ESTROM UREA/BUN (GLDH Method)

This reagent kit is for quantitative estimation of urea in serum or plasma.

PRINCIPLE:

Urea is acted upon by urease releasing ammonia and carbondioxide. The ammonia generated is utilized by glutamate dehydrogenase (GLDH) in the presence of alpha Ketoglutarate (α-KG) to form glutamate. Simultaneously converting NADH to NAD resulting in a decrease in absorbance at 340nm.

Urea $\xrightarrow{\text{Urease}}$ Ammonia + CO_2

Ammonia + α-KG + NADH $\xrightarrow{\text{GLDH}}$ glutamate + NAD.

CLINICAL SIGNIFICANCE:

Increased urea level can occur in liver disease, congestive heart failure, diabetes, infections, in diseases which impair kidney function and with dietary changes. It is also increased in adrenocortial insufficiency, acute intestinal occlusion. Decreased levels are seen in malnutrition, hepatic failure and pregnancy.

SPECIMEN COLLECTION:

Ø Fresh fasting, clear serum with no hemolysis is the specimen of choice. Plasma collected using heparin, oxalate or citrate as an anticoagulant may also be used

PRECAUTION:

Ø ESTROM UREA/BUN is for IN VITRO diagnostic use only.

REAGENTS:

All reagents to be stored at 2- 8°C

	No. of Bottles	
	5x10 ml	5x20 ml
1 Urea (Enzyme)	4	4
2 Urea (Coenzyme)	1	2
Urea Standard (80mg/dl)	1	1

WORKING REAGENT PREPARATION FOR 5 X 10 ML & 5 X 20 ML

Mix in the proportion
1 Urea - 4 ml
2 Urea - 1 ml.
As per requirement.

Mix the contents.

REAGENT STORAGE AND STABILITY:

ESTROM Urea reagents are stable at 2- 8°C until the expiry date stated on the label. Working reagent is stable for two weeks at 2- 8°C.

GENERAL INSTRUMENT PARAMETER:

Reaction Type	: Two Point.
Slope of Reaction	: Decreasing.
Delay Time	: 30 seconds.
Wavelength	: 340 nm.
Flowcell Temperature	: 30°C.
Reagent Volume	: 1.0 ml
Sample Volume	: 10 µl (0.01 ml).
Interval	: 60 seconds.
No of readings	: 2
Standard	: 80 mg/dl.
Units	: mg/dl.
Zero setting	: Distilled Water.
Path Length	: 1.0cm.

PROCEDURE

For laboratories using instruments with 1.0 ml cuvette capacity.

Pipette into Test Tubes	Tests
Working Reagent (ml)	1.0
Sample (ml)	0.01

Mix immediately and read difference in absorbance between 30 seconds (AT1), and 60 seconds (AT2) for standard and test.

LINEARITY:

The method is linear up to 200 mg/dl. For Urea concentration higher than linearity limit, mix one volume of sample with one volume of 0.9% saline and multiply the results obtained by 2 (two).

TEST RESULTS

Urea (mg/dl) = Δ A/minute X factor

Where Δ A/minute = (AT1-AT2)

Factor = $\frac{\text{Concentration of Std.(mg/dl)}}{\Delta\text{A/min of standard.}}$

$= \frac{80}{\Delta\text{ A/min of standard.}}$

BUN Concentration (mg/dl) = 0.467 x urea conc. (mg/dl)

NORMAL VALUES:

Serum : 10 to 45 mg/dl
Serum BUN : 5 to 21 mg/dl

BIBLIOGRAPHY:

Ø Talke H., Schubert G.E., Klin. Wschr. 43, (1965) 174.

Angstrom Biotech Pvt.Ltd.
G1 - 1035, RIICO Industrial Area
Phase - III, Bhiwadi,
Alwar, Rajasthan.
Pin Code - 302019
Email: info@angstrombiotech.in
Website: www.angstrombiotech.in.
Customer Care Number - 9599194831

	Attention,see instructions for use		Consult Instructions For Use
IVD	For in vitro diagnostic use only	REF	Catalog #
2°C 8°C	Store between 2-8°C	LOT	Lot Number
	Do not use if package is damaged		Date of Manufacturing
	Manufacturer		Use by