

Calcium

ARSENAZO (Monoreagent)



Cat.No	Package Sizes
115 016	9 x 10 mL + Standard
115 017	2 x 50 mL + Standard
115 000	2 x 100 mL + Standard
115 001 (Hit I)	4 x 50 mL
115 002 (Hit II)	4 x 100 mL
115 005 (AU)	8 x 70 mL
115 025 (LW)	9 x 10 mL

METHOD

Colorimetric. Arsenazo III.

PRINCIPLE

At a neutral pH, the Ca^{2+} form with Arsenazo III a complex, the color intensity of which is directly proportional to the concentration of calcium in the sample.

REAGENTS COMPOSITION

R1	MES, pH 6.50	100 mmol/L
	Arsenazo III	200 $\mu\text{mol/L}$
Std	Standard: Calcium	10 mg/dL (=100 mg/L) (=2.5 mmol/L)

PRECAUTIONS

For in vitro diagnostic use only.
Avoid contamination by using clean laboratory material (pipette, plastic vial for analyzers,...).

STABILITY OF REAGENTS

When stored at 2-8°C and protected from light, the reagents are stable until the expiry date stated on the label.

PREPARATION AND STABILITY OF WORKING REAGENT

The reagent is ready for use.

SAMPLES

Serum, Heparin plasma (**do not use EDTA!**),
24 hours-Collected Urine

Stability

Serum / Plasma:	7 Days	at	20-25°C
	3 Weeks	at	4-8°C
	8 Months	at	-20°C
Urine *:	2 Days	at	20-25°C
	3 Weeks	at	-20°C

*24 hrs-collected Urine:

Acidity to pH 3 – 4 with N/10 HCl to dissolve
Ca-Oxalate which may be present

REFERENCE VALUES

Serum, plasma : 8.6 - 10.3 mg/dL
(2.15 - 2.57 mmol/L)

Urine : Women < 250 mg/24 h (6.24 mmol/24 h)
Men < 300 mg/24 h (7.49 mmol/24 h)

Note: It is recommended for each laboratory to establish and maintain its own reference values. The given data are only an indication.

PROCEDURE

This reagent can be used manually (see method below) and on most analyzers. The applications are available on request.

Wavelength : 650 nm (600 nm)
Temperature : 37°C
Cuvette : 1 cm light path
Read against reagent blank.

	BLANK	STANDARD	SAMPLE
Reagent	1 mL	1 mL	1 mL
Standard	-	10 μL	-
Sample	-	-	10 μL

Mix and read the absorbance (A) after a 1 minute incubation.

The final color is stable for at least 1 hour.

CALCULATION

A Sample mg/dL C = 10
----- x C mg/L C = 100
A Standard mmol/L C = 2.5

C = standard concentration.

Take dilution factor into account for the calculation of the concentration in urine.

CALIBRATORS & CONTROLS

For the calibration of automated analyzers Greiner Multicalibrator is recommended, for quality control use Greiner normal and abnormal control, Unitrol I and Unitrol II.

PERFORMANCE DATA (37°C)

- Analytical range

The reagent is linear up to 17 mg / dL

- Detection limit

The detection limit is 0.021 mg/dl

- Precision

Within-run reproducibility

N = 11

	Mean	SD	CV	Unit
Control 1	9,08	0,064	0,70%	mg/dl
Control 2	14,96	0,111	0,74%	mg/dl
Patient	9,23	0,045	0,49%	mg/dl

Between-run reproducibility

N = 11

	Mean	SD	CV	Unit
Control 1	9,30	0,093	1,00%	mg/dl
Control 2	14,80	0,091	0,61%	mg/dl
Patient	9,30	0,100	1,08%	mg/dl

- Correlation

A comparative study has been performed between the Greiner method and another commercial reagent on 27 human serum samples. The parameters of linear regression are as follows:

$$y = 0.939x + 0.693 \text{ mg/dl}$$

$$r = 0.986$$

INTERFERENCES

- Ascorbic Acid: no interference up to 50 mg/dL
- Bilirubin: no interference up to 40 mg/dL
- Triglycerides: no interference up to 500 mg/dL
- Hemoglobin: no interference up to 1000 mg/dL

BIBLIOGRAPHY

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4. Baginski ES, Marie SS, Clark WL, Zak B. Direct microdetermination of serum calcium. Clin Chim Acta 1973;46: 46-54.
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SYMBOLS USED



For *in vitro* diagnostic medical use



Batch Code



Use by



Temperature limitation