

# CALCIUM ARS

Arsenazo III Colorimetric Method  
Liquid Reagent Ready to use

REF. 0030/50 4x 50 ml  
REF. 0030 4x100 ml



Azienda certificata DNV



## INTENDED USE

Quantitative determination of calcium in serum, plasma, urine.

## PRINCIPLE

In pH neutral medium, calcium forms with Arsenazo III a stable blue-violet complex. The intensity of the colour is directly proportional to the amount of calcium present in the sample.

## SAMPLE

Serum, plasma with heparin, urine/24 h.

Do not use citrate, oxalate or EDTA as anticoagulants.

Calcium is stable 7 days at 2-8°C and several months at -20°C.

Urine samples must be acidified with 20-30 ml of HCl 6 M for quantity of 24 hours to prevent the precipitation of calcium salts.

Old sera presenting evident precipitates can not be analyzed.

Dilute urine 1:2 with distilled water and multiply by 2 the result.

## KIT COMPONENTS

Reagent (A) Ca Volume = 50/100 ml	Buffer Arsenazo III	100 mmol/l 0.13 mmol/l
Standard Volume = 10 ml	Calcium Sodium azide	10 mg/dl (2.5 mmol/l) 5 mmol/l

The reagents are stable until the expiration date indicated on the label if stored at 15-25°C.

Once opened reagents are stable for 2 months if contamination is avoided.

Keep bottles closed when not in use.

## REAGENT PREPARATION

Liquid Reagent, ready to use.

## PRECAUTIONS AND WARNINGS

Reagent may contain some non-reactive and preservative components. It is suggested to handle carefully it, avoiding contact with skin and swallow.

Use the normal precautions required in the laboratory.

Dispose of waste according to local laws.

## PROCEDURE

Wavelength:	600 nm (600 – 630)*
Lightpath:	1 cm
Temperature:	37°C
Reading:	against blank reagent
Method:	Increasing End Point

pipette:	blank	sample	standard
Reagent (A)	1000 µl	1000 µl	1000 µl
water	10 µl		
sample		10 µl	
standard			10 µl

Mix, incubate at 37°C for 2 minutes and read the absorbance of the sample (Ax) and the standard (As) against blank reagent.

Reaction volumes can be proportionally varied.

This method describes the manual procedure to use the kit.

For automated procedure, ask for specific applications.

## RESULTS CALCULATION

Serum/plasma:

Calcium mg/dl =  $A_x/A_s \times 10$  (standard value)

Urine/ 24h:

Calcium mg/24h =  $A_x/A_s \times 10 \times 2$  (dilution factor) x urine Volume (dl)

## EXPECTED VALUES

Serum/plasma: **8.6 – 10.3 mg/dl (2.15 – 2.57 mmol/l)**

Urine: **100 – 300 mg/dl (2.49 – 7.49 mmol/l)**

Each laboratory should establish appropriate reference intervals related to its population.

## QUALITY CONTROL

You must perform the controls at each kit's use and verify that the values obtained are within the reference range reported in the operating instructions. For this purpose we recommend the use of control sera: PRECISENORM (REF.6000) and PRECISEPATH (REF.6001).

## PERFORMANCE

**Sensitivity:** the sensitivity of the method is: 0.8 mg/dl.

**Linearity:** the method is linear up to 25 mg/dl. For higher values, dilute the sample 1:2 and multiply the result by 2.

**Precision intra-assay:**

	Level 1	Level 2	Level 3
Mean (mg/dl)	3.20	8.96	17.98
DS	0.034	0.027	0.092
CV %	1.06	0.30	0.51

**Precision inter-assay:**

	Level 1	Level 2	Level 3
Mean (mg/dl)	3.23	9.01	18.42
DS	0.034	0.082	0.079
CV %	1.06	0.92	0.43

**Interferences:** bilirubin does not interfere up to 20 mg/dl. Triglycerides do not interfere up to 1250 mg/dl. Hemoglobin up to 500 mg/dl does not interfere. Magnesium up to 20 mg/dl dl does not interfere.

Highly hemolyzed or lipemic sera could determine an increase in calcium values. Prepare a blank sample with distilled water.

**Correlation against a reference method:**  $Y = 0,9224x + 0.18 \quad r = 0.9721$

## NOTE

\* Reading at 650 nm are feasible with a different value of Standard and Calibrator.

## REFERENCES

1. Ray Sarker B. C. et al, Anal. Biochem. 20, 155 (1967).
2. Robertson G. et al., Clin. Chim. Acta, 20, 315 (1968).
3. Young D. S., et al, Clin. Chem. 21:1D (1975).