

Manual

PLEASE READ CAREFULLY

SemenVit

(Semen vital test)

Professional use only

Application

This SemenVit kit is performed to examine the motility and vitality of sperms. It is particularly important in semen samples with less than 40% of the forward moving (motile) sperms.

Principle

The determination of the vitality of sperm cells is judged by the integrity of the sperm membrane. The dye exclusion method is based on the fact that dead sperms with damaged plasma membrane absorb certain dyes.

Storage and stability



2-8°C



24 months from date of manufacture.

Content

- Reagent 1 20 ml
- Reagent 2 30 ml

Required utensils

- Gloves
- Immersion oil
- Microscope
- Native ejaculate or washed sperm (20-50 µl)
- Slides
- Paper towels
- Pipettes and tips (10-100 µl)
- Test tubes (1.5 or 2 ml)
- Test tube holder

Procedure

This test should begin immediately after liquefaction of the semen sample, preferably after 30 minutes and not later than 60 minutes to avoid negative influences:

1. Pipette 20-50 µl sperm ejaculate in a test tube.
2. Add 2 drops of reagent 1, mix (avoid foaming) and incubate at room temperature for 30 seconds.
3. Add 3 drops of reagent 2 and mix again.
4. Transfer 10 µl of the mixture to a slide, grease the mixture with a cover slip and let air dry.
5. Evaluate the sperms with immersion oil at 1000x magnification

Evaluation

Vital sperms appear colorless, transparent or light pink; dead or not viable cells are stained red. Sometimes in sperms within the colored neck region and not colored head and flagellum are observable- This caused by damage to the membrane and these sperm are classified as vital.

Count 200 cells and distinguish between vital sperms from dead sperms. The total number of membrane-intact sperms is of biological significance. The value is determined by multiplying the total number of sperms in the ejaculate by the percentage of membrane-intact cells.

$\frac{\text{Total number of vital sperms}}{\text{Total number of sperms} \times \text{percentage vital sperms}}$

Example

Total number of sperms in ejaculate: 20 Million
Percentage of vital sperms 55% or 0.55, respectively

$$\text{Total number of vital sperms} = 20 \text{ Million} \times 0.55 = 11 \text{ Million}$$

Vital sperms are not necessarily motile. Therefore, it is of clinical importance, whether immotile

sperms are living or dead cells. Test results should be made in connection with the evaluation of the motility of the same semen sample. Vital but immotile sperms may have structural defects in the flagellum. A high number of immotile and dead sperms (necrozoospermia) may indicate a dysfunction of the epididymis. The lowest reference value for the vitality of the sperms is 58% (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).
- Reagent 1 is containing eosin Y and reagent 2 is containing nigrosine. Both substances are not classified as toxic

References

1. **Chemes HE, Rawe YV (2003)** Sperm pathology: a step beyond descriptive morphology. Origin, characterization and fertility potential of abnormal sperm phenotypes in infertile men. *Human Reproduction Update* 9:405-428
2. **Correa-Perez JR et al. (2004)** Clinical management of men producing ejaculates characterized by high levels of dead sperm and altered seminal plasma factors consistent with epididymal necrozoospermia. *Fertility and Sterility* 81:1148-1150
3. **WHO (2010)** Laboratory manual for the examination and processing of human semen. 5th edition
4. **Wilton LJ et al. (1988)** Human male infertility caused by degeneration and death of sperms in the epididymis. *Fertility and Sterility* 49:1051-1058



Article number



consult instructions for use



in vitro diagnostics



Temperature limitation



Lot number