

ZINC

Determination without Deproteinization
in Serum, Plasma and seminal Fluid
Method with 5 Br-PAPS

4 x 25 ml

100

REF CP07-

PRINCIPLE

In the presence of 5-Br-PAPS, zinc forms a colored compound whose color intensity is proportional to the zinc concentration present in the sample.

Any interference due to other trace elements present in the sample is eliminated applying some particular reaction conditions.

REAGENTS

Kit components:	REF CP07-100	Quantity
REAGENT 1/A Buffer pH 8.6	CP07-100R1A	4 x 25 ml
REAGENT 1/B (powder) Ascorbic acid	CP07-100R1B	1 vial
REAGENT 2 5-Br-PAPS	CP07-100R2	1 x 12 ml
STANDARD (Std) Standard zinc 200 µg/dl (30.6 µmol/L)	CP07-100S	1 x 4 ml
BATCHER		1

To dose about 40 mg of Reagent 1/B

STABILITY: stored at 2-8°C, reagents are stable up to the expiration date on the label.

PREPARATION OF REAGENTS

REAGENT 1 (R1/A + R1/B)

Add the contents of 2 full to the brim spoons of Reagent 1/B into a vial of Reagent 1/A.

Shake gently until complete dissolution.

Wait 10 minutes before use.

STABILITY: 30 days at 2-8°C.

WORKING REAGENT 1 (R1 + R2)

Add 1 volume of Reagent 2 to 10 volumes of Reagent 1.

Shake gently to mix the two solutions.

Wait 10 minutes before use.

STABILITY: 10 days at 2-8°C.

SAMPLE

Serum or non hemolyzed plasma.

As anticoagulants, use only heparin salts.

24 hour urine.

Seminal fluid.

Centrifuge the sample at 3000 rpm for 10 -15 minutes.

Dilute the supernatant 1:100 with saline solution.

Consider the dilution factor during calculation.

MANUAL ASSAY PROCEDURE

Wavelength:	560 nm
Optical path:	1 cm
Reading:	against blank reagent
Temperature:	25-30-37°C
Method:	endpoint
Linearity:	2000 µg/dL
Sample/Reagent:	1/20

Let reagents reach the working temperature before use.

Pipette into test tubes labeled as it follows:

B/R: blank reagent, S: sample, Std: standard:

	B/R	S	Std
Distilled water	50 µl	---	---
Sample	---	50 µl	---
Standard	---	---	50 µl
Working reagent	1,0 ml	1,0 ml	1,0 ml

Mix accurately. Incubate for 3 minutes and read absorbance of the sample (As) and the standard (Astd) against the blank reagent at 560 nm. The obtained color is stable for at least 1 hour.

CALCULATION

$\text{zinc } (\mu\text{g/dl}) = (\text{As} / \text{Astd}) \times 200$

$\text{zinc } (\mu\text{mol/L}) = (\text{As} / \text{Astd}) \times 30.6$

To find the zinc quantity in the 24h urine, multiply the concentration (in µg/dl) by the 24h urine volume.

To find the zinc concentration (in µg/dl) in the seminal fluid, multiply the result by the dilution factor (100).

REFERENCE VALUES (adults)

Serum and plasma	68 -107 µg/dl	(10,4 -16,4 µmol/L)
Urine	150 -1200 µg/ 24 hours	(2,3 - 18,4 µmol/ 24 hours)
Seminal fluid	2 - 10 mg/dl	(0.3 - 1,5 mmol/L)

PERFORMANCE CHARACTERISTICS

Linearity: up to 2000 µg/dl.

For higher values, properly dilute the sample with distilled water and multiply the result by the dilution factor.

Within-run precision (seminal fluid sample):

	Level 1	Level 2
Average (mg/dL)	2.05	58.0
DS	0.0178	0.54
CV %	0.87	0.93

Between-run precision (seminal fluid sample):

	Level 1	Level 2
Average (mg/dL)	2.95	55.5
DS	0.030	0.825
CV %	1.01	1.49

Correlation:

FAR kit for zinc determination shows a correlation coefficient of 0.9 in comparison to another kit available on the market.

NOTES

1. Read the information in the MSDS.
2. EDTA based anticoagulant inhibit the reaction.
3. Use disposable plastic test tubes and glassware washed with hydrochloric acid 1N and distilled water.
4. Reaction volumes can be proportionally changed.
5. For particularly turbid and hemolyzed samples, it is recommended to perform the blank sample by adding 1000 µl of Reagent 1 to 50 µl of sample and read the absorbance against the Reagent 1. Chemistry analyzer parameters are available.

WARNINGS AND PRECAUTIONS

The reagents may contain non-reactive components and various preservatives. Contact with the skin and ingestion should be avoided. Use the normal precautions expected with correct behavior in laboratory.

REFERENCE

1. Makino T, Saito M, Horiguchi D, Kina K: Clinica Chimica Acta,120,127-135 (1982)

MANUFACTURER



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KEY SYMBOLS

	In Vitro diagnostic medical device
	batch number
	catalogue number
	temperature limits
	use by
	caution
	consult accompanying documents