

LIQUIZYME

## SODIUM

(Colorimetric Method )

Code	Product Name	Pack Size
LS032A	Liquizyme Sodium	25 T
LS032B	Liquizyme Sodium	50 T
LS032D	Liquizyme Sodium	1 X 120 ml

### Intended Use

Diagnostic reagent for quantitative *in vitro* determination of Sodium in human serum.

### Clinical Significance

Sodium is the major cation of extra-cellular fluid. It plays a central role in the maintenance of the normal distribution of water and the osmotic pressure in the various fluid compartments. The main source of body sodium is sodium chloride contained in ingested foods. Only about one third of the total body's sodium is contained in the skeleton since most of it is present in the extra-cellular body fluids.

### Principle

The Method is based on reaction of Sodium with a selective chromogen producing a chromophore whose absorbance is directly proportional to Sodium concentration in the test specimens which can be photometrically measured.

### Reagent Composition

#### Reagent 1 : Sodium Reagent

Buffer : <100 mmol/L  
Phosphanazo : QS

Reagent 2 : Sodium Standard : 150 mEq/L

Ready to use

### Materials Required But Not Provided

- Clean & Dry container.
- Laboratory Glass Pipettes or Micropipettes & Tips
- Colorimeter or Bio-Chemistry Analyzer.

### Reagent Preparation

Reagent is liquid, ready to use.

### Stability And Storage

The unopened reagents are stable till the expiry date stated on the bottle and kit label when stored at 25–30°C.

### Specimen Collection And Handling

Use unheamolytic serum.

It is recommended to follow NCCLS procedures (or similar standardized conditions).

### Stability :

2 weeks : at 2 – 8°C  
Discard contaminated specimens.



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### Calibration

Calibration with the Sodium standard provided in the kit is recommended.

### Quality Control

It's recommended to run normal and abnormal control sera to validate reagent performance.

### Expected Values

Serum : 135-155 mEq/L

**It is recommended that each laboratory verify this range or derives reference interval for the population it serves.**

### Performance Data

Data contained within this section is representative of performance on Beacon system. Data obtained in your laboratory may differ from these values.

Limit of quantification : 2.30 mEq/L

Linearity : 180 mEq/L

Measuring range : 2.30 – 180 mEq/L

### Precision

Intra-assay precision Within run (n=20)	Mean (mEq/L)	SD (mEq/L)	CV (%)
Sample 1	142	0.96	0.68
Sample 2	153	1.12	0.73

Inter-assay precision Run to run (n=20)	Mean (mEq/L)	SD (mEq/L)	CV (%)
Sample 1	125	1.12	0.90

### Comparison

A comparison between Beacon Sodium (y) and a commercially available test (x) using 20 samples gave following results:

$$y = 0.993x + 0.537$$

$$r = 0.998$$

### Warning And Precautions

1. For *in vitro* diagnostic use.
2. Specimens should be considered infectious and handled appropriately.
3. Avoid ingestion. Do not pipette by mouth.
4. The reagent contains sodium hydroxide that is corrosive. In case of contact skin, flush with water. For eyes, seek medical attention.

### Waste Management

Please refer to local legal requirements.

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#### Assay Procedure

Wavelength : 630 nm

Cuvette : 1 cm

Pipette into clean dry test tubes labeled as Blank (B), Standard (S) and Test (T):

Addition Sequence	Reagent Blank	Standard	Sample
Reagent 1	1000 µl	1000 µl	1000 µl
Standard	-	10 µl	-
Sample	-	-	10 µl
Distilled Water	10 µl	-	-

Mix and incubate for 5 minutes at room temperature. Measure the absorbance of the standard and sample against the reagent blank, at 630 nm.

#### Calculation

$$\text{Sodium (mEq/L)} = \frac{\text{Abs. T}}{\text{Abs. S}} \times 150$$

#### Assay Parameters For Photometers

Mode	End point
Wavelength 1 (nm)	630
Sample Volume (µl)	10
Reagent Volume (µl)	1000
Incubation time (min.)	5
Incubation temp. (°C)	Room Temperature
Normal Low (mEq/L)	135
Normal High (mEq/L)	155
Linearity Low (mEq/L)	2.30
Linearity High (mEq/L)	180
Standard Concentration	150 mEq/L
Blank with	Reagent
Unit	mEq/L
Aspiration Volume	Not < 900 µl

#### References

1. Comall, A. G., Bardawill, C. J., David, M. M.: J. Biol. Chem. 177, 751, 1949.
2. Doumas, B. T., Bayse, D. D. a kol.: Clin. Chem. 27, 1642, 1981.
3. Chromý, V., Fischer, J.: Clin. Chem. 23, 754, 1977.
4. Chromý, V., Fischer, J., Vozníček, J.: Z. Med. Labor. - Diagn. 21, 333, 1980.
5. Tietz Textbook of Clinical Chemistry and Molecular diagnostics. Burtis, C. A.
6. Ashwood, E.R., Brus, D. E.; 5th edition, WB Saunders.

#### Symbols Used On Labels



Catalogue  
Number



Manufacturer



See Instruction  
for Use



Lot Number



Content



Storage Temperature



Expiry Date



In Vitro Diagnostics

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