IRON

(Modified Colorimetric CAB Method)

Intended Use

Iron is a reagent kit used for the determination of iron concentration in human serum. The reagents are for *in-vitro* diagnostic use.

Principle

Iron reacts with chromazurol (B) and CTMA to form a coloured ternary complex with an absorbance measured at 630 nm. The intensity of the colour produced. Is directly proportional to the concentration of Iron in the sample.

Reagent provided

1. Iron Reagent
2. Iron Standard

Reagent storage and stability

The reagent kit should be stored at 2-8°C and is stable till the expiry date indicated on the label.

Specimen collection and preservation

The recommended specimen is serum or heparin plasma, specimen collected with EDTA, oxalate, or citrate as anticoagulants are unsatisfactory since they bind iron preventing its reaction with the chromogen. The assay should be carried out as far as possible on the same day. Serum and plasma samples are stable for 1 week at 4°C and 1 month at -10°C. The samples should be brought to room temperature prior to use. Avoid use of haemolysed and grossly contaminated samples.

Assay guidelines for Analyzers

Reaction type	End Point Reaction
Reaction Slope	Increasing
Wavelength	630 nm (600 – 650 nm)
Flow cell Temperature	37°C
Incubation	10 minat 37°C
Blank with	Reagent
Sample volume	50 µl (0.05 ml)
Reagent volume	1000 µl (1.0 ml)
Standard Conc.	100 ug/dl
Low limit	37
High limit	175
Linearity	400 µg/dl

Assay guidelines for Manual procedure

Bring the reagent to room temperature before performing the assay.

Reagents	**Blank**	**Calibrator**	**Test**
Reagent	1000 µl (1.0ml)	1000 µl (1.0ml)	1000 µl (1.0ml)
Standard	-	50 µl (0.05 ml)	-
Serum/Plasma	-	-	50 µl (0.05 ml)

1. Mix thoroughly and incubate at 37°Cfor 10 minutes.
2. Read the absorbance against reagent blank at 630 nm (600 - 650 nm).

Calculation

$$\text{Total Iron (µg/dl)} = \frac{\text{Abs sample}}{\text{Abs Std}} \times \text{Con. of Calibrator.}$$

Normal Range

Iron Concentration in serum:

Women : 37 -145 µg/dl

Men : 55-175 µg/dl

Note: Expected range varies from population to population and each laboratory should establish its own normal range.

PERFORMANCE CHARACTERISTICS

Linearity

The reaction is linear up to iron concentration of 400 µg/dl, specimens showing higher concentration should be diluted 1+1 using physiological saline and repeat the assay.

Quality Control

To ensure adequate quality control, it is recommended that each batch should include a commercially available control material with established values determined by this method. It should be realized that the use of quality control material checks both instrument and reagent functions together. Factors which might affect the performance of this test include proper instrument function, temperature control, and cleanliness of glassware and accuracy of pipetting.

References

1. Persijn, J.P., et al, Clin. Acta 35:91, (1971).
2. 2. Stookey, L.L., Anal. Chem. 42:779, (1970).
3. Tietz, N.W., Fundamentals of Clinical Chemistry Philadelphia, W.B. 1. Saunders, pp. 923-929, (1976).

Symbols

IVD	In Vitro Diagnostics.	Caution.	Keep away from sun light.	Date of Manufacture.	
LOT	Batch No.	Read Instructions.	Fragile.	Product Expiry Date.	
CONT	Content.	Storage Temperature.	Keep Dry.	Manufactured By.	
REF	Catalogue No.				

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