Sodium

(Colorimetric Method)

Intended Use

Sodium is a reagent kit used for the determination of Sodium in serum or plasma, usingSodium Chromogen.

Method Principle

The Method is based on reaction of sodium with a selective Chromogen Producing a Chromophore whose absorbance varies directly as the concentration of sodium in the test specimen.

Reagents provided

1. Sodium Reagent - Ready to use.
2. Standard - Sodium (150 mmol/L).

Reagent storage and stability

The kit should be stored atRoom Tempratureand is stable till the expiry date indicated on the label.
The reagent and standard are ready-to-use and are stable till expiry, when stored at Room Temprature. DO NOT FREEZE THE REAGENT.Before use swirl the reagents gently. DO NOT SHAKE VIGOROUSLY.Contamination of the reagent should be strictly avoided. Protect the reagent from direct light.

Specimen collection and preservation

Unhaemolysed serum or heparinised plasma or urine can be used for the testing, Fluoride is not recommended to be used as anti- coagulant as it may result in low results. It is recommended to use freshly collected samples for assay, Separated plasma samples can be stored for 15 days at 2-8°C.

Assay guidelines for Analyzers

Reaction Type	End Point with Standard
Reaction slope	Increasing
Incubation time	5 min. atRT
Wave length	630 nm
Blank	Reagent Blank
Blank absorbance limit	<1.2 Abs. against distilled water blank.
Sample Volume	10 µl (0.01 ml)
Reagent Volume	1000 µl (1.0 ml)
Sodium Standard Concentration	150 mmol /L
Factor Calculation	150 mmol/L÷ Absorbance of Standard.
Low normal	135 mmol/L
High normal	155 mmol/L
Linearity	Up to 180 mmol/L

Assay guidelines for Manual Procedure

Bring the Reagent and Standard to Room Temperature before performing the assay.

Reagents	Blank	Standard	Sample
Reagent	1000 µl (1.0 ml)	1000 µl (1.0 ml)	1000 µl (1.0 ml)
Bring upto the Temperature of Determination . Than add			
Standard	-	10 µl (0.01 ml)	-
Sample	-	-	10 µl (0.01 ml)
Distilled water	Distilled water		

1. Mix thoroughly and incubate at RT5 minutes.
2. Read the absorbance against reagent blank at 630 nm.

Calculation

Sodium Conc. in sample (mmol/L = $\frac{\text{Sample OD}}{\text{Standard OD}}$ x Conc. of Std.

Normal Range

Guidance Value - 135 – 155 mmol/L

Note: Expected range varies from population to population and each laboratory should establish its own normal range.

Limitation

1. If the Sodium concentration exceeds 180mmol/L, dilute the sample with normal saline and repeat the assay. The reportable results in this case shall be calculated by multiplying the results obtained with dilution factor.
2. Hemolytic and lipaemic samples may result in falsely elevated results.
3. Bilirubin above 40 mg/dl and Urea nitrogen above 80 mg/dl willproduce elevated results.

Quality Control

To ensure adequate quality control measures, it is recommended that each batch should include a normal and an abnormal commercial reference control serum. It should be realized that the use of quality control material checks both instrument and reagent functions together. Factors which might affect the performance of this test include proper instrument function, temperature control, cleanliness of glassware and accuracy of pipetting.

References

1. Tietz ,N.W. Fundamental s of Clinical Chemistry,W.b. saunders Co.phila , P.A.p. 874
2. Henry R.F. etal ,Clinical Chemistry Principles and Technics .2nd Edition Ed.Harper and Row , Hargersein M.D (1974)
3. Maruna R.F.L , ClinChem,Acta.2:581,(1958).
4. Young D. S., Effects of disease on Clinical Lab. Tests, 4th Ed. AACC (2001).
5. Trinder,P:Analyst ,76:596 (1951).

Symbols

IVD	In Vitro Diagnostics		Caution.		Keep away from sun light.		Date of Manufacture
LOT	Batch No.		Read Instructions.		Fragile		Product Expiry Date.
CONT	Content		Storage Temperature.		Keep Dry.		Manufactured By
REF	Catalogue No.						

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