

This reagent kit is for quantitative estimation of Calcium (Ca⁺⁺) in serum.

PRINCIPLE:

In an alkaline medium, calcium reacts with Arsenazo III & forms a purple coloured complex. Intensity of colour is measured at 650 nm & this corresponds to calcium concentration. The presence of 8-Hydroxy quinoline in the reagent prevents interference by magnesium.



CLINICAL SIGNIFICANCE:

Clinical conditions like hyperparathyroidism, multiple myeloma, neoplasia of bone and parathyroidism, & conditions of rapid demineralization of bone results in elevated calcium values. Lower calcium values seen in case of hypoparathyroidism, tetany & occasionally with nephrosis and pancreatitis.

SPECIMEN COLLECTION AND STORAGE:

1. Fresh Unhemolysed Serum is the preferred specimen.
2. Heparinsed plasma may also be used.
3. Don't use E.D.T.A. plasma.

REAGENT: Also available as mono test packs.

	25 ml	25x1 ml
	No. of Bottles	
Reagent	1	25
Standard (10 mg/dl)	1	1

PREPARATION OF WORKING REAGENT:

Ready to use.

REAGENT STORAGE AND STABILITY:

The Reagent and Standard are stable at R.T. till the expiry date mentioned on the labels if external contamination of calcium is avoided.

GENERAL INSTRUMENT PARAMETERS:

Reaction Type	: End Point
Standard Concentration	: 10 mg/dl
Slope of Reaction	: Increasing
Units	: mg/dl
Wavelength	: 650nm (630-670) nm
Incubation	: 5 Minutes
Flowcell Temperature	: 37° C
Reagent Volume	: 1.0ml
Zero Setting	: Reagent blank
Sample Volume	: 10 µl (0.01 ml)
Path length	: 1.0 cm

For 1 ml

Dispense	Blank	Std.	Test
Reagent	1.0ml	1.0ml	1.0ml
Standard	-	10 µl	-
Sample	-	-	10 µl

Incubate for 5 min. at R. T. (25°-30°), then mix and read at 650 nm (630-670) nm or against Red filter

STABILITY OF REACTION MIXTURE:

The colour of the final reaction mixture is stable for one hour (when protected from light)

LINEARITY:

This method is linear for calcium values up to 20 mg/dl. For sample with values higher than 20 mg/dl, dilute the sample using normal saline and repeat the assay. Apply proper dilution factor while calculation.

CALCULATIONS:

$$\text{Calcium Concentration (mg/dl)} = \frac{\text{Abs. Test}}{\text{Abs. std}} \times 10$$

EXPECTED VALUES:

Serum:	adults	8.4 to 11.5 mg/dl
Urine:	women	<250 mg/24 hours
	men	<300 mg/24 hours

Limitation interference:

No significant interference was observed from Bilirubin up to 20 mg/dl (Both conjugated and unconjugated Bilirubin) Hemoglobin up to 50 mg/dl, Lipemia as Triglycerides up to 2000 mg/dl, Ascorbic acid up to 50 mg/dl.

Measuring Range:

Measuring range: 0.2-25 mg/dl. Determine samples having higher concentrations manually dilute with 0.9% NaCl or distilled/deionized water (e.g. 1 + 1). Multiply the result by the appropriate dilution factor (e.g. 2). Analytical sensitivity (lower detection limit): Detection limit: 0.2 mg/dl.

NOTES:

1. All glassware and cuvettes should be rinsed with 30% Hydrochloric acid and again rinse with high quality distilled water thoroughly and repeatedly before use.
2. If a larger volume of working reagent is required for the absorbance reading, requisite volumes can be taken in multiples keeping the same ratio of reagent to specimen or standard.
3. Dilute lipemic samples with normal saline (made in deionised water) and multiply with dilution factor.
4. Protect the kit from direct sunlight.
5. For accuracy of results, procedure has to be followed meticulously.
6. As with all diagnostic procedures the physician should evaluate data obtained by way of this kit in light of other clinical information.

BIBLIOGRAPHY:

- Young, S.D. Pestaner, L.C., and Gibbermon, V., Clin.Chem.Vol.21, No.5,(1975).
- Tietz, N. W. Fundamentals of Clinical Chemistry, 2nd edition. W.B. Saunders Co., Toronto to (1976) page 901

Angstrom Biotech Pvt.Ltd.
G1 - 1035, RIICO Industrial Area
Phase - III, Bhiwadi,
Alwar, Rajasthan.
Pin Code - 301019
Email: info@angstrombiotech.in
Website: www.angstrombiotech.in.
Customer Care Number - 9599194831

	Attention, see instructions for use		Consult Instructions For Use
	For in vitro diagnostic use only		Catalog #
	Store at RT		Lot Number
	Do not use if package is damaged		Date of Manufacturing
	Manufacturer		Use by