**INTENDED USE**
Quantitative determination of TIBC e LIBC in serum.

**PRINCIPLE**
Transferrin is a protein able to bind the iron present in serum. To define the quantity of this protein, the serum is saturated with an excess of trivalent iron ions and then this excess is eliminated by precipitation with basic carbonate magnesium. The transferrin-bound iron is dosed on the supernatant. The transferrin-bound iron is dosed on the supernatant. The transferrin-bound iron represents the total capacity to bind iron TIBC (Total Iron Binding Capacity). The LIBC (Latent Iron Binding Capacity) or free transferrin is obtained by deducting the serum iron value from the TIBC.

**SAMPLE**
Unhemozyed fresh serum. Remove serum from clot as soon as possible. Iron in serum is stable 4 days at 1.5-25 °C and one week at 2-8 °C.

**KIT COMPONENTS**
- Reagent (A) TIBC
  - Saturation solution
  - Volume = 100 ml
  - Iron chloride
  - 50 mmol/l
- Reagent (B) TIBC
  - Precipitant Reagent powder
  - Magnesium carbonate
  - 21 g

Optional: Measuring cup (Ref. 0022/1)

The reagents are stable until the expiration date indicated on the label if stored at room temperature (1.5-25 °C) and protected from light. Do not freeze. Once opened reagents are stable for 2 months at 1.5-25°C if contamination is avoided.

Keep bottles closed when not in use.

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

Use the normal precautions required in the laboratory.

Dispose of waste according to local laws.

**PROCEDURE**
Add 1 ml of Reagent (A) to 0.5 ml of sample in centrifuge cuvette. Mix on vortex. Leave the solution stand for 5 minutes and then add one measure of Reagent (B), leave at room temperature for 10-20 minutes, mixing 3 or 4 times on vortex. Then centrifuge for 5 minutes at about 3000 rpm/min. Determine iron concentration in the limpid supernatant.

For this purpose we recommend the use of the kit IRON F (Ref. 0086 – 0089).

**RESULTS CALCULATION**

TIBC (µg/dl) = \( Ax - Abx \times As \times Standard \ Value \times 3 \) (serum dilution)

LIBC = TIBC – Serum Iron

**EXPECTED VALUES**
- TIBC: 250 – 420 µg/dl
- LIBC: 150 – 340 µg/dl

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

**QUALITY CONTROL**
You must perform the controls at each kit’s use and verify that the values obtained are within the reference range reported in the operating instructions.

**PERFORMANCE**
- Sensitivity: the sensitivity of the method is: 5 µg/dl.
- Linearity: the method is linear up to 1000 µg/dl. For higher values, dilute the sample 1/2 and multiply the result by 2.

**PRECISION INTRA-ASSAY**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (µg/dl)</td>
<td>279</td>
</tr>
<tr>
<td>CV %</td>
<td>1.3</td>
</tr>
</tbody>
</table>

**PRECISION INTER-ASSAY**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (µg/dl)</td>
<td>287</td>
</tr>
<tr>
<td>CV %</td>
<td>3.36</td>
</tr>
</tbody>
</table>

**INTERFERENCES:**
- Bilirubin does not interfere up to 55 mg/dl. Hemoglobin does not interfere up to 200 mg/dl. Copper does not interfere up to 500 µg/dl.

**CORRELATION AGAINST A REFERENCE METHOD:**

\[ Y = 0.962x + 10.28 \quad r = 0.976 \]

**REFERENCES**