**GENERAL INFORMATION**

Sperm vitality is reflected in the proportion of spermatozoa that are “alive”. Sperm vitality should be determined in semen samples with less than about 40% progressive motile spermatozoa.

VitalScreen uses the eosin-nigrosin staining technique to establishes the percentage of live spermatozoa.

The technique is based on the principle that dead cells will take up the eosin, and as a result stain red. The nigrosin provides a dark background which makes it easier to assess the slides.

VitalScreen provides an accuracy check of the motility evaluation since the percentage dead spermatozoa should not exceed the percentage immotile spermatozoa.

The VitalScreen kit may help in assessing the diagnosis and the management of male infertility.

**MATERIAL INCLUDED IN THE KIT**

- Reagent 1 - 20ml of 1% Eosin Y in saline
- Reagent 2 - 30ml of 5% Nigrosin in saline

**MATERIAL NOT INCLUDED IN THE KIT**

- Light microscope (400 - 600x magnification)
- Microscope glasses
- Cover glasses
- Pipettes
- Test tubes (sterile)

**PREPARATIONS**

Shake reagent 2 (Nigrosin stain) before use.

**METHOD**

1. Mix 50 µL of semen with 2 drops of reagent 1 in a sterile test-tube.
2. After 30 seconds, add three drops of reagent 2 and mix thoroughly.
3. Within 30 seconds of adding reagent 2, place a drop of semen-stain mixture on a microscope slide and make a thin smear using a cover glass.
4. Cover the smear with a cover glass before the smear is dry* and read immediately under the microscope.

* When the smear is allowed to dry, crystals of nigrosin will form which can interfere with the interpretation of the results.

**INTERPRETATION**

- Colourless spermatozoa: live spermatozoa
- Red stained spermatozoa: dead spermatozoa

Count between 100 and 200 cells and differentiate the living from the dead spermatozoa.

Read results immediately, waiting too long will yield lower vitality percentages.

It is clinically important to know whether immotile spermatozoa are alive or dead. Vitality results should be assessed in conjunction with motility results from the same semen sample. The presence of a large proportion of vital but immotile cells may be indicative of structural defects in the flagellum; a high percentage of immotile and non-viable cells (necrozoospermia) may indicate epididymal pathology (WHO, 2010).

A semen sample is considered normal if 58% or more of the sperm cells are alive.

**LIMITATIONS OF THE METHOD**

Spermatozoa stained with VitalScreen cannot be used for any further procedures.

**STORAGE**

Suitable for transport or short term storage at elevated temperatures (up to 5 days at 37°C). Store reagents between 2°C and 25°C.

**WARNINGS AND PRECAUTIONS**

All human, organic material should be considered potentially infectious.

Handle all specimens as if capable of transmitting HIV or hepatitis. Always wear protective clothing when handling specimens.

**BIBLIOGRAPHY**


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