CALCIUM

4 x 25 mL, 4 x 50 mL
51005001, 51005002

INTENDED USE

This reagent is intended for *in vitro* quantitative determination of calcium in serum, plasma & urine.

- Modified OCPC methodology
- Linear up to 15 mg/dL

CLINICAL SIGNIFICANCE

Calcium is an important ion present in the body. Mainly it is found in bones. In serum calcium exists equally in a free ionized form & also in a bound form with albumin. Calcium helps in enzyme activation, muscle contraction, coagulation of blood, regulation of some hormonal secretions & cell membrane permeability.

Increased levels are found in hyperthyroidism, malignant tumors, acute osteoporosis & adrenal insufficiency.

Decreased levels found in hypoparathyrodism, osteomalacia, rickets, renal failure & tetanus.

PRINCIPLE

Calcium OCPC procedure is based on on the reaction of calcium ions (Ca^{2++}) with O-cresolphthalein complex in an alkaline solution to form an intense violet coloured complex which shows maximum absorbance at 578nm. the 8-hydroxy quinoloine prevents Mg^{2++} interference upto 4 mmol/L.

REAGENT COMPOSITION

CALCIUM DYE REAGENT (R2)	**2 x 25 mL / 2 x 50 mL**
Diethylamine	360 mmol/L
CALCIUM BASE REAGENT (R1)	**2 x 25 mL / 2 x 50 mL**
O-Cresolphthalein complex	0.15 mmol/L
8-Hydroxyquinoline	17.2 mmol/L
CALCIUM STANDARD	**1 x 4 mL**
Calcium standard concentration	10 mg/dL

STORAGE & STABILITY

The sealed reagents are stable up to the expiry date stated on the label, when stored at 2 - 8°C.

LINEARITY

This reagent is linear up to 15 mg/dL.

If the concentration is greater than linearity (15 mg/dL), dilute the sample with normal saline and repeat the assay. Multiply the result with dilution factor.

NORMAL RANGE

It is recommended that each laboratory establish its own reference values.

The following value may be used as guide line.

Serum	:	8.8 - 10.2 mg/dL
Urine	:	100 - 400 mg/24 hrs

PREPARATION AND STABILITY OF REAGENT

Mix reagent 1 (R1) and Reagent 2 (R2) in the ratio 1:1.

PRECAUTION

To avoid contamination, use clean laboratory wares.

Avoid direct exposure of reagent to light.

(Use acid washed (50 % HNO_3) glass wares & tips)

SAMPLE

Serum / plasma (free of haemolysis) / Urine (1/3 diluted)

GENERAL SYSTEM PARAMETER

Mode of Reaction	End point
Slope of reaction	Increasing
Wavelength	578 nm (565-580 nm)
Temperature	30°C
Standard Concentration	10 mg/dL
Linearity	15 mg/dL
Blank	Reagent
Incubation time	5 min
Sample volume	10 µL
Reagent volume	1000 µL
Cuvette	1 cm light path

LABORATORY PROCEDURE

	Blank	Standard	Sample
Working Reagent	1000 µL	1000 µL	1000 µL
Standard	-	10 µL	-
Sample	-	-	10 µ

Mix and incubate for 5 min. at room temperature. Read the absorbance of standard and sample against reagent blank.

CALCULATION

$$\text{Calcium Conc. (mg/dL)} = \frac{\text{Absorbance of sample}}{\text{Absorbance of Standard}} \times 10$$

INTERFERENCE

Bilirubin concentrations higher than 20 mg/dL and phosphate higher than 40 mg/dL, will interfere with the assay.

BIBLIOGRAPHY

1. Schwarzenbach, G.; Analyst., 80, (1955) 713-729
2. Kessler, G., Wolfman, M., Clin.Chem., 10, (1964) 686 – 703
3. Connerty, H. V., Briggs, A.R., Am. J. Clin.Pathol., 45, (1965) 290-296
4. Gitelmann, H. J. Anal Biochem 18, (1967) 521-531
5. Biggs, H.G., Moorehead, W. R.; Clin.Chem., 20, (1974) 1458-1460

SYMBOLS USED ON THE LABELS: IVD IN VITRO DIAGNOSTIC USE | SEE PACKAGE INSERT FOR PROCEDURE | LOT LOT NUMBER | MANUFACTURER'S ADDRESS | MANUFACTURING DATE | EXPIRY DATE | TEMPERATURE LIMIT

BIOSS BioTechnology, GmbH
Boekhulter Weg 1a, 47638 Straelen, Germany
E-mail: sales@biossbiotech.de, support@biossbiotech.de

EC REP Arthrex GmbH
Erwin-Hlescher-Strasse 9, 81249 Munchen, Germany

ADS/V.02/110314

CE ISO 9001 : 2008
ISO 13485 : 2003