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CheKine™ Micro Serum Sodium Assay Kit

Cat #: KTB2130 Size: 96 T/96 S

	Micro Serum Sodium Assay Kit		
REF	**Cat #:** KTB2130	LOT	**Lot #:** Refer to product label
	Detection range: 0.0025-0.05 mol/L		**Sensitivity:** 0.0025 mol/L
	Applicable samples: Serum		
	Storage: Stored at 4℃ for 6 months		

Assay Principle

Serum sodium plays an important role in maintaining normal extracellular fluid volume and osmotic pressure, as well as the acid-base balance of body fluids. CheKine™ Micro Serum Sodium Assay Kit provides a simple method for detecting serum sodium concentration in serum sample. The sodium and potassium pyroantimonate reagent in the serum form a precipitate in the weakly alkaline solution, and the amount of the precipitate is proportional to the sodium concentration. The sodium content in the serum can be determined according to its turbidity.

Materials Supplied and Storage Conditions

Kit components	Size（96 T）	Storage conditions
Reagent A	20 mL	4℃
Standard	1 mL	4℃

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 520 nm
- 96-well plate or microglass cuvette, precision pipettes, disposable pipette tips, multichannel pipette
- Freezing centrifuge
- Deionized water, Anhydrous ethanol, 90% ethanol

Reagent Preparation

Reagent A: Ready to use as supplied. Equilibrate to room temperature before use. Store at 4℃.

Note: Reagent A is somewhat toxic, so personal protection is recommended during use.

Standard: Ready to use as supplied. 1 mol/L Sodium Standard. Equilibrate to room temperature before use. Store at 4℃.

0.1 mol/L Standard: Prepared before use. Prepare 0.1 mol/L Sodium Standard by diluting100 μL 1 mol/L Sodium Standard into 900 μL 90% ethanol. Using 0.1 mol/L Sodium Standard, prepare standard curve dilution as described in the table:

Num.	Volume of 0.1 mol/L Standard (μL)	Volume of 90% Ethanol (μL)	Standard Concentration (mol/L)
Std.1	100	100	0.05
Std.2	80	120	0.04
Std.3	60	140	0.03
Std.4	40	160	0.02
Std.5	20	180	0.01
Std.6	10	190	0.005
Std.7	5	195	0.0025
Blank	0	0	0

Sample Preparation

Serum: Add 100 μL of serum and 900 μL of anhydrous ethanol, mix well. Centrifuge at 10,000 rpm for 10 min at 4℃. Use supernatant for assay, and place it on ice to be tested.

Note: Blood should be collected on an empty stomach during blood collection, and sodium citrate anticoagulant should be avoided.

Assay Procedure

1. Preheat the microplate reader or visible spectrophotometer for more than 30 min, and adjust the wavelength to 520 nm, visible spectrophotometer was returned to zero with deionized water.
2. Sample measurement (The following operations are operated in the 96-well plate or microglass cuvette).

Reagent	Blank Well (μL)	Standard Well (μL)	Test Well (μL)
Supernatant	0	0	20
Different Concentration Std.	0	20	0
90% Ethanol	20	0	0
Anhydrous Ethanol	60	60	60
Reagent A	140	140	140

3. Mix well and kept at room temperature for 5 min. **After mixing and homogenizing** (it is recommended to use a multichannel pipette), the absorbance value is measured at 520 nm. The blank well is marked as A_{Blank}, the standard well is marked as $A_{Standard}$, and the test well is marked as A_{Test}. Finally calculate $\Delta A_{Test}=A_{Test}-A_{Blank}$, $\Delta A_{Standard}=A_{Standard}-A_{Blank}$.

Note: Blank well and Standard curve only needs to measure 1 time. In order to guarantee the accuracy of experimental results, need to do a pre-experiment with 2-3 samples. If ΔA_{Test} is less than 0.05, increase the sample quantity appropriately. If ΔA_{Test} is larger than 0.05 mol/L of $\Delta A_{Standard}$, the sample can be appropriately diluted with anhydrous ethanol, the calculated result multiplied by the dilution factor, or decrease the sample quantity appropriately. For instance, 200 μL of serum is added to 800 μL of anhydrous ethanol (dilution factor of 5) or 50 μL of serum is mixed with 950 μL of anhydrous ethanol (dilution factor of 20).

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.

1. Drawing of standard curve

With the concentration of the standard solution as the y-axis and the $\Delta A_{Standard}$ as the x-axis, draw the standard curve.

2. Calculation of the concentration of serum sodium

Bring the ΔA_{Test} of the sample into the equation to get the y value (mol/L).

Serum Sodium (mol/L)=n×y**=10×y**

Where: n: Dilution factor of sample, 10.

Precautions

1. Different Concentration Std. and reaction system contain a high concentration of ethanol, which is prone to leakage upon ethanol absorption. Caution is required during operation.
2. The reaction is conducted using the nephelometric method. Prolonged standing may lead to aggregation and precipitation. Please perform the detection as soon as possible after mixing the reaction mixture upon completion.
3. The foam generated by the aspiration and dispensing of a multichannel pipette will dissipate within 1 minute, without affecting the detection.

Typical Data

Typical standard curve:

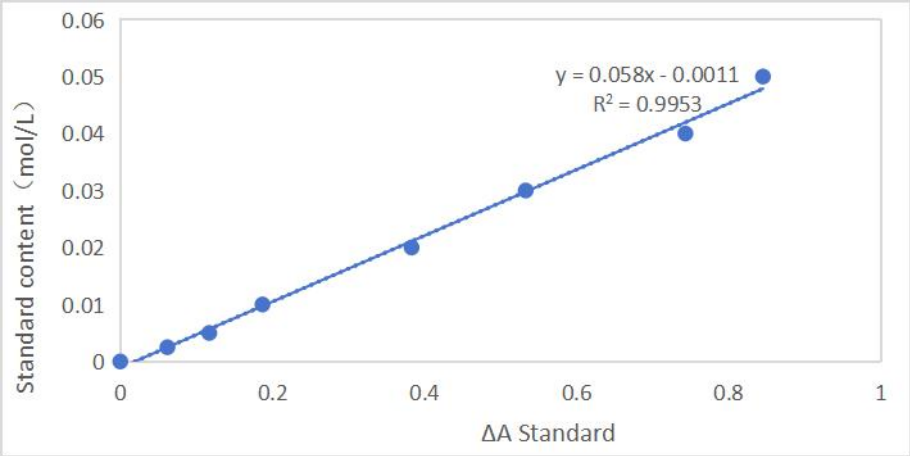

Figure 1. Standard curve for Serum Sodium.

Recommended Products

Catalog No.	Product Name
KTB2140	CheKine™ Micro Serum Zinc 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.