

COPPER serum

Determination without Deproteinization
in serum and plasma
3,5 - Di Br Paesa method

5 x 25 ml + 1 x 8 ml

REF CP04-133

PRINCIPLE

Copper, liberated at pH 4.7 by the vector protein ceruloplasmin, forms with 3,5-Di Br- PAESA a colored compound, whose intensity is proportional to the copper concentration in the sample.

REAGENTS

Kit composition:

REF	CP04-133	Quantity
(*) REAGENT 1/A	CP04-133R1A	5 x 25 ml
Buffer pH 4.7		
REAGENT 1/B (powder)	CP04-133R1B	1 vial
Ascorbic acid		
(*) REAGENT 2	CP04-133R2	1 x 8 ml
3,5-Di-Br-PAESA		
STANDARD (Std)	CP04-133S	1 x 2 ml
Copper standard 100 µg/dl (15.73 µmol/L)		
BATCHER (spoon)		1
To weight 40 mg of Reagent 1/B		

Copper standard 100 µg/dl (15.73 µmol/L)

BATCHER (spoon)

To weight 40 mg of Reagent 1/B

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

PREPARATION OF THE REAGENTS

REAGENT 1 (R1/A + R1/B)

Add 3 full spoons of Reagent 1/B into a vial of Reagent 1/A. Mix gently until complete dissolution.

STABILITY: 15 days at 2-8°C.

WORKING REAGENT (R1+R2)

(for mono-reagent procedure only)

Mix 10 volumes of Reagent 1 with 0,5 volumes of Reagent 2. STABILITY: 3-4 hours at room temperature, 3 weeks at -20°C.

Prepare according to daily needs or prepare, separate and freeze.

SAMPLE

Non hemolyzed serum or plasma.
Use only heparin salts as anticoagulant.

MANUAL ASSAY PROCEDURE

Wavelength:	582 (570-590) nm
Optical path:	1 cm
Reading:	against blank reagent
Temperature:	37°C
Method:	Endpoint
Reaction:	4-5 minutes
Linearity:	500 µg/dl
Sample/reagent:	1/20 (monoreagent procedure)
Sample/reagents:	1/20/1 (bireagent procedure)

Let reagents reach room temperature before use.

MONOREAGENT PROCEDURE

Pipette into cuvettes 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	1000 µl	1000 µl	1000 µl

Mix accurately and incubate at 37°C for 4-5 minutes.

Read the sample (As) and the standard (Astd) absorbencies at 582 nm against the blank reagent.

The produced color is stable for at least 1 hour.

CALCULATION

copper (µg/dl) = (As / Ast) x 100

copper (µmol/L) = (As / Ast) x 15,73

BIREAGENT PROCEDURE

Pipette into cuvettes labeled as it follows :

	B/R	S	Std
Distilled water	50 µl	---	---
Sample	---	50 µl	---
Standard	---	---	50 µl
Reagent 1	1000 µl	1000 µl	1000 µl

Mix accurately and read the sample absorbance (Asb) at 582 nm against the blank reagent. Then add:

Reagent 2	50 µl	50 µl	50 µl
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Mix accurately and incubate at 37°C for 4-5 minutes.

Read the sample (As) and the standard (Astd) absorbencies at 582 nm against the blank reagent.

The produced color is stable for at least 1 hour.

CALCULATION

copper (µg/dl) = [A2(s) - A1(s) / A2(std) - A1(std)] x 100

copper (µmol/L) = [A2(s) - A1(s) / A2(std) - A1(std)] x 15.73

REFERENCE VALUES

Male: 70-140 µg/dl (11.0-22.0 µmol/L)

Female: 80-155 µg/dl (12.6-24.4 µmol/L)

PERFORMANCES CHARACTERISTICS

Linearity: up to 500 µg/dl (78.65 µmol/L).

For higher values, repeat the determination on the sample diluted 1:2 and multiply the result by 2.

Within-run precision:

	Level 1	Level 2
Average (µg/dl)	95	210
DS	0.88	2.55
CV %	0.92	1.21

Between-run precision:

	Level 1	Level 2
Average (µg/dl)	101	205
DS	1.35	5.20
CV %	1.34	2.54

Correlation: FAR kit to define copper in serum shows a correlation coefficient of 0.97, in comparison to another kit available on the market.

NOTES

- (*) Dangerous reagents are marked by an asterisk. Refer to MSDS.
- Use plastic disposable test tubes and glassware washed with 1N hydrochloric acid and distilled water.
- Disposal waste according to local laws.
- Reaction volumes can be proportionally changed.
- Chemistry analyzer parameters are available.

WARNINGS AND PRECAUTIONS

REAGENT 1



WARNING

Reagent 1A and Reagent 2 H314 Causes severe skin burns and eye damage. It can cause skin irritation (H315). H319 Causes severe eye irritation.

In case of contact with the eyes: rinse thoroughly for several minutes. If the irritation continues, see a doctor.

REFERENCE

Abe A., Yamashita S., et Al.: Clin. Chem. 552, 35 (1989).

MANUFACTURER



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KEY SYMBOLS

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

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