Ceruloplasmin Immuno-Turbidimetry

**Intended Use**
Spectrum Diagnostics Ceruloplasmin reagent is intended for Quantitative turbidimetric determination of Ceruloplasmin in human serum.

**Background**
Ceruloplasmin (CER) is a glycoprotein which is synthesized mostly in the liver. It is one of the acute phase protein in inflammation and it is the most important carrier of copper (Cu) in plasma. The Ceruloplasmin molecule binds 6-8 Cu atoms. Ceruloplasmin has antioxidative effect. The most important physiological functions of Ceruloplasmin are the regulation of transport, availability, and redox potential of iron (Fe) as a result of its ferroxidase activity; the antioxidative effect of lipids in the cell membrane, due to the prevention of metal ion-catalyzed oxidation; and the transport of copper.

**Assay Principle**
This Ceruloplasmin test is based upon the Ceruloplasmin antigen-antibody reaction.

**Reagent**

| R1 Buffer Reagent | Phosphate buffered saline (pH 7.43). Polyethylene glycol (40 g/L). Sodium azide (0.95 g/L). |
| R2 Antiserum       | Phosphate buffered saline (pH 7.43). Polyclonal goat anti-human Ceruloplasmin (variable). Sodium azide (0.95 g/L). |

**Materials required but not provided with the kit**

| Standard
| Ceruloplasmin concentration is stated on the vial label. |

| Controls
| Ceruloplasmin reagents are stable up to the expiry date labeled on the bottles when stored at 2 - 8 ºC and contaminations are prevented during their use. Once opened the standard is stable for 6 weeks if stored tightly closed at 2 - 8 ºC after use. For further storage at -30 ºC divide standard into aliquots. Stability 3 months. once thawed never freeze again. |

**Specimen Collection and Preparation**
Fresh serum. Stable 2 days at 2 - 8 ºC or 3 months at -20 ºC. Samples with presence of fibrin should be centrifuged. Do not use highly hemolized or lipemic samples. Once opened the standard is stable for 6 weeks if stored tightly closed at 2 - 8 ºC after use.

**Procedure**

| Wave length | 340 nm |
| Temperature | 37ºC |
| Cuvette     | 1 cm light path |
| Zero adjustment | distilled water |

Bring the reagents at 37ºC and pipette: 

<table>
<thead>
<tr>
<th>Standard</th>
<th>Sample</th>
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<tr>
<td>Reagent (R1)</td>
<td>400 μl</td>
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<tr>
<td>Standard</td>
<td>5 μl</td>
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<tr>
<td>Sample</td>
<td>-----</td>
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Mix, incubate for 2 minutes and record 1st reading (A1). Reagent (R2) 60 μl 60 μl After addition of R2, incubate at 37ºC and after 5 minutes record 2nd reading (A2).

Adaptation sheets for several automatic analyzers are available upon request.

**Calculation**
Generate a reference curve by successive 1:2 dilutions of Standard in saline (At Least 4 points are recommended). Use Saline as zero point. Determine ∆ absorbance of the sample and each calibrator as following:

∆ absorbance of sample = (A2 - A1) sample
∆ absorbance of each Standard = (A2 - A1) for each Standard
Plot the calibration curve and obtain the result.

**Expected Values**
Normal values are between 22 - 61 mg/dL. Each laboratory should establish its own reference range.

**Sensitivity**
When run as recommended, the minimum detection limit of the assay is 4 mg/dL.

**Linearity**
Up to 100 mg/dL. specimens showing higher concentration should be diluted 1/5 using physiological saline and repeat the assay.

**Interfering Substances:**
Haemoglobin up to 1000 mg/dL. Bilirubin up to 20 mg/dL. Triglycerides up to 2500 mg/dL.

**Dynamic Range**
4 - 100 mg/dL.

**Waste Disposal**
This product is made to be used in professional laboratories. Please consult local regulations for a correct waste disposal. S56: dispose of this material and its container at hazardous or special waste collection point. S57: use appropriate container to avoid environmental contamination. S61: avoid release in environment, refer to special instructions/safety data sheets.

**References**