1995).
- Burtis C.A., Ashwood E.R., ed. Tietz Textbook of Clinical Chemistry, 2nd ed. Philadelphia, PA: WB Saunders, 1535(1994).
- Dembinska-Kiec A, Naskalski J.W.: Diagnostyka laboratoryjna z elementami biochemii klinicznej, Volumed, 24-25, (1998).

## SYSTEM PARAMETERS

Method	Fixed Time (2-Point)
Wavelength	505 nm
Zero Setting	Distilled Water
Temperature Setting	25° C
Incubation Temperature	25° C
Incubation Time	
Delay Time	30 secs
Read Time	60 secs
No. of Reading	2
Interval Time	
Sample Volume	0.01 ml (10 ul)
Reagent Volume	1.0 ml (1000 ul)
Standard Concentration	Refer Standard vial
Units	mg/dl
Factor	
Reaction Slope	Increasing
Linearity	30 mg/dl





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