

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

Copper (Cu) Assay Kit

Catalog No.: BC00139

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	Copper (Cu) Assay Kit
Detection Method	Colorimetric
Sample Type	Serum, plasma
Assay Type	Quantitative
Detection Instrument	Microplate reader, spectrophotometer (600 nm)

Product Introduction

Under acidic conditions, Cu^{2+} dissociates from ceruloplasmin and albumin. Ascorbic acid reduces Cu^{2+} to Cu^{+} . Cu^{+} reacts with the complexing agent 3,5- dibromo -PAESA to produce a blue complex. The absorbance of the blue complex is measured at a wavelength of 600 nm to calculate the Cu^{2+} concentration.

Components

Components	Size	Name	Final concentration	Storage
Reagent 1	45 mL	Acetic acid buffer	0.2 mol/ L	2~8°C, away from light
		Ascorbic acid	5×10^{-2} mol/ L	
Reagent 2	15 mL	3,5-Dibromo-PAESA	2×10^{-5} mol/ L	2~8°C, away from light
Reagent 3	1 mL	Pure copper ions	28 umol/L	2~8°C, away from light
Consumables 1	1 plate	Microplate (96 wells)	-	RT
Consumables 2	2 pieces	Plate Sealer	-	RT

Storage

This kit should be stored at 2–8°C protected from light and has a shelf life of 12 months.

Reference range

Normal human serum and plasma: Male: 11–24 $\mu\text{mol/L}$; Female: 12.6–24.4 $\mu\text{mol/L}$.

These reference values are for reference only. It is recommended that each laboratory establish its own reference range.

Product Performance

Reagent blank absorbance: $A_{60\text{nm}}(1.0\text{cm}) \leq 0.5$;

Linear range: 5–79 $\mu\text{mol/L}$ (judgment criterion: $r^2 \geq 0.995$);

Accuracy: Relative deviation $\leq 15.0\%$;

Precision: Intra-batch CV $\leq 4.0\%$; Inter-batch relative range $\leq 6.0\%$.

Sensitivity: Actual detection limit $\leq 1.5 \mu\text{mol/L}$

Preparation before the experiment

Sample processing

Method 1: Liquid nitrogen grinding

1. This product is a liquid dosage form and can be used directly.
2. Before use, remove this product from the refrigerator and let it equilibrate to room temperature for about 20 minutes.
3. Gently rotate the bottle to mix thoroughly before use. Avoid vigorous shaking to prevent the formation of air bubbles.

Operation process

• Microplate reader, biochemical analyzer

Reagents	Blank tube	Standard tube	Test tube
Double-distilled water (μL)	10	--	--
Standard (μL)	--	10	--

Sample to be tested (μL)	--	--	10
Reagent 1 (μL)	150	150	150
Mix well, incubate at 37°C for 5 minutes, and read the absorbance value A1.			
Reagent 2 (μL)	50	50	50
Mix well, incubate at 37°C for 5 minutes, and read the absorbance value A2. $\Delta A = A2 - A1$			

• Spectrophotometer

Reagents	Blank tube	Standard tube	Test tube
Blank (μL)	50	--	--
Standard (μL)	--	50	--
Sample to be tested (μL)	--	--	50
Reagent 1 (μL)	750	750	750
Mix well, incubate at 37°C for 5 minutes, and read the absorbance value A1.			
Reagent 2 (μL)	250	250	250
Mix well, incubate at 37°C for 5 minutes, and read the absorbance value A2. $\Delta A = A2 - A1$			

Result calculation

$$\text{Copper ion concentration } (\mu\text{mol/L}) = \frac{\Delta A_{\text{sample}} - \Delta A_{\text{blank}}}{\Delta A_{\text{standard}} - \Delta A_{\text{blank}}} \times \text{standard concentration } (\mu\text{mol/L})$$

Precautions

1. Hemolyzed specimens can affect the results.
2. The ratio of reagents to samples can be adjusted proportionally according to the instrument usage.
3. If the result exceeds the linear range, dilute the sample with deionized water and multiply the result by the dilution factor.
4. If the instrument does not have the wavelength required by this kit, choose a similar

wavelength.

5. It is not recommended to mix reagents from different batches.
6. The serum copper content is extremely low, so all utensils and reagents used must be kept free from copper ion contamination, and all glassware must be thoroughly cleaned.
7. Pure copper ions are used only as a standard solution for the quantitative determination of copper ions (Cu) in serum and plasma in scientific research experiments.
8. This product is for research purposes only and must not be used for clinical diagnosis. Do not take it.