SODIUM KIT

PRINCIPLE:
Sodium is precipitated by magnesium-uranylacetate; thesupernatant of remaining uranyl ions in solution combine with thioglycollate to form a yellow-brown colour complex. The difference between reagent blank and analysis result is proportional to the Sodium concentration.

REAGENTS & STABILITY:
1. Reagent R1 : Ready - To - Use
2. Reagent R2 : Ready - To – Use
3. Reagent R3–125 ml : Ready – To - Use
4. Sodium Standard : Ready - To - Use

Storage: The kit should be stored at 2-8^0 C.

REMARKS:
1. Reagent R1 change its colour when exposed to light. Protect from direct sunlight.
2. Detergents contain high concentrations of Sodium. Therefore rinse glasses, cuvettes, stoppers, pipettes with dil. HCL and rinse several times with distilled water. Avoid contamination with sweat.
3. Use disposable plastic articles. To close reagent bottles use parafilm or plastic stoppers. In the presence of Sodium concentration higher than 200 mmol/l, dilute serum 1:1 with distilled water and perform the test. Multiply final result by 2.

SPECIMEN COLLECTION :
Freshly drawn seurm is the specimen of choice. Plasma from Non-Sodium containing anticoagulants (e.g., lithium, calcium, magnesium or heparin) is an acceptable alternative. Sodium in serum is stable for at least 24 hours at room temperature and 2 weeks when refrigerated.
Note: Reagent will have higher absorbance than sample/std.

PROCEDURAL LIMITATIONS:
1. When preparing filtrates, inadequate shaking or centrifugation will cause falsely lowered test results.
2. Blood calcium, chloride and potassium levels of up to 3 times normal reportedly exert no adverse influence on the procedure; phosphorous levels exceeding 5 times normal likewise present no problems.

PROCEDURE:

WAVE LENGTH	: 505 nm
TEMPERATURE	: Room Temperature (25^0 - 37^0C)
CUVETTE	: 10 mm path length
INCUBATION	: 5 mins.
STANDARD	: 150 mmol/L (refer the vial label)

Step 1

Pipette into cuvettes	Macro	Semi - Micro
Reagent 1	1000 ul	500 ul
Standard / Sample	20 ul	10ul

Mix well and let stand for 5 mins. Shake well for approx. 30 secs. Centrifuge at 4000 rpm for 15 mins. to obtain clear supernatant.

Step 2 : Color Development

	Blank	Standard	Test
Supernatant from step 1	-	0.05 ml	0.05 ml
Recipitating Reagent (1)	0.05 ml	-	-
Color Reagent (R2)	0.2 ml	0.2 ml	0.2 ml
Acid Reagent (R3)	2.5 ml	2.5 ml	2.5 ml

Mix well and allow it to stand at room temperature for 5 mins., then measure the absorbance of Blank (B), Standard (S) and Test (T) against distilled water at 505 nm.

CALCULATIONS:

$$\frac{\text{Abs. of Blank} - \text{Abs of Sample}}{\text{Abs. of Blank} - \text{Abs. of Standard}} \times \text{Conc. of Std. (mmol/L)} = \text{Conc. of Sample (mmol/L)}$$

Note: mmol/l = mEq/l

EXPECTED VALUES **:** 135 – 155 mmol/L (130 – 150 mEq/L)

LINEARITY **:** Upto 200 mmol/l