

CREATININE KINETIC

JAFFE METHOD

Principle:

Kinetic determination without deproteinization; the complex formed by creatine and picric acid in an alkaline medium is measured. The speed of absorbance change is proportional to the creatinine concentration.

Reagent Concentration:

Picric acid solution:
Picric Acid 35 mmol/l

NaOH solution:
Sodium hydroxide 0.32 mmol/l

Standard:
Creatinine 2mg/dl (176.8µmol/l)

Preparation and Stability

Dilute 1 volume of picric acid solution /R1 with 1 volume of NaOH solution /R2.

The solution mixture is stable for 15 days at +4 to +8 °C or 3 days at +20 to +25 °C.

Samples:

Serum, heparinised plasma.

Urine diluted 1:50 (0.1ml Urine+5ml water).

Take dilution into account for calculation.

Procedure:

Wavelength: 592nm (480-520nm)
Temperature: +25 / +30 / +37°C
Cuvette: 1cm light path
Zero adjustment: air or distilled water.

Since the reaction is highly temperature sensitive, care must be taken to ensure that the solutions are pre-heated to an exact temperature and the reaction must proceed at a constant temperature.

The reaction temperature of the standard and of the sample must be identical! Provided these conditions are fulfilled, the determination can be carried out at any chosen temperature between +20 and +37°C.

	Semi micro		Micro	
	1000µl	1000µl	500µl	500µl
Working sol.	100µl	---	50µl	---
Standard	---	100µl	---	50µl

Mix, pour immediately into the cuvette. After exactly 20 seconds read A1 of sample and standard.

Exactly 80 seconds after the first reading, read A2 of sample and standard.

Calculation:

Creatinine in serum or plasma:

? A sample
----- x 2.0 = creatinine conc.
? A standard

Creatinine in urine:

? A sample
----- x 100 = creatinine conc.
? A standard

Creatinine in 24 hours urine:

Conc.
----- x dl Urine/24hrs= creatinine in mg/24h
dl urine

Linearity:

This method is linear up to 10mg/dl (= 884 µmol/l).
In case of higher results, dilute sample 1:5 with saline solution and repeat test. Multiply result by 5.

Normal Values:

Serum: Women: 40-140mg/dl (0.45-1.6mmol/l)
Men: 60-165 mg/dl (0.68-1.9mmol/l)

Urine: 1-1.5g/24h (8.84-13.3mmol/l)

Quality Control:

For accuracy and reproducibility control:-
Assayed Multi-Sera Normal and Elevated.
For reproducibility control:-
Multi-Sera Loaw, Normal and Elevated.

Presentation:

#CRE4482 200ml, 100 tests
Picric Acid Buffer 1 x 100ml
NaOH solution 1 x 100ml
Standard 1 x 5ml

Safety precautions:

For in vitro diagnostic use only. Do not pipette by mouth.
Exercise the normal precautions required for handling laboratory reagents.

Health and Safety data sheets are available on request.

Literature:

Bartels H. et. Al. – Clin. Chim. Acta. 37, 193-197 (1972)
Henry, R. J. Clin. Chem. Principles and Techniques, 2nd.
Ed., Harper and Row, P. 543 (1974)