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CheKine™ Micro Albumin (Alb) Content Assay Kit

Cat #: KTB2221 Size: 48 T/48 S 96 T/96 S

	Micro Albumin (Alb) Content Assay Kit		
REF	**Cat #:** KTB2221	LOT	**Lot #:** Refer to product label
	Detection range: 2-56 mg/mL		**Sensitivity:** 2 mg/mL
	Applicable sample: Serum, Plasma, and Urine samples		
	Storage: Stored at 4℃ for 12 months, protected from light		

Assay Principle

Albumin is synthesized by hepatocytes and is the most abundant protein in plasma. It plays important physiological roles, including the maintenance of colloid osmotic pressure, and the binding of long-chain fatty acids, bile acids, bilirubin, heme, calcium, and magnesium ions. Albumin possesses antioxidant and anticoagulant properties, acts as a carrier for nutrients and drugs, and also functions as a buffer for plasma pH. The level of serum albumin is directly associated with the progression of liver diseases, kidney diseases, malnutrition, or protein-losing enteropathies, making it an important indicator in clinical diagnostics. CheKine™ Micro Albumin (Alb) Content Assay Kit provides a simple, convenient, and rapid method for determining albumin content, suitable for both serum and urine samples. The principle is based on the fact that albumin carries a positive charge in a buffer solution at pH 4.2, and can bind to the negatively charged dye bromocresol green to form a blue-green complex. This complex has an absorption peak at 630 nm, and within a certain range, the intensity of the color is directly proportional to the concentration of albumin.

Materials Supplied and Storage Conditions

Kit components	Size		Storage conditions
	48 T	96 T	
Reagent Ⅰ	12.5 mL	25 mL	4℃, protected from light
Standard	100 μL	100 μL	4℃, protected from light

Note: Before formal testing, it is recommended to select 2-3 samples with large expected differences for pre-experiment.

Materials Required but Not Supplied

- Microplate reader or visible spectrophotometer capable of measuring absorbance at 630 nm
- 96-well microplate or microglass cuvette, precision pipettes, disposable pipette tips
- Water bath
- Deionized water

Reagent Preparation

Reagent I: Ready to use as supplied. Equilibrate to room temperature before use. Store at 4℃, protected from light.

Standard: Ready to use as supplied. Equilibrate to room temperature before use. Store at 4℃, protected from light.

Note: Reagent I and the Standard both have certain toxicity. It is recommended to perform the experiment in a fume hood.

Sample Preparation

Note: Fresh samples are recommended. If not tested immediately, samples can be stored at -80℃ for up to one month. The thawing temperature and time should be controlled during sample preparation. For thawing at room temperature, the process should be completed within 4 h.

1. Serum, Plasma samples: Ready for direct measurement.
2. Urine samples: Ready for direct measurement.

Assay Procedure

1. Preheat the microplate reader or visible spectrophotometer for more than 30 min, and adjust the wavelength to 630 nm, visible spectrophotometer was returned to zero with deionized water.

2. Operation table (The following procedure is performed in a 96-well plate or a micro glass cuvette):

Reagent	Blank Well (μL)	Standard Well (μL)	Test Well (μL)
Deionized Water	2	0	0
Standard	0	2	0
Sample	0	0	2
Reagent I	200	200	200
Mix thoroughly, allow to stand at 25℃ for 1 min, and measure the absorbance at 630 nm. The readings are recorded as A_{Blank}, $A_{Standard}$, and A_{Test}, respectively, calculate $\Delta A_{Test}=A_{Test}-A_{Blank}$, $\Delta A_{Standard}=A_{Standard}-A_{Blank}$.			

Note: The Standard Well and Blank Well only need to be done once or twice. It is recommended to select 2-3 samples with expected significant differences for a preliminary test. If ΔA_{Test} is less than 0.02, the sample amount can be appropriately increased. If ΔA_{Test} exceeds 0.6, the supernatant can be further diluted with deionized water. Multiply the final result by the dilution factor, or reduce the amount of sample used for extraction.

Data Analysis

Note: We provide you with calculation formulae, including the derivation process and final formula. The two are exactly equal. It is suggested that the concise calculation formula in bold is final formula.

Calculation of Albumin Content:

Albumint (mg/mL)=$\Delta A_{Test} \div \Delta A_{Standard} \times C_{Standard}$**=$50 \times \Delta A_{Test} \div \Delta A_{Standard}$**

$C_{Standard}$: Albumin standard concentration, 50 mg/mL

Typical Data

The following data are for reference only. And the experimenters need to test the samples according to their own experiments.

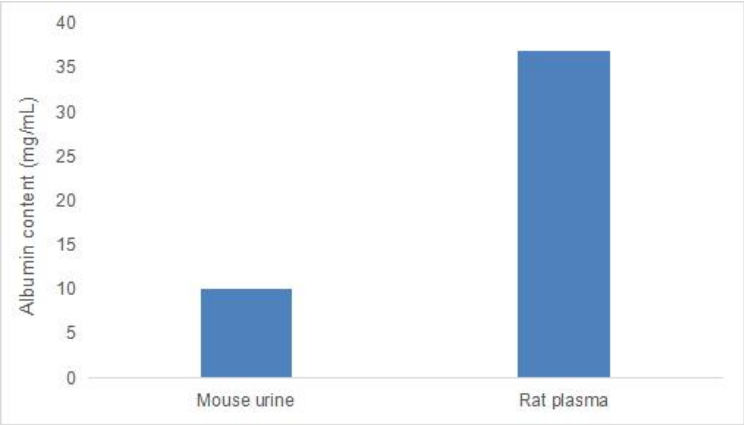

Figure 1. This kit is used to determine the albumin content in mouse urine and rat plasma

Recommended Products

Catalog No.	Product Name
KTB1200	CheKine™ Micro Non-protein Sulfhydryl Content Assay Kit
KTB1551	CheKine™ Micro Non-protein Sulfhydryl Content Assay Kit

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes. For your safety and health, please wear a lab coat and disposable gloves.