

# UREA/BUN

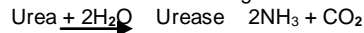
UV (Kinetic method)

**READ THIS PACK INSERT VERY CAREFULLY BEFORE PERFORMING THE TEST**

**Catalog no:** NRL-BUN

**Principle:**

Urea catalyses the hydrolysis of urea to form ammonia and carbon dioxide. The ammonia thus formed is acted upon by glutamate dehydrogenase (GLDH) in the presence of alpha ketoglutarate ( $\alpha$ KG) and NADH to form L-glutamate. The decrease in absorbance is directly proportional to the blood urea nitrogen concentration in the sample.



**Reagent composition:**

1. Reagent 1 (Buffer)
2. Reagent 2 (Enzyme)
3. Urea standard (40mg/dl)

**Reagent preparation:**

Mix 4 parts of R1 with 1 part of R2. The combined Reagent is stable for 4 weeks at 2-8°C.

**Storage & stability:**

Store at 2-8°C, and keep away from light. Unopened reagent is stable until expiry date stated on the label.

**Sample:**

Unhemolysed serum or heparinised plasma.

**Automated parameters:**

Parameter	Kinetic test
Reaction type	Kinetic
Wavelength	340 nm
Reaction temperature	37° C
Blank	Against distilled water
Reaction	Decreasing
Sample volume	100 $\mu$ l
Reagent Volume ( R1): (R2)	1000 $\mu$ l ( 800 $\mu$ l + 200 $\mu$ l)
Sample / Reagent ratio	1: 10
Delay/ Lag time	60 sec
Delta absorbance ( $\Delta$ A)	60 sec
Measurement/ test time	180 sec
Blank absorbance limit	> 1. 0 O.D
Factor	1746
Linearity	300 U/L

**Procedure:**

Let stand reagents and specimens at room temperature.

Sample	20 $\mu$ l
Reagent volume R1	800 $\mu$ l
Reagent volume R2	200 $\mu$ l

Mix 4 parts of R1 with 1 part of R2 ONLY NEEDED.

**Calculations:**

Calculate the result as follows:

$$\text{BUN (mg/dl)} = \frac{\Delta A_{\text{sample}}}{\Delta A_{\text{standard}}} \times 40 \text{ mg/dl}$$

$$\text{BUN} = \text{Urea con} \times 0.467$$

**Expected value:**

	Urea	BUN
Serum	: 10.3-50 mg/dl	4.8-23.3 mg/dl
Urine	: 20-36 g/24 h	333-600 mmol/24hr

**Each lab should optimize its own normal range.**