TIBC

Total Iron Binding Capacity

Precipitation method – Carbonate magnesium

4 x 25 ml **REF CM11-100**

INTENDED USE

Kit for quantitative determination of total iron binding capacity (TIBC) on serum and plasma.

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 measured 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 subtracting the value of serum iron value from the TIBC.
For iron determination, use one of the following kits:

CL30-250S IRON Ferene
CL31-250S IRON Ferrozine

SAMPLE

Serum, heparinized plasma. Do not use hemolized samples.
Iron in serum or plasma is stable up to 7 days at 2-8°C.

REAGENTS

Kit components	REF CM11-100	Quantity
REAGENT 1 Iron chloride 90 µmol/L	CM11-100R1	4 x 25 ml
REAGENT 2 Basic magnesium carbonate 10 g	CM11-100R2	2 vials

STABILITY: reagents are ready to use. Store at 15-30°C and away from light to keep the reagents stable up to the expiration date on the label. Do not freeze. Once opened, reagents are stable for 4 months if contamination is avoided. Keep bottles closed when not in use. Do not use turbid reagents.

SATURATION PROCEDURE

Temperature: 20-25°C
Precipitation time: 5 + 10 +10 minutes
Sample/Reagent: 1/2

Let the reagents reach the chosen temperature for the assay.

Pipette in centrifuge cuvette:

	Sample
Sample	500 µl
Saturating Reagent	1000 µl

Mix. Leave the solution stand for 5 minutes and then add one measuring spoon (about 150 mg) of Reagent 2. Incubate for at least 10-20 minutes, mixing 3 or 4 times. Then centrifuge for 10 minutes at 3000 rpm/min.

Reaction volumes can be proportionally varied without any change in calculation.

REACTION PROCEDURE

Use the clean supernatant obtained with the Saturation Procedure and within one hour dose the bound iron, using the kit available in the laboratory to define the iron in serum.
Follow the instructions for iron determination.

CALCULATION

Calculate the concentration of TIBC in the sample using the formulas indicated in the iron determination kit by multiplying the result obtained by 3 (dilution factor):

Serum / plasma: [µg/dl] TIBC = Iron Conc in µg/dl on supernatant x 3

[µmol/l] TIBC = Iron Conc in µmol/L on supernatant x 3

LIBC = TIBC – concentration of iron in serum

REFERENCE VALUES

Serum / plasma:

TIBC: 250 - 420 µg iron/dl (45 - 75 µmol iron/L)

LIBC: 150 - 340 µg iron/dl (27 - 61 µmol iron/L)

Each laboratory should define its own reference values.

QUALITY CONTROL - CALIBRATION

A quality control program is recommended for all clinical laboratories.
Control sera in normal and high ranges for each assay are recommended.
The obtained values should be included within the manufacturer's accepted ranges for the method being used.

Control sera of human origin are available for this purpose on request:
PRE-NORM (REF 7526) sera with normal values
PRE-PATH (REF 7528) sera with pathological values
If required, a multi-parametric calibrator of human origin is available (REF 7532).

PERFORMANCE CHARACTERISTICS

Sensitivity: the sensitivity of the method is 5 µg/dl.

Linearity: up to 1000 µg/dl.
For higher values, dilute the samples 1:10 with saline solution and multiply the result by 10.

Interferences: up to 400 µg/dl of copper does not interfere. Up to 10 mg/dl of bilirubin does not interfere. Hemoglobin interferes with the test. Do not use hemolized samples.

PRECAUTIONS

The reagents may contain non-reactive components and various preservatives. Contact with skin and ingestion should be avoided. Use the normal precautions expected with good laboratory practice.

DISPOSAL

The product must be used for professional assay only. Dispose of the product according to national/international laws.

REFERENCES

1 Duffy J. R., Gaudin J., Clin. Biochem. 10, 122 (1977)
2 Higgins T., Clin. Chem. 27, 1619 (1981)
3 Kaplan LA, Pesce AJ: "Clinical Chemistry", Mosby Ed. 1989

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IVD CE

KEY SYMBOLS

IVD	In Vitro diagnostic medical device
LOT	batch number
REF	catalog number
	temperature limits
	use by
	caution
	read instructions for use

Ed. 02 - Feb 2023 RR