Potassium

(Turbidimetric Method)

Intended Use

Potassium is a reagent kit used for the determination of Potassium in serum or plasma, usingSodium Tetra phenylborate.

Principle

Potassium ions present in the patient serum react with Sodium Tetra phenyl Boron to produce 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 630 nm.

Reagents provided

1. Potassium Reagent - Ready to use.
2. Standard - Potassium (5 mEq/l).

Reagent storage and stability

The kit should be stored atR.T (≤30°C)and 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 R.T (≤30°C). 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. at RT (15°-25°C).
Wave length	630 nm
Blank	Reagent Blank
Blank absorbance limit	< 0. 300 Abs. against distilled water blank.
Sample Volume	50 µl (0.05 ml)
Reagent Volume	1000 µl (1.0 ml)
Potassium Standard Concentration	5 mEq/l
Factor Calculation	5 mEq/L÷ Absorbance of Standard.
Low normal	3.4 mEq/L
High normal	5.5 mEq/L
Linearity	Up to 8mEq/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)
Standard	-	50 µl (0.05 ml)	-
Sample	-	-	50 µl (0.05 ml)

1. Mix thoroughly and incubate at Room Temperature(15° - 25°C) for 5 minutes.
2. Read the absorbance against reagent blank at 630 nm.
3. The final colour is stable for 15 minutes if not exposed to direct light.

Calculation

Potassium Conc. in sample (mEq/l) = $\frac{\text{Sample OD}}{\text{Standard OD}}$ x Conc. of Std.

Normal Range

Guidance Value - 3.4 – 5.5 mEq /L

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

Limitation

1. If the Potassium concentration exceeds 8 mEq/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.

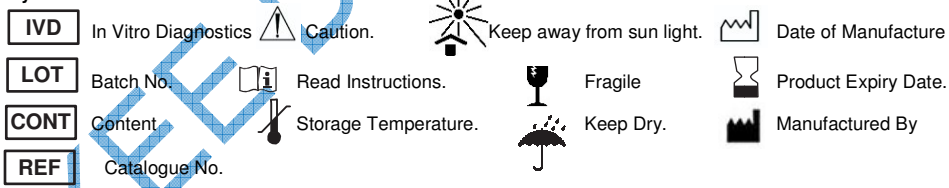
Quality Control

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. Henry R. F., ET. al., Clinical Chemistry Principles and Techniques, 2nd Ed., Harper and Row, Hager stein, M. D., (1974)
2. Hillman, G., Beyer, G., Z. Klin. Chem. Klin. Biochem. 9th Ed., 93 (1967)
3. Terri, A.E. and Sesin, P. G., Am. J. Clin. Path., 29th Ed., 86 (1958).
4. Young D. S., Effects of disease on Clinical Lab. Tests, 4th Ed. AACC (2001).
5. Fouweather F. S., and Anderson W. N., Clin. Path. 1st Ed., 177 (1948).
6. Teitz, N. W., Fundamentals of Clinical Chemistry, Saunders, Philadelphia, 2nd Ed., 876 (1976).

Symbols



KEE DIAGNOSTICS PVT LTD
CIN: U24231DL2004PTC128343
A subsidiary of KEE PHARMA LTD
A-8, 3RD FLOOR, NARAINA INDUSTRIAL AREA, PHASE 2
NEW DELHI-110028
W. www.keediagnostics.com
E. info@keediagnostics.com.T. 011 43136000

Kee Diagnostics
because life matters

CE ISO 9001: 2015 & ISO13485: 2016 Certified Company