Caeruloplasmin

Description	Caeruloplasmin is a copper transporting protein which carries up to 90% of circulating copper. Additionally it catalyses the oxidation of Fe(II) to Fe(III), which is then transported by transferrin.
Indication	Measurement is useful in conjunction with serum and urinary copper in the diagnosis of Wilson's Disease.
Additional Info	Caeruloplasmin is low in patients with severe liver disease irrespective of aetiology. Low values are also seen in malnutrition, malabsorption and nephrotic syndrome. It is an acute phase reactant therefore elevated concentration may be seen in infections or inflammatory states. High levels may also be seen in malignancy, trauma, pregnancy and with use of OCP; very high levels in lymphoma or infection/obstruction of the biliary tract. Excess therapeutic zinc impairs the intestinal absorption of copper leading to copper deficiency syndrome, characterised by hypochromic microcytic anaemia with leukopenia/neutropenia and very low caeruloplasmin.
Concurrent Tests	Serum copper Urine copper Penicillamine challenge test
Dietary Requirements	N/A
Interpretation	Caeruloplasmin is useful in conjunction with serum and urinary copper in the diagnosis of Wilson's disease. 95% of patients with Wilson's disease have a low caeruloplasmin level. Useful diagnostic criteria for Wilsons disease are: a) Low serum caeruloplasmin b) Increase in urinary copper > 0.8 μmol/24hr c) Increased non-caeruloplasmin bound ('free') copper d) Kayser-Fleischer rings (present in 75% patients). e) Increased copper in liver biopsy (>250 μg/g dry weight in the absence of signs of other cholestatic liver disease)
Collection Conditions	N/A
Frequency of testing	N/A