TIBC-Total Iron Binding Capacity

Auxiliary reagents for the determination of Total Iron Binding Capacity (TIBC) in serum

CE IVD

ORDER INFORMATION

REF	Kit size
GD0521 00	100 det.

INDICATION

Iron is an essential element for a lot of metabolic process. It's homeostasis is regulated mainly by two proteins: transferrin, responsible for transportation of iron, and ferritin, responsible for the storage of iron.
TIBC (Total Iron Binding Capacity) measure the ability of serum to bind iron, so represent the maximum concentration of iron that the serum proteins can bind.
TIBC increased levels are found in late pregnancy, iron deficiency anemia, after acute hemorrhage or destruction of liver cells. Decreased levels are present in case of infection, neoplasia, uremia, nephrosis.

METHOD PRINCIPLE

TIBC is assayed by saturating the sample with a solution at very high concentration of iron; the excess of iron is removed by absorption on magnesium carbonate powder and the iron is assayed on the supernatant.
TIBC value is expressed as µg of iron/100 ml of serum.
The difference between TIBC value and serum Iron gives the concentration of unsatured Transferrin (or UIBC).

COMPOSITION

REAGENT C: 1x3 ml (liquid)
Iron saturating solution

REAGENT D: 10 g (powder)
Magnesium carbonate

Measuring cup n° 1

Preparation
Reagents are ready to use.

Storage and stability
Store at room temperature (15-25 °C). Do not freeze the reagents! The reagents are stable up to the expiry date stated on the label if contamination and evaporation are avoided, protected from light.
The above conditions are valid if the vials are opened just only for the time to take the reagent, closed immediately with their cap and stored at the indicated conservation temperature

ANCILLARY EQUIPMENT

- Automatic pipettes
- Conical bottom tubes
- Vortex
- Photometer
- Analysis cuvettes (optical path = 1 cm)
- NaCl solution 9 g/l
- Kit for iron determination:
  - REF GA4886 00 - KL4886 00 – BK4886 00, IRON FERENE
  - REF GD0520 00, IRON CROMAZUROL

SAMPLES

Serum, stable 3 days at 2-8 °C.

Specimen collection / Preanalytical factors
It is recommended that specimen collection should be carried out in accordance with NCCLS Document H11-A3.

INTERNAL QUALITY CONTROL

It is recommended to use controls with known TIBC value. Check that the values obtained are within the reference range provided.

SERUM SATURATION PROCEDURE

1. Allow the reagents to reach working temperature before using.
2. Pipette into well clean conical bottom tubes 500 µl of serum and 10 µl of Reagent C.
3. Mix and leave at room temperature (20-25 °C) for 10 minutes.
4. Add a measuring cup (~10 mg) of Reagent D and leave at room temperature (20-25 °C) for 10 minutes, shaking at regular intervals (4 times on Vortex for 10-15 seconds).
5. Centrifuge until obtaining a clear supernatant.
6. Recover the supernatant for the Iron determination according to the procedure described in the iron kit package insert.

REFERENCE VALUES

250 ÷ 400 µg/dl

Each laboratory should establish reference ranges for its own patients population.

ANALYTICAL PERFORMANCES

Refer to what reported in the iron kit package insert.

PRECAUTIONS IN USE

The reagents contain inactive components such as preservatives (Sodium azide or others), surfactants etc. The total concentration of these components is lower than the limits reported by 67/548/EEC and 88/379/EEC directives about classification, packaging and labelling of dangerous substances. However, the reagents should be handled with caution, avoiding swallowing and contact with skin, eyes and mucous membranes. The use of laboratory reagents according to good laboratory practice is recommended.
As the method has a high sensitivity **only use material with absolutely no traces of Iron** (tubes, cuvettes, pipettes…).

Waste Management
Please refer to local legal requirements.

BIBLIOGRAPHY

1. CARTA, M., "Le proteine del metabolismo del ferro". Riv Med Lab - JLM, Vol 4, N. 1, 2003.
2. NCCLS Document, "Procedures for the collection of arterial blood specimens", Appr. Std., 3rd Ed. (1999).
3. EU-Dir 1999/11 Commission Directive of 8 March 1999 adapting to technical progress the principles of good laboratory practice as specified in Council Directive 87/18/EEC.

AMS S.p.A. – Registered Office and Plant
Via E. Barsanti 17/A
00012 Guidonia (Rome) – Italy
Ph. + 39 0774 354441 r.a.
Fax + 39 0774 578035
www.ams-analyzers.com
info@ams-analyzers.com

Diagnostics Manufacturing
Via Galileo Galilei, 38
Seggiano di Pioltello (MI) - Italy
Ph. + 39 02 929189.1
Fax + 39 02 929189.39
www.gdsrl.com
infodiagnostics@ams-analyzers.com

Met. GD052100.0 eng
Edition: 2011/10/05