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

Blood Sodium Content Assay Kit

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

Operation Equipment: Spectrophotometer

Cat No: AK0181

Size: 50T/48S

Components:

Reagent I: 70 mL×1, store at 4℃. If there is gelatinous substance, it shall be heated and dissolved in boiling water bath before use.

Standard: 1 mL×1, 1 mmol/L sodium standard solution, store at 4℃.

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, water bath, transferpettor, 1 mL glass cuvette, distilled water, anhydrous ethanol and 90% ethanol (mix 90 mL of anhydrous ethanol and 10 mL of distilled water).

Procedure:

1. Preheat spectrophotometer for 30 minutes, adjust wavelength to 520 nm, set zero with distilled water.
2. Serum pretreatment: take EP tube, add 100μL of serum, 900μL of anhydrous ethanol, mix well, centrifugate at 10000 rpm for 10 minutes at 4℃, take the supernatant and place it on ice for testing.
3. Preparation of standard solution: dilute the standard solution with 90% ethanol to 0.05, 0.04, 0.03, 0.02 and 0.01 mol/L standard solution.
4. Add reagents according to the following table.

Reagent name (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 only needs to be measured once or twice.

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Calculation of Blood Sodium Concentration

1. Drawing of standard curve:

The standard curve is drawn with the concentration of standard solution as the abscissa and the ΔA_S as the ordinate. The standard equation y=kx+b is obtained. The determination of ΔA is brought into the standard equation to obtain x(mol/L).

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

D: Sample dilution factor, (100μL of serum + 100μL 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：

AK0518/AK0517	Blood Calcium Content Assay Kit
AK0382/AK0381	Blood Potassium Content Assay Kit
AK0374/AK0373	Serum Total Iron Binding Capacity(TIBC) Assay Kit
AK0179/AK0178	Blood Zinc Content Assay Kit

Technical Specifications:

The detection limit: 0.00013 mol/L

The linear range: 0.005-0.04 mol/L