ZINC IN SPERM

Colorimetric determination of Zinc in sperm

TEST SUMMARY

The Zinc, at room temperature, reacts with cromogen present in the reagent giving a coloured complex that have a strength proportional to Zinc concentration present in the sample.

SAMPLES

Sperm.
Stability: 8 days at 2-8°C.

REAGENTS

Reagent A:	Boron buffer 0.37 M pH 8.2; Saliciladoxima 12.5 mM; Dimetilglioxima 1.25 mM. Tensioactive and conservative.
Reagent B:	NITRO-PAPS; 0.4 mM, conservative.
Diluent:	Solution of sample dilution.
Standard:	Zinc ion 2 μg/ml, stabilizer and conservative.

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

Add 2 ml of Reagent B to a vial of Reagent A.
Reagents are stable until expiration date on label, stored at 2-8°C.
Work Reagent is stable 15 days at 2-8°C.
Warning: do not contaminate reagents after the vials opening.

SAMPLE PREPARATION

Centrifuge the sample at 3000 rpm for 10 minutes and dilute the supernatant 1:100 with diluent.

PROCEDURE

Method:	End-Point
Reading time:	5 minutes
Colour stability:	30 minutes
Wavelength:	578 nm (570-582)
Temperature:	Room temperature
Pathlength:	1 cm
Zero:	Blank reagent

REAGENTS	BLANK	STANDARD	SAMPLE
Distilled water	50 μl	--	--
Standard	--	50 μl	--
Sample	--	--	50 μl
Work reagent	1 ml	1 ml	1 ml

Mix and after 5 minutes read absorbances against blank at 578 nm.
The colour is stable for 30 minutes.

CALCULATION

$$\text{Zinc } \mu\text{g/ml} = \frac{\text{A (sample)}}{\text{A (standard)}} \times 2 \times 100$$

EXPECTED VALUES

200 – 350 μg/ml

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

NOTES

- The method is very sensitive, it is necessary to use glassware free from Zinc 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's advisable to perform an internal quality control using control serum with a well-known Zinc concentration.

TEST PERFORMANCE

Precision

Intra-assay (n = 21)	Mean (μg/dl)	SD (μg/dl)	CV%
Sample 1	94.14	2.220	2.36

Inter-assay (n = 21)	Mean (μg/dl)	SD (μg/dl)	CV%
Sample 1	94.48	2.502	2.65

Linearity
The method is linear until 1000 μg/ml.

Methods comparison
A comparison with a commercial available product gave the following results in a comparison on 21 samples:

Zinc LTA = x
Zinc Acid competitor = y
n = 17

y = 0,96483x + 8,74142 r = 0,99825

Interferences
There aren't important interferences in presence of:
bilirubin ≤ 20 mg/dl

WASTE DISPOSAL

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

PACKAGING

CODE FK00200	(50 TESTS)	
Reagent A	5 x 8 ml	(liquid)
Reagent B	1 x 10 ml	(liquid)
Diluent	1 x 100 ml	(liquid)
Standard	1 x 5 ml	(liquid)

REFERENCES

Pasquinelli F., Diagnostica e Tecniche di Laboratorio, (pag. 1103-1104) Rossini Editrice (1984).
Tetsuo Makino, Chimica Clinica Acta 197, 209-220 (1991).
Maringoni A., Illuzzi R., ATB 1991 Abstract.

MANUFACTURER

LTA s.r.l.
Via Milano 15/F
20060 Bussero (Milan) ITALY
Tel: ++39 02 95409034
Fax: ++39 02 95334185
e-mail: info@ltaonline.it
Website: http://www.ltaonline.it

SYMBOLS

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

Mod. 01.06 (ver. 3.7 - 15/10/2010)

CE