

# COPPER IN SERUM

Colorimetric Method

50 Tests

## PRINCIPLE :

Copper is released from protein by hydrochloric acid . The protein is precipitated by trichloroacetic acid. Di ethyldi thio carbamate form golden yellow colored complex with copper which can be extracted by n- butanol.

## SAMPLES :

None haemolyzed serum.

## REFERENCE RANGES :

12 – 25 µmol/L(80-160 µg/dl)

## REAGENTS :

1.	Standard	40 µmol/L (254 µg/dl)
2.	Hydrochloric Acid	5 mol/L
3.	Trichloroacetic Acid	1.2 mol/L
4.	Sodium pyrophosphate	
5.	Ammonia	
6.	Diethyldithiocarbamate (DEDTC)	
7.	n-Butanol	
8.	Anhydrous sodium sulphate	

## STABILITY :

The reagents are stable up to the expiry date specified when stored at +15 to 25 °C.

## PROCEDURE :

	Sample mL	Standard mL	Blank mL
Sample	0.5	-	-
Standard	-	0.5	-
R2	0.5	0.5	0.5

Vortex well, Stand for 10 min. then add:

R3	0.5	0.5	0.5
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Vortex well, stand for 10 min, centrifuge sample at 4000 rpm for 10 min. then decant the sample supernatant and discard the pellet, add:

R4	0.5	0.5	0.5
R5	0.5	0.5	0.5
R6	0.5	0.5	0.5

Mix well then add:

R7	1.5	1.5	1.5
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Shake well for 5 min.

**Remove** the organic layer containing the copper complex and dry by shaking with a little powdered anhydrous sodium sulphate (R8). Use dry cuvettes for measuring the golden yellow color of sample ( $A_{\text{Sample}}$ ) and standard ( $A_{\text{Standard}}$ ) at 440 nm against the blank. Linearity upto 94.8 µmol/L (600 µg/dL). Color stable.

## CALCULATION :

Copper concentration

$$= \frac{A_{\text{Sample}}}{A_{\text{Standard}}} \times \text{Standard Conc.}$$

## REFERENCE :

- Ventura, S. and King, E.J. (1951) Biochem. J, 48, lxi
- Eden, A. and Green, H.H. (1940) Biochem. J. 34, 1202

## **COPPER IN SERUM**

### **Colorimetric Method**

+ 15 to +25 °C

50 Tests

In vitro diagnostic use

CAT. No.

CU 2010

## **REAGENTS**

<b>R1</b>	Standard	<b>25 ml</b>
<b>R2</b>	HCL	<b>25 ml</b>
<b>R3</b>	TCA	<b>25 ml</b>
<b>R4</b>	Pyrophosphate	<b>25 ml</b>
<b>R5</b>	Ammonia	<b>25 ml</b>
<b>R6</b>	DEDT	<b>25 ml</b>
<b>R7</b>	n-Butanol	<b>80 ml</b>
<b>R8</b>	Anhydrous Sodium Sulphate	<b>Powder</b>

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