

Consider the following information when a new analyte (test) is added to the laboratory handbook and at scheduled review.

Field	Detail	Essential?
Test Name (Analyte)	Copper	Yes
Alternative Name(s) and Keywords	Cu, TPN (component)	Yes
Discipline/Specialty	Biochemistry	Yes
Description	Copper is essential for the activity of several important enzymes, including cytochrome oxidase and superoxide dismutase.	Yes
Clinical Indication	Copper deficiency is uncommon, but may cause anaemia and leucopenia. It is most likely to be encountered in patients on long-term total parenteral nutrition. Wilson's disease is a rare, hereditary defect of copper metabolism. As a result copper is deposited in the liver, cornea and basal ganglia of the brain. Copper toxicity may occur due to occupational or accidental exposure, copper sulphate is used as a fungicide, algicide and molluscicide. The many symptoms of toxicity include haemolysis, hepatic necrosis, nephrotoxicity and convulsions.	Yes
Patient Preparation	None.	Yes
Specimen Container	Serum (both gel or plain collection tubes) is the preferred specimen. However both Lithium Heparin plasma and EDTA plasma are also suitable.	Yes
Container Image		Yes
Primary Sample Type	Blood	Yes
Minimum Volume Required <small>(µL for serum//blood/urine etc. unless otherwise stated)</small>	1.0mL	Yes
Special Precautions / Requirements	None	Yes
Transport and Storage Requirements	n/a	Yes
Telepath Test Code	CU	Yes
National Pathology Code <small>(READ/SNOMED CT)</small>		No

Reference Interval(s)	12.0 – 25.0 µmol/L	Yes
Telephone Action Limit(s)	None.	Yes
Measurement Units	µmol/L	Yes
Clinical Interpretation	<p>Correct interpretation of trace element deficiency states requires assessment of plasma albumin and total protein as these are often low in post-operative/trauma states associated with plasma dilution. More specifically an elevation in caeruloplasmin as an acute inflammatory response to trauma may result in an elevated total plasma/serum copper.</p> <p>Thus measurement of the free [copper] may be a useful index of potential copper mediated toxicity particularly if Wilson's disease is suspected.</p>	Yes
Useful Links / Guidelines	n/a	Yes
Common Interferences / Causes of Spurious Results	n/a	Yes
Availability of Clinical Advice	Clinical advice may be obtained from the duty biochemist on 0151 706 4755.	Yes
Significant Change Values	n/a	No
Testing Frequency / Minimum Re-testing Interval	n/a	Yes
Related tests	Zn and Se are both measured in the same panel of analytes.	Yes
Technology & Analytical Principle Used	Inductively coupled plasma mass spectrometry (ICP-MS) using collision cell.	Yes
EQA Scheme	TEQAS (as part of NEQAS)	Yes
Laboratory Performed	RLH	Yes
UKAS Accreditation Status	LCL (pending)	Yes

Form completed by: Hannah Fearon

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Date:

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