

ZINC SINGLE REAGENT

(Colorimetric , Br-PAPS Method)

Intended Use

Zinc reagent for quantitative in-vitro determination of zinc in human serum, plasma or urine.

Principle

Zinc forms a red chelate complex with 2-(5-Bromo -2-pyridylazo)-5-(propyl –N-sulfo –propyl amino)-phenol .The increase of absorbance of this complex can be measured . it is proportional to the concentration of total zinc in the sample.

Components & Concentration of Reagents

Reagent	Component	Concentration
Reagent	Biocarbonate Buffer Ph 9.8	200 mmol/L
	Sodium citrate	170 mmol/L
	5-Br-PAPS	0.02 mmol/L
	Dimethylglyoxime	4 mmol/L
	Detergent	1 %

Reagents provided

1. Zinc Reagent ready to use.
2. Standard - Zinc (200 µg/dl).

Reagent storage and stability

The reagent kit should be stored at 2 - 8°C and is stable till the expiry date indicated on the label. Contamination of the reagent should be strictly avoided.

Specimen collection and preservation

Blood should be collected in clean dry container. Neatly separated serum should be used. Plasma is not recommended as anticoagulants may cause false low results.

Phosphorus is stable for 7 days in neatly separated serum. If the estimation is not possible within 7 days then the specimen should be preserved at -10°C and should be used within 3 weeks.

Assay guidelines for Manual procedure

Bring the reagent and standard to room temperature before performing the assay.

Reaction type	End point with Standard
Reaction Slope	Increasing
Reaction time	5 minutes at 37°C
Wavelength	546 /700 nm
Zero setting with	Reagent Blank
Blank absorbance limit	< 0.800 Abs.
Sample volume	50 µl (0.05 ml)
Reagent volume	1000 µl (1.0 ml)
Standard concentration	200 µg/dl
Linearity	400 µg/dl

Bring the reagent and standard to room temperature before performing the assay.

Reagents	Blank	Standard	Sample
Zinc Reagent	1000 µl (1.0 ml)	1000 µl (1.0 ml)	1000 µl (1.0 ml)
Standard	-	50 µl (0.05 ml)	-
Sample	-	-	50 µl (0.05 ml)

- Mix thoroughly and incubate at 37°C for 5 minutes.
- Read the absorbance of specimen and standard against reagent blank at 546/700 nm.

Calculation

Zinc in µg/dl = $\frac{\text{Absorbance of Sample} \times \text{Conc. of standard (200µg/dl)}}{\text{Absorbance of Standard}}$

Normal Range

Serum/Plasma

Adults : 46 - 150µg/dl

Children (4 – 12 Years) : 65 - 130µg/dl

Urine : 300 – 800 mg/24h

Note: Expected range varies from population to population and each laboratory should establish its own normal range.

Performance Characteristics

Linearity :

Linearity is up to 400 µg/dl (61.2 µmol/L)

Quality Control

To ensure adequate quality control, it is recommended that each assay should include a normal and an abnormal commercial reference control serum. It should be realized that the use of quality control material checks both instrument and reagent functions together. Factors which might effect the performance of this test include proper instrument function, temperature control, cleanliness of glassware and accuracy of pipetting.

References

- Johnsen and R.Eliasson : Evaluation of a commercially available kit for the colorimetric determination of Zinc , International Journal of Andrology , 1987, April 10(2): 435-440.

Symbols

IVD	In Vitro Diagnostics.		Caution.		Keep away from sun light.		Date of Manufacture.
LOT	Batch No.		Read Instructions.		Fragile.		Product Expiry Date.
CONT	Content.		Storage Temperature.		Keep Dry.		Manufactured By.
REF	Catalogue No.						



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