(FOR RESEARCH USE ONLY. DO NOT USE IT IN CLINICAL DIAGNOSIS!)

Urea (BUN) Assay Kit (Diacetyl Oxime Method)

Catalog No.: BC00055

Size: 100T

Please read the instructions carefully before use. If you have any questions or need further help during experiment, please don't hesitate to contact us through the following methods:

✉ Email (Sale) order@enkilife.com

✉ Email (Techsupport) techsupport@enkilife.com

☎Tel: 0086-27-87002838

Website: www.enkilife.com

Shelf life: Please refer to the label on the outer package.

Techsupport: In order to provide you with better service, please inform us the lot number on the label of the outer package.

Basic Information

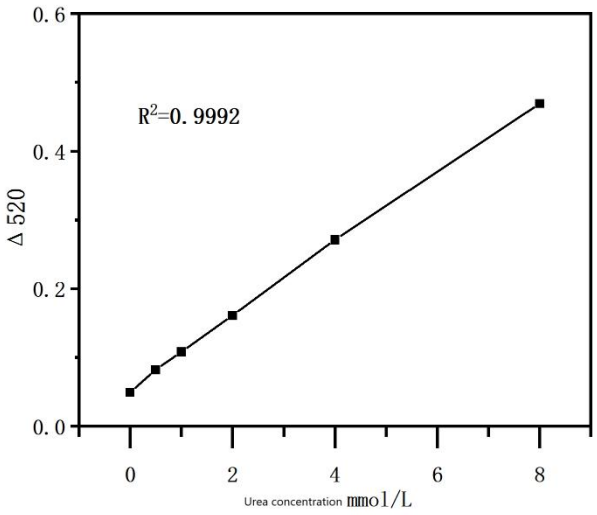
Product Name	Urea (BUN) Assay Kit (Diacetyl Oxime Method)
Detection Method	Colorimetric
Sample Type	Plasma, urine and other samples
Assay Type	Quantitative
Detection Instrument	Microplate reader (520 nm)
Range	0.5-8mM
Sensitivity	0.0364mM

Product Introduction

Urea nitrogen levels are monitored to assess kidney function, hypertension, dehydration, urinary tract obstruction, and other medical conditions for diagnosis and monitoring.

Principle

Urea and diacetyl are heated and condensed in an acidic reaction environment to form a chromogenic diazine compound, the depth of which is proportional to the urea content. Since diacetyl is unstable, diacetyl monoxime is usually reacted with a strong acid in the reaction system to produce diacetyl, which then reacts with urea to condense into a red diazine compound.



Components

No.	Components	Size (100T)	Storage
Reagent 1	Oxime Solution	100 mL	-20℃, store at 2-8°C after opening.
Reagent 2	Acid Solution	100 mL	-20℃, store at 2-8°C after opening.
Reagent 3	10 mmol/L Urea Nitrogen Standard	1 mL	-20℃, store at 2-8°C after opening.
Consumable 1	Microplate	1 plate	RT
Consumable 2	Plate Sealer	2 pieces	RT

Storage

The unopened kit can be stored at -20℃ for 12 months.

Preparation

- **Sample handling**

Plasma with oxalate, heparin, or EDTA as anticoagulants. Urea nitrogen in plasma can be stable at room temperature for 24 hours and at 4-6°C for at least 7 days. Urine should be diluted with physiological saline at a ratio of 1:10 to 1:50 and processed in the same manner as plasma. If outside the linear range, further dilution is required.

- **Preparation of the kit**

Dilution of different concentrations of standards: dilute reagent 3 with water to different concentrations such as 1.0, 5, 2.5, 1.25, 0.625, 0 (blank well) g/L.

Operation process

1. Standard wells: Take 200μL of different concentrations of standard solution and add to

the corresponding standard wells. Sample wells: Take 200μL of samples and add to the corresponding sample wells.

2. Add 1 mL of Reagent 1 and Reagent 2 to the standard and sample wells from step (1) respectively.
3. Mix well, place in boiling water for exactly 15 minutes, cool immediately with tap water, measure the absorbance A at 520 nm with a 1 cm path length, and zero with double-distilled water.

	Standard well	Measurement well
Different concentrations of standard solutions (μL)	200	--
Sample to be tested (μL)	--	200
Reagent 1 (mL)	1	1
Reagent 2 (mL)	1	1
Mix well, place in boiling water for exactly 15 minutes, cool immediately with tap water, measure the absorbance at 520 nm with a 1 cm path length, and zero with double-distilled water.		

Calculation

Standard Curve Method

Standard fitting curve: $y = ax + b$

The calculation formula for total urea nitrogen content in liquid samples is:

Urea nitrogen concentration = $(\Delta A520 - b) \div a \times f$ (mmol/L)

y: Standard OD value – Blank OD value (OD value when the standard concentration is 0)

x: Concentration corresponding to the absorbance

a: Slope of the standard curve

b: Intercept of the standard curve

ΔA520: Sample OD value - Blank OD value

f: Dilution factor of the sample before adding it to the detection system

Notes

1. The acid solution and oxime solution can be mixed in equal amounts, with the dosage being 2 mL, but this mixture can only be stored for about 7 days.
2. If precipitation is found before colorimetry, centrifuge at 3500 rpm for 10 minutes.
3. When the color is too dark, dilute the sample appropriately and multiply the result by the dilution factor.
4. Severe lipemia specimens should be measured using protein-free filtrate.
5. This method can be used to draw an appropriate amount (200-300 μL) from the reaction solution after the reaction is completed, add it to a 96-well plate (be careful not to introduce bubbles), read the value at 520 nm on an ELISA reader, and substitute the absorbance value into the formula for calculation
6. This product is intended for scientific research use only by professionals and must not be used for clinical diagnosis or treatment, in food or drugs, or stored in ordinary residences.