



CALCIUM KIT

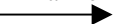
Method: O-CPC.

INTRODUCTION AND PRINCIPLE:

More than 90% of body Calcium exists in bones and teeth. The remaining 10% is present in blood and soft tissues and serves as a cofactor in blood coagulation, metabolism and neuromuscular physiology. Serum Calcium is present in three different forms:

1. nearly 45% is bound by serum proteins
2. about 5% is complexed in a nonionised form and
3. the remaining 50% Serum Calcium is in an ionic (free) form. It is the physiologically active ionic fraction that is important in terms of biological function.

Calcium + O - Cresolphthalein Complexone
Alkaline



Medium

Calcium - Cresolphthalein Complexone Complex
(purple color)

REAGENT CONTENTS:

1. Calcium Color Reagent R1 : Ready - To - Use
2. Calcium Buffer R2 : Ready - To - Use
3. Calcium Standard : Ready - To - Use

STORAGE & STABILITY:

Avoid Contamination of Ready-To-Use Reagents. Always use fresh pipette tips. Keep always the caps Tightly closed.

REAGENT PREPARATION:

The kit is stable at 15°-25°C until the expiry date mentioned on the label. Combine equal volumes of Calcium Color Reagent R1 and Calcium Buffer R2, mix and let stand for 10 minutes at Room Temperature before use.

PREPARATION:

Reagents should be combined in clean plastic vessels. Water and Glassware containing Calcium will react with the reagent. **All glasswares should be rinsed in diluted hydrochloric acid before use.**

SPECIMEN COLLECTION:

1. Fasting non-hemolyzed serum is specimen of choice.
2. Anticoagulants other than Hepairn should not be used.
3. Remove serum from clot as soon as possible, since red cells can absorb Calcium.
4. Older serum specimens containing visible precipitate should not be used.
5. Tubes with cork stoppers should not be used.
6. Serum Calcium is stable for twenty-four hours at room temperature, one week at 2° - 8° C and up to five months frozen and protected from evaporation.

PROCEDURE:

ASSAY PARAMETER:

Mode : End Point.
 Wave Length : 578 nm.
 Reaction Slope : Increasing.
 Cuvette : 1 cm path length.
 Temperature : 37° C.
 Incubation Time : 5 min.
 Blank : Reagent Blank.
 Working Reagents Volume: 1000ul.
 Sample Reagents Volume : 20 ul.
 Standard concentration : 10 mg/dl.
 Linearity : 20 mg.
 Units : mg/dl.

MANUAL ASSAY:

Addition Sequence	B (ml)	S (ml)	T (ml)
Colour Reagent (R1)	0.5	0.5	0.5
Buffer Reagent (R2)	0.5	0.5	0.5
Distilled water	0.02	-	-
Calcium Standard (S)	-	0.02	-
Sample	-	-	0.02

Mix & incubate for 5 minutes and read the absorbance of all the cuvettes at 570 - 600 nm, within 20 mins.

CALCULATIONS:

Abs. Of Sample
 _____ X Conc. of Std. = Calcium (mg/dl)
 Abs. Of Standard

Note: To convert mg/dl to mEq/L, divide mg/dl by 2. Lipemic or highly hemolysed samples require serum blank with distilled water.

EXPECTED VALUES : 8.5 - 10.5 mg/dl

Children under 12, usually have high normal values which decrease with ageing.

LINEARITY : 20 mg/dl

REFERENCES:

1. Faulker, W.R. and Meites, S.: Selected Methods for the Small clinical chemistry Laboratory.P. 125 Washington, D.C. 1982.
2. Gitelman, h.: Anal. Biochem. 20:5521 (1967).