ACCUCARE

UREA REAGENT

(BERTHELOT METHOD)

Quantitative determination of UREA in Serum/Plasma
Only for *In Vitro* Diagnostic use

ORDER INFORMATION

REF	Cont.
LURE 100	2 X 50 ML
LURE 200	2 X 100 ML

CLINICAL SIGNIFICANCE

Urea is the final result of the metabolism of proteins; It is formed in the liver from their destruction. It can be elevated in blood in: diets with excess of proteins, renal diseases, heart failure, gastrointestinal hemorrhage, dehydration or renal obstruction. Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

PRINCIPLE

The Berthelot reaction has long been used for the measurement of urea and ammonia. The present method is a modified Berthelot Method. The Urea colorimetric procedure is a modification of the Berthelot reaction. Urea is converted to ammonium by the use of urease. Ammonium ion then reacts with a mixture of salicylate, sodium nitroprusside and hypochlorite to yield a blue-green chromophore. The intensity of the color formed is proportional to the urea concentration in the sample.

REAGENT COMPOSITION

Reagent I : Buffer reagent
Reagent II : Enzyme reagent
Reagent III : Color developer (Hypochlorite solution)
standard : Urea Standard 50mg/dl (8.33 mmol/L)

SAMPLE COLLECTION AND PRESERVATION

Serum or plasma.
Stability : 7 Days at 2-8℃ or 1 year at -20℃.

REAGENT PREPARATION

All reagents are ready to use.

REAGENT STORAGE AND STABILITY

When stored between 2-8℃ All the reagents are stable until the expiration date stated on the bottle and kit box label.

REFERENCE VALUES

Serum/Plasma	15 - 50 mg/dl (2.49 - 8.33 mmol/L)

The reference values are to be considered as indicative only. Every Laboratory should establish is own normal range.

AUTOMATED PARAMETERS	
Wavelength	578 nm
Cuvette	1 cm light path
Reaction Temperature	37℃
Measurement	Against Reagent Blank
Reaction Type	End Point
Sample Volume	10 µl
Reagent Volume	1.1 ml + 1.0 ml
Incubation	5 min. + 5 min.
Blank Absorbance Limit	< 0.200
Low Normal	15 mg/dl (2.49 mmol/L)
High Normal	50 mg/dl (8.33 mmol/L)
Linearity	200 mg/dl (33.32 mmol/L)

MANUAL ASSAY PROCEDURE

PIPETTE INTO TEST TUBES

	BLANK	STD	SAMPLE
REAGENT I	1000 µl	1000 µl	1000 µl
REAGENT II	100 µl	100 µl	100 µl
STANDARD	-	10 µl	-
SAMPLE	-	-	10 µl
Mix well and incubate for 5 mins at 37℃ or 10 mins at R.T.			
REAGENT III	1000 µl	1000 µl	1000 µl
Mix well and incubate for 5 mins at 37℃ or 10 mins at R.T.			

Measure the absorbance (AS) of standard, (AT) of test against reagent blank at 578 nm.

CALCULATION

Urea (mg/dl) = AT / AS X Conc. of Std.

LINEARITY

The reagent is linear to 200 mg/dl (33.32 mmol/L)Urea.
Samples with values above 200 mg/dl should be diluted 1:1 with 0.9% saline, reassayed and the results multiplied by 2.

INTERFERENCES

Lipemia (triglycerides upto 1000 mg/dL) and bilirubin upto (20 mg/dL) do not interfere.
Hemolysis (hemoglobin 2 g/L) and elevated ammonia interfere. Other drugs and substances may interfere.

QUALITY CONTROL

It is recommended to run a normal and a pathological control serum which is commercially available to verify the performance of the measured procedure. The value of controls should fall within the established limit

BIBLIOGRAPHY

Teitz, N.W; Fundamentals of clinical chemistry, Philadelphia, W.B. Saunders & Co., - Philadelphia, PA, p991(1976)., Talke H, Schubert GE, Klin Wchers., (1965), 43, 174.

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