Copper is an integral component of many metalloenzymes; most known copper-containing enzymes bind and react directly with molecular oxygen in oxidation-reduction reactions; the major functions of copper metalloproteins involve oxidation-reduction reactions; most known copper-containing enzymes oxidase, lysyl oxidase, and tyrosinase.

**PRINCIPLE OF THE METHOD**
3,5-Di-Br-PAESA combines with Cu(II) to form a blue-violet complex, the absorbance of which is measured at 580 nm. The reaction has high specificity and interference from other cations is avoided, due to specific pH and environment.

**KIT COMPONENTS**
For in vitro diagnostic use only. The components of the kit are stable until expiration date on the label at 2-8°C. Keep away from direct light sources.

**REAGENT PREPARATION**
Mix equal quantities of both reagents R1 and R2. Stability of working reagent: 30 days at 2-8°C and 7 days at room temperature, well closed.

**SPECIMEN**
Serum (preferred), plasma heparinize. Copper is stable 7 days at 2-8°C and 1 month at -20°C.

**TEST PROCEDURE**
Wavelength: 580 nm (allowed 570 - 600 nm)
Lightpath: 1 cm
Temperature: 25, 30 or 37°C
Dispense: blank standard sample
Reagent: 1.5 ml 1.5 ml 1.5 ml
Water: 100 µl - -
Standard: - 100 µl -
Sample: - - 100 µl
Mix, incubate at 25, 30 or 37°C for 5 minutes. Read absorbances of standard (As) and samples (Ax) against reagent blank.

**RESULTS CALCULATION**
copper µg/dl = Ax/As x 200 (standard value)

**EXPECTED VALUES**

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>70 - 140 µg/dl</td>
<td>80 - 155 µg/dl</td>
</tr>
<tr>
<td>Plasma</td>
<td>110 - 220 µg/dl</td>
<td>126 - 244 µg/dl</td>
</tr>
</tbody>
</table>

Each laboratory should establish appropriate reference intervals related to its population.

**QUALITY CONTROL AND CALIBRATION**
It is suggested to perform an internal quality control. For this purpose the following human based control sera are available:

- QUANTINORM CHEMA
- QUANTIPATH CHEMA

Please contact Customer Care for further information.

**MATERIALS REQUIRED BUT NOT SUPPLIED**

**PRECAUTIONS**
Reagent may contain some non-reactive and preservative components. It is suggested to handle carefully it, avoiding contact with skin and swallow.

**SENSITIVITY LIMIT OF DETECTION (LOD)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemoglobin</td>
<td>≤ 120 mg/dl</td>
</tr>
<tr>
<td>Bilirubin</td>
<td>≤ 30 mg/dl</td>
</tr>
<tr>
<td>Lipids</td>
<td>Interference</td>
</tr>
</tbody>
</table>

**REFERENCES**

**WASTE DISPOSAL**
This product is made to be used in professional laboratories. P501: Dispose of contents according to national/international regulations.

**CONTACT**
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Website: http://www.chema.com

**SUMMARY OF TEST**

- In vitro diagnostic medical device
- Batch code
- Catalogue number
- Temperature limit
- Use by date
- Consult instructions for use

**EUROPEAN REGULATION**
IEU-7.5 IT rev. 15/06/2015