UREA

Urease-Berthelot Method **100 Tests**

PRINCIPLE :

The method is based on the following reaction:

$$\text{Urea} + H_2O \xrightarrow{\text{Urease}} 2\,NH_3 + CO_2$$

The ammonium ions formed are measured by the Berthelot reaction. The blue dye indophenol product reaction absorbs light between 530 nm and 560 nm proportional to initial urea concentration .

SAMPLES :

Serum, plasma. Urine diluted 1 : 100 with distilled water.

NORMAL VALUES :

Serum or plasma	**2.5 – 8.3 mmol/l (15 – 50 mg /dL)**
Urine	**583 mmol/ 24h (20 – 35 g/**

REAGENTS :

1.	Standard	50 mg / dL (8.3 mmol/L)
2.	Buffer – Enzyme : Phosphate buffer Urease	 50 mmol / L > 10000 u / L
3.	Color Reagent : Phenol Sodium nitroprussid	 100 mmol / L 0.2 mmol / L
4.	Alkaline Reagent : Sodium hydroxide Sodium hypochlorite	 150 mmol / L 15 mmol / L

STABILITY :

The reagents are stable up to the expiry date specified when stored at +4 to +8 °C .

PROCEDURE:

	Blank (ml)	Standard (ml)	Sample (ml)
Standard	-	0.01	-
Sample	-	-	0.01
Reagent 2	0.2	0.2	0.2
Mix, incubate for 5 min, at 37ºC			
Reagent 3	1.0	1.0	1.0
Reagent 4	1.0	1.0	1.0

Mix, incubate for 10 min. at 37ºC. Measure the absorbance of the sample (A_{Sample}) and of the standard ($A_{Standard}$)against the blank at 550 nm, (530 – 570 nm). Color stable for 5 hours. Linearity up to 200 mg / dl (33.3 mmol/L) in serum or plasma and 4 g / dl (665 mmol/L) in urine .

CALCULATION :

Urea Concentration

$$= \frac{A_{Sample}}{A_{Standard}} \times \text{Standard Conc.}$$

$$\text{Urea in urine (g /dl)} = \frac{A_{Sample}}{A_{Standard}} \times 5$$

NOTE: One mg urea corresponds to 0.467 mg of urea nitrogen.

QUALITY CONTROL:

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

REFERENCES :

Fawcett, J.K and Soctt, J.E., (1960):J, Clin., Path. 13 : 156 - 159

BIODIAGNOSTIC
DIAGNOSTIC AND RESEARCH REAGENTS

UREA

Urease-Berthelot Method

Enzymatic Colorimetric Method
+ 4 to +8ºC **100 Tests**
In vitro diagnostic use

CAT. NO. **UR 21 10**

REAGENTS

R1	**Standard**	**2.5**	**ml**
R2	**Buffer-Enzyme**	**20**	**ml**
R3	**Color reagent**	**100**	**ml**
R4	**Alkaline reagent**	**100**	**ml**

CONTACTS

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