

LIQUIZYME
POTASSIUM
 (Colorimetric Method)



Code	Product Name	Pack Size
LS033A	Liquizyme Potassium	25 T
LS033B	Liquizyme Potassium	50 T
LS033D	Liquizyme Potassium	1 X 120 ml

Intended Use

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

Clinical Significance

Potassium is estimated by Turbidimetric Method Potassium ions in the specimen react with sodium tetra phenyl boron to produce an insoluble potassium tetra phenyl boron resulting in a turbid suspension. The extent of turbidity is proportional to the potassium concentration and is measured photometrically at 620 nm (610-620).

Principle

The amount of Potassium is determined by using sodium tetra phenyl boron in a specifically prepared mixture to produce a colloidal suspension. The turbidity of which is proportional to potassium concentration in the range of 2 - 7 mEq/L. Tetra phenyl Boron + K⁺ White Turbidity

Reagent Composition

Reagent 1 : Potassium Reagent

Sodium tetra phenyl borate : >60 mmol/L

Reagent 2 : Potassium Standard : 5 mEq/L

Ready to use

Materials Required But Not Provided

- Clean & Dry container.
- Laboratory Glass Pippetes 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:

Do not use lipaemic / turbid / icteric samples.
 Discard contaminated specimens.

Calibration

Calibration with the Potassium 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 : 3.5-5.5 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 : 0.3 mEq/L

Linearity : 8.5 mEq/L

Measuring range : 0.3 – 8.5mEq/L

Precision

Intra-assay precision Within run (n=20)	Mean (mEq/L)	SD (mEq/L)	CV (%)
Sample 1	4.48	0.03	0.69
Sample 2	6.25	0.01	0.20

Inter-assay precision Run to run (n=20)	Mean (mEq/L)	SD (mEq/L)	CV (%)
Sample 1	6.23	0.016	0.25

Comparison

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

$$y = 1.008x - 0.103$$

$$r = 0.999$$

Warning And Precautions

1. For *in vitro* diagnostic use.
2. Specimens should be considered infections 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.

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	-	20 µl	-
Sample	-	-	20 µl
Distilled Water	20 µl	-	-

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

Calculation

$$\text{Potassium (mEq/L)} = \frac{\text{Abs. T}}{\text{Abs. S}} \times 5$$

Assay Parameters For Photometers

Mode	End point
Wavelength 1 (nm)	630
Sample Volume (µl)	20
Reagent Volume (µl)	1000
Incubation time (min.)	5
Incubation temp. (°C)	Room Temperature
Normal Low (mEq/L)	3.5
Normal High (mEq/L)	5.5
Linearity Low (mEq/L)	0.3
Linearity High (mEq/L)	8.5
Standard Concentration	5 mEq/L
Blank with	Reagent
Unit	mEq/L

References

- Cornall, A. G., Bardawill, C. J., David, M. M.: J. Biol. Chem. 177, 751, 1949.
- Doumas, B.T., Bayse, D.D. et al.: Clin. Chem. 27, 1642, 1981.
- Chromy, V., Fischer, J.: Clin. Chem. 23, 754, 1977.
- Chromy, V., Fischer, J., Voznieek, J.: Z. Med. Labor.-Diagn. 21, 333, 1980.
- Tietz Textbook of Clinical Chemistry and Molecular diagnostics. Burtis, C.A.,
- Ashwood, E.R., Bruns, 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

BEA/24/POT/LS/IFU-03 02/05/2023

