Blood Sodium Content Assay Kit

Note: It is necessary to predict 2-3 large difference samples before the formal determination.

Operation Equipment: Spectrophotometer

Cat No: BC2800

Size: 50T/48S

Components:

Reagent I: Liquid 70 mL×1, store at 2-8℃.

Powder I: Powder×1, store at 2-8℃. Add powder I into reagent I, heat and dissolve in boiling water bath before use. It could be stored at 2-8℃ for three months.

Standard: Liquid 1 mL×1, 1 mol/L sodium standard solution, store at 2-8℃.

Description:

Blood sodium plays an important role in maintaining normal extracellular fluid volume, osmotic pressure and acid-base balance of body fluids.

Sodium and potassium pyroantimonate in serum could precipitate in weak alkaline solution. The amount of precipitate is directly proportional to the concentration of sodium. According to its turbidity, the content of sodium in serum can be determined.

Required but not provided:

Spectrophotometer, centrifuge, adjustable pipette, 1mL glass cuvette, deionized water and absolute ethanol, 90% ethanol (mix 90mL absolute ethanol and 10mL distilled water).

Procedure:

I. Sample processing

Serum pretreatment: Take an EP tube, add 100 μL of serum, 900 μL of absolute ethanol, mix well, centrifuge at 10,000 rpm, 4°C for 10 min, and take the supernatant for testing.

II. Measurement steps

1. Preheat the spectrophotometer for more than 30min, adjust the wavelength to 520nm, and adjust the distilled water to zero.
2. Preparation of standard solution: Dilute the standard solution with 90% ethanol to the standard solution of 0.05, 0.04, 0.03, 0.02, 0.01mol/L.
3. Add reagents according to the following table.

Reagent (μL)	Blank tube (B)	Standard tube (S)	Test tube (T)
90% ethanol	100	-	-
Standard solution	-	100	-
Supernatant	-	-	100
Anhydrous ethanol	100	100	100
Reagent I	1000	1000	1000

React for 5 minutes at room temperature, blow and mix well, measure the absorbance at 520 nm, record as A_B, A_S, A_T respectively. Calculate $\Delta A_T=A_T-A_B$, $\Delta A_S=A_S-A_B$, the blank tube and

standard curve only need to be measured once or twice.

III. Calculation of Blood Sodium Concentration

1. Drawing of standard curve:

According to the concentration of the standard tube (x, mol/L) and the absorbance ΔA_S (y, ΔAs), establish a standard curve. According to the standard curve, the ΔA_T (y, ΔA_T) is brought into the formula to calculate the sample concentration (x, mol/L).

2. Blood sodium content calculation

Blood Sodium Concentration(mol/L) = x×D=10×x

D: Sample dilution factor, (100μL of serum + 900μL of anhydrous ethanol) ÷ 100μL of serum = 10.

Note:

1. In the process of blood collection, it is advisable to take blood on an empty stomach and avoid using sodium citrate anticoagulant.
2. The sample shall be measured as soon as possible after the reaction.
3. If the absorbance value exceeds the linear range, the sample size can be increased or diluted before the determination. For example: take 200 μL of serum and add 800 μL of absolute ethanol (dilution ratio is 5), or take 50 μL of serum and add 950 μL of absolute ethanol (dilution ratio is 20).

Related Products:

BC0720/BC0725	Blood Calcium Content Assay Kit
BC2770/BC2775	Blood Potassium Content Assay Kit
BC2860/BC2865	Serum Total Iron Binding Capacity (TIBC) Assay Kit
BC2810/BC2815	Blood Zinc Content Assay Kit

Technical Specifications:

The detection limit: 0.00013 mol/L

The linear range: 0.005-0.04 mol/L

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