SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

Urea Nitrogen (BUN) Assay Kit

Note: Take two or three different samples for prediction before test.

Operation Equipment: Spectrophotometer

Catalog Number: AK0424

Size:50T/24S

Components:

Reagent I: Powder×2. Storage at 4℃ . Add 5 mL of distilled water to per bottle before use, fully dissolved. Prepared when the solution will be used.

Reagent Ⅱ: Solution 15 mL×1. Storage at 4℃ .

Reagent Ⅲ: Solution A, 3 mL×1. Solution B, 12 mL×1. Storage at 4℃ . Working solution: Mix Solution A with Solution B (1:4). Prepare when the solution will be used.

Reagent Ⅳ: Solution 15 mL×1. Storage at 4℃ .

Standard: Powder×1. Storage at 4℃ . 10 mg urea. Dissolve with 4.66 mL distilled water to form 1 mg/mL urea standard solution.

Product Description

Urea (BUN) is the main product of human protein metabolism. Urea constitutes the majority of non-protein nitrogen in blood. Blood urea nitrogen is one of the main indexes of renal function. This kit use indophenol blue colorimetric method to test NH_3-N product by urease hydrolysis. The concentration of indophenol is proportional to urea nitrogen concentration.

Reagents and Equipment Required but Not Provided:

Spectrophotometer, balance, cryogenic centrifuge, 1 mL glass cuvette, mortar/homogenizer, constant temperature water bath pot.

Procedure:

I. Sample preparation:

1. Tissue sample

Suggested 0.1 g tissue with 1 mL distilled water. Fully grind on ice, 12000 g 4℃ centrifuge for 15 min.

Take supernatant on ice for test.

2. Cells

Collect cells into centrifuge tube, suggested 5 million with 1 mL distilled water. Use ultrasonication to splitting cells (placed on ice, 300W, work time 3s, interval 7s, total 3 min). 12000 g 4℃ centrifuge for 15
min. Take supernatant on ice for test.

3. Serum (plasma) sample:

Detect sample directly.

II. Determination procedure:

1. Preheat the spectrophotometer 30 min, adjust the wavelength to 630 nm and set zero with distilled water.

2. Standard solution: dilute urea standard solution (1 mg/mL) with distilled water to 25 μg/mL.

3. Add reagents with the following list:

Reagent Name (μL)	Blank Tube (Ab)	Standard Tube (As)	Test Tube (At)	Control Tube (Ac)
Sample			60	60
Standard Solution		60		
Distilled water	60			120
Reagent I	120	120	120	
Reagent Ⅱ	220	220	220	220
Mix well, place at 37℃ for 10 min.				
Reagent Ⅲ	80	80	80	80
Reagent Ⅳ	60	60	60	60
Mix well, place at room temperature for 30 min.				
Distilled water	460	460	460	460
Mix well, detect absorbance at 630 nm. ΔAs=As-Ab, ΔAt=At-Ac.				

III. Calculation:

1. Calculated by sample weight

Urea Nitrogen content (μg/g)= ΔAt÷ΔAs×Cs×Ve÷W=25×ΔAt÷ΔAs÷W

2. Calculated by protein concentration

Urea Nitrogen content (μg/mg

prot)=ΔAt÷ΔAs×Cs×Ve÷(Cpr×Ve)=25×ΔAt÷ΔAs÷Cpr 3. Calculated by cell

amount

Urea Nitrogen content (μg/10^4 cell)= ΔAt÷ΔAs×Cs×Ve÷n=25×ΔAt÷ΔAs÷n

4. Calculated by liquid volume

Urea Nitrogen content (μg/mL)=ΔAt÷ΔAs×Cs=25×ΔAt÷ΔAs

Cs: concentration of standard working solution, 25 μg/mL;

Ve: extraction volume, 1 mL;

W: sample weight, g;

Cpr: sample protein concentration, mg/mL;

n: cell amount. 10^4.

Note:

1. Reagent I working solution can be stored at 2-8℃ for one week.

2. If measured value of ΔA or At exceed 1, it is suggested dilute sample with distilled water for determination.

Technical Specifications：

Minimum Detection Limit：0.000086 ug/mL

Linear Range ：0.390625-50 ug/mL

Recent Product citations：

[1] Xiaoguang Zhu,Jun Shi,Huicong li,et al. PVT1 knockdown alleviates vancomycin-induced acute kidney injury by targeting miR- 124 via inactivation of NF- κ B signaling. RSC advances. September 2018;(IF3.049)

SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

Related products：

AK0301/AK0300 Nitrate Reductase(NR) Activity Assay Kit
AK0436/AK0435 Glutaminase (GLS) Assay Kit