



CALCIUM KIT (ARSENazo III METHOD)

CLINICAL SIGNIFICANCE

Increased serum calcium may be observed in hyperparathyroidism, vitamin D intoxication, multiple myeloma and some neoplastic diseases of bone. Decreased serum calcium may be observed in hypoparathyroidism, vitamin D deficiency, steatorrhea, nephrosis, and nephritis.

PRINCIPLE

At a neutral pH, the Ca⁺ forms with arsenazo III a complex, the color intensity of which is directly proportional to the concentration of calcium in the sample.

REAGENT COMPOSITION

Reagent : Arsenazo III reagent
Calcium standard : 10 mg/dl

SAFETY PRECAUTIONS AND WARNINGS

1. Reagent is for "in vitro" diagnostic use only.
2. Reagent may be irritating to the skin. Avoid contact. Flush with water if contact occurs.
3. Reagent contains Sodium Azide as a preservative. In a dried form this may react with copper or lead plumbing to form explosive metal azides. Upon disposal, flush with large amounts of water to prevent azide build up.

SAMPLE COLLECTION AND PRESERVATION

Serum, heparinised plasma, 24 hr urine diluted 1:3 with distilled water (adjust pH 3-4 with 0.1N HCl).

REAGENT PREPARATION AND STORAGE

All reagents are ready to use.

REAGENT STABILITY

Up to expiry date when stored at room temperature.

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.

PROCEDURE:

METHOD	: End point		
WAVE LENGTH	: 630 nm		
TEMPERATURE	: 37° C		
CUVETTE	: 10 mm path length		
INCUBATION	: 5 mins.		
STANDARD	: 10 mg/dl (refer the vial Label)		
Addition Sequence	B (µl)	S (µl)	T (µl)
Calcium Reagent	1000	1000	1000
Calcium Standard (S)	-	25	-
Sample	-	-	25
Mix & incubate for 5 minutes at RT and read the absorbance of all the cuvettes at 630 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 : 16 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).