IRON NITRO-PAPS

Colorimetric determination of iron in serum without blank sample

TEST SUMMARY
Iron separated from Transferrin, is reduced to bivalent Iron, which reacts with the cromogen present in the reagent, forming a blue compound, which intensity is proportional to the iron concentration present in the sample.

SAMPLES
Unhemolized serum.
Stability: 3 days at 2-8°C.

REAGENTS
Reagent A: Acetate buffer 0.2 mol/l pH 4.3, sodium thioglicolate 40 mmol/l, surfactants.

Reagent B: Nitro-PAPS 0.1 mmol/l pH 4.3.

Standard: Ione ferrico 100 µg/dl; stabilizzanti e conservanti.

MATERIAL REQUIRED BUT NOT SUPPLIED
Normal laboratory equipment. Spectrophotometer UV/VIS with thermostatation. Automatic Micropipette. Cuvette in optical glass or monouse in optical polystyrene. Physiologic solution.

PRECAUTIONS
Reagent may contain not reactive and conservative components. It is opportune to avoid contacts with the skin and do not swallow.
Perform the test according to the general "Good Laboratory Practice" (GLP) guidelines.

REAGENTS PREPARATION
Mix a part of Reagent A with a part of Reagent B. Reagents are stable until expiration date on label, stored at 2-8°C.
Work Reagent is stable 12 days at 2-8°C.

PROCEDIMENTO

Kind of analysis:	End point
Reading time:	10 minutes
Wavelength:	582 nm (578-605)
Temperature:	R.T.
Colour stability:	30 minutes
Lightpath	1 cm
Zero:	Blank Reagent

REAGENTS	BLANK	STANDARD	SAMPLE
Distilled water	100 µl	--	--
Standard	--	100 µl	--
Sample	--	--	100 µl
Work Reagent	2 ml	2 ml	2 ml

Mix and wait 10 minutes, read the absorbances against Blank at 582 nm.

CALCULATION

$$\text{Iron µg/dl} = \frac{A_{(sample)}}{A_{(standard)}} \times 100$$

EXPECTED VALUES

Men	59 - 158 µg/dl
Women	37 - 145 µg/dl

Every laboratory should establish own reference intervals in accordance with own population.

NOTES
- Particularly turbid sera need the sample blank feasible with only Reagent A.
- Due to the high sensibility of the Reagent, use glassware surely without iron traces.
- If the results are incompatible with clinical presentation, they have to be evaluated within a total clinical study.
- Only for IVD use.

CALIBRATION/ QUALITY CONTROL
It is suggested to perform an internal quality control using control serum with known iron values.

TEST PERFORMANCE
Precision

Intra-assay (n = 30)	Mean (µg/dl)	SD (µg/dl)	CV%
Sample 1	113.70	1.2905	1.14
Sample 2	165.93	0.8276	0.50

Inter-assay (n = 30)	Mean (µg/dl)	SD (µg/dl)	CV%
Sample 1	113.86	1.3829	1.21
Sample 2	166.60	1.3544	0.81

Linearity
The method is linear up to 500 µg/dl

Interferences
Sera strong lipemic can interfere with the analysis; it is suggested centrifuge or filtrate the sera with membrane 0.2 µm.

Methods comparison
A comparison with a commercial available product gave the following results in a comparison on 30 samples:

Iron Nitro-paps LTA = x
Iron Nitro-paps competitor = y
n = 30

y = 0,99527x - 0,65775 r = 0,99642

WASTE DISPOSAL
Product is intended for professional laboratories. Waste products must be handled as per relevant security cards and local regulations.

PACKAGING

CODE CC01500	(300 TESTS)	
Reagent A	3 x 100 ml	(liquid)
Reagent B	3 x 100 ml	(liquid)
Standard	1 x 5 ml	(liquid)

REFERENCES

Weippl.G., et al, Blut. 27, 261 (1973).
Makino A., Kiyonaga M., Kina K. Clin. Chem. Acta 171:19-28 (1988).
Maringoni A., Federici G. Eurolato '89 Abstract – Biochimica Clinica. Suppl. 1/8 13,89 178-79.

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SYMBOLS
IVD Only for IVD use
LOT Lot of manufacturing
REF Code number
Storage temperature interval
Expiration date
Warning, read enclosed documents
Read the directions
Biological risk

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