ANTIGENES GmbH
Labordiagnostika
Römerstraße 20-22
D-58332 Schwelm

Tel.: +49 2336 -9154958
Fax: +49 2336-9154957
E-Email: info@antigenes.de
Homepage:
www.antigenes.de

Antigen

Art.-No ZR1060201

22 applications

IVD

SemenHOS

(Seminal Hypo-Osmotic Test)

Distribution:

GYNEMED

Application

This HOS test is used to test the vitality of sperm cells. The hypo-osmotic swelling is based on the semi-permeability of the intact cell membrane and their ability of active water transport, in order not to burst. In sperms with intact membranes the flagellum swells up within 5 min. This change remains stable up to 30 min.

Principle

In this hypo-osmotic swelling test swelling of cells only occurs in vital cells with an intact membrane by using hypotonic solution.

Storage

2-8°C. Sterile sampling. Contains no antibiotic.

Stability

24 months from date of manufacture. After opening use within 7 days.

Content

SemenHOS solution 20 ml

Necessary utensils

- Coverslips (18 x 18 mm)
- Gloves
- Contrasting phase microscope
- Native ejaculate or washed sperm (105-110 µl)
- Slides
- Paper towels
- Pipettes and tips (10-100 µl)
- Water bath or heating cabinet (37°C)

Preparation of SemenHOS solution

Preheat the SemenHOS solution at 37°C

Procedure

1. Occasionally native ejaculate without additions includes hypo-osmotic sperm forms. Transfer 5-10 µl liquefied semen without air bubbles to a slide and cover it with cover slips. Microscope at 400x magnification. This is the zero-value.
2. Examine the percentage of sperms with swollen flagellum by observing 100 sperms, calculated in duplicate. Note this value note* (a_0 %).
3. Add 100 µl ejaculate without air bubbles to 900 µl preheated SemenHOS solution and mix
4. Incubate this mixture for 10 min at 37°C.
5. Transfer 10 µl of the mixture to a slide and place and cover it with a cover slip.
6. Microscope at 200x or 400x magnification.
7. Repeat twice step 2 to 6.

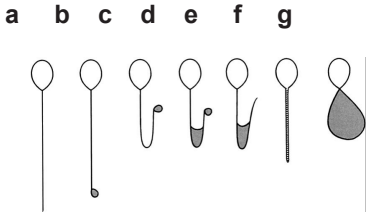

Fig.1: Schematic representation of typical morphological changes of human spermatozoa after exposure with hypo-osmotic solution (extract WHO 2010).
No change (a). Different tail changes (b-g). The swelling in the tail region is indicated in gray.

Evaluation:

Percentage of vitality of spermatozoa

Calculate the difference between the percentage of sperms with swollen flagellum before and after incubation with the SemenHOS solution.

Example:

Before incubation:

1. Count 2/100
2. Count 3/100

Mean value: 2.5 /100= 2.5%

After incubation:

1. Count 88/100
2. Count 97/100

Mean value: 92.5/100= 92.5%

Result: 92.5% - 2.5%= 90%

90 % of the sperms are vital

The HOS test is regarded as normal, if after incubation more than 60% of the sperms show a swollen flagellum. The sample is not normal when the result is less than 50% (WHO 2010).

Safety information / Precautions

- All semen samples should be considered potentially infectious.
- Handle with all samples like HIV or hepatitis infected material.
- When working with samples and reagents wear always protective clothing (gloves, gowns, eye / face protection).
- All ingredients of reagents are classified as non-toxic

References

Drevius L, Eriksson H, (1966) Osmotic swelling of mammalian spermatozoa, Experimental *Cell Research*, 42: 136-56

Jeyendran RS, et al, (1984) Development of an assay to assess the functional integrity of the human sperm membrane and its relationship to the other sperm characteristics, *Journal of Reproduction and Fertility*, 70: 219-28

WHO Press, **(2010)** Laboratory manual for the examination and processing of human semen, 5Th edition

Zaneveld LJD, (1984) *Journal of Reproduction and Fertility*, 70:219-228. © Society for Reproduction and Fertility)

Distribution:
Gynemed GmbH & Co. KG
Lübecker Str. 9, 23738 Lensahn, Germany
Tel.: +49 4363-903290
Fax: +49 4363-9032919
E-Mail: info@gynemed.
Homepage: www.gynemed.de