CALCIUM ARS

Arsenazo III Colorimetric Method

Liquid Reagent Ready to use

REF 19210240 R 12X20mL

IVD

PRODUCT CODE:CAL-12D20

Company with Quality System ISO 9001 – ISO 13485 Certified by LMS

INTENDED USE

Quantitative determination of calcium in serum, plasma and 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 = 100 ml	Buffer Arsenazo III	100 mmol/l 0.13 mmol/l
Standard Volume = 10 ml	Calcium Sodium azide	Value on label 5 mmol/l

The reagents are stable until the expiration date indicated on the label if stored at 15-25°C. Do not use over expiry date.
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

Danger

H360D May damage the unborn child.
Restricted to professional users.

P201 Obtain special instructions before use.

P280 Wear protective gloves / protective clothing / eye protection / face protection.

P308+P313 IF exposed or concerned: Get medical advice / attention.

Contains: Imidazole.

Reagents may contain some non-reactive and preservative components.
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:	Incresing End Point

pipette:	blank	sample	standard
Reagent (A)	300 µl	300 µl	300 µl
water	3 µl		
sample		3 µl	
standard			3 µl

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

RESULTS CALCULATION

Serum/plasma:
Calcium mg/dl = Ax/As x (standard value)

Urine/ 24h:
Calcium mg/24h = Ax/As x Std Value x 2 (dilution factor) x urine Volume(dl)
Conversion factor: mg/dl x 0.2495 = mmol/l

EXPECTED VALUES

Serum/plasma:

8.6 – 10.3 mg/dl (2.15 – 2.57 mmol/l)

Urine:

100 – 300 mg/24h (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 Sicurobio control sera: ACUTROL 1 (REF. SB-8334) and ACUTROL 2 (REF. SB-8335).

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:

	Level1	Level 2	Level 3
Mean (mg/dl)	3.20	8.96	17.98
SD	0.034	0.027	0.092
CV %	1.06	0.30	0.51

Precision inter-assay:

	Level1	Level 2	Level 3
Mean (mg/dl)	3.23	9.01	18.42
SD	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 10 mg/dl dl does not interfere. Copper does not interfere up to 600 µg/dl, zinc up to 500 µg/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 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).

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