



Creatinine

Liquid Reagent

Kinetic method

**Store at Room temperature
(avoid direct exposure to light)**

PRINCIPLE

Creatinine, in alkaline picrate solution, forms a color complex. The rate of formation of complex is measured, the effect of Bilirubin and Glucose are reduced by using the kinetic procedure.

REFERENCE VALUES

Serum	Men	0.6 - 1.3 mg/dl
	Women	0.5 - 0.9 mg/dl
Urine		1 - 2 g/24h

These ranges are given for orientation, each laboratory should establish its own normal ranges.

SAMPLES

Serum or heparin plasma, Urine diluted 1/50 with distilled water . Creatinine in serum or plasma is stable for 24 hours at 2-8°C.

REAGENTS

R₁	Sodium hydroxide	313 mmol/l
R₂	Picric Acid	35 mmol/l
R₃	Standard	2 mg/dl

Reagents are stable at room temperature up to the expiry date.

PREPARATION OF WORKING REAGENT

Mix proportionally 1/1 the reagents R₁ and R₂
Stability : 1 month at 20-25 °C.

PROCEDURE

Wavelength	500 nm (480 – 520 nm)
Cuvette	1 cm light path
Measurement	Against air or distilled water
Temperature	25° C – 30° C - 37° C
Method	Kinetic - increasing

If the absorbance of the working reagent is higher than 0.4 at 492nm the reagent can not be used.

	Standard	Sample
Standard	100µl	-
Sample	-	100µl
Working reagent	1 ml	1 ml

Mix, and after 30 seconds, read the optical density (O.D₁) and exactly 1 minute after first reading (O.D₂) .

CALCULATION

Concentration of creatinine in serum or plasma:

$$\frac{(O.D_2 - O.D_1) \text{ sample} \times \text{Standard concentration}}{(O.D_2 - O.D_1) \text{ standard}}$$

Concentration of creatinine in urine:

$$\frac{(O.D_2 - O.D_1) \text{ sample} \times \text{Standard concentration} \times 50}{(O.D_2 - O.D_1) \text{ standard}}$$

Creatinine Clearance:

$$(\text{ml/min}) = \frac{\text{mg creatinine/dl urine} \times \text{ml urine 24 h}}{\text{mg creatinine/dl serum} \times 1440}$$

LINEARITY

Up to 15 mg/dl (884 µmol/l).

SPECIFICATION

Hemoglobine 0.4g/l, Bilirubin 0.5g/l, lipid 10g/l, glucose 0.5g/l and ascorbic acid 0.15g/l do not interfere with the assay up to the given levels

NOTES

-The presence of high concentration of keton derivatives, pyruvate acid, ascorbic acid, glucose, urea, proteins interfere with the test, kinetic assay reduce the disturbing effects of some substances. Because of difference in reaction rates, creatinine reacts faster with picrate as dose with some non specific disturbing chromogens.

-Reaction products are very sensitive to temperature, therefore specified temperature must be maintained.

-Solution 2 contains picric acid which is poisonous.

-Solution 3 contains sodium hydroxide which is caustic.

PRESENTATION

2 X 120 ml	Cat No 1701	240 Tests
4 X 250 ml	Cat No 1702	1000 Tests

BIBLIOGRAPHY

- Clin. Chim. Acta 1972, 37,193.
- Z. Klin, U. Klin, Biochem. 1974,12,344.
- Jaffe J., Physiol. Chem., 10, 391, 1886

The following symbols are used on labels



For in vitro diagnostic use



Use day (last day of the month)



Temperature limitation

LOT

Batch code

REF

Code