



A Novel Solution for Freezing Small Numbers of Human Spermatozoa



The need for freezing small numbers of human spermatozoa

- ◉ Striving to conceive and bring a child into this world is probably one of the most fundamental aspirations people have.
- ◉ Couples with male factor infertility problems represent ~40% of the infertile population.
- ◉ Azoospermia (absence of spermatozoa in the ejaculate) and severe oligozoospermia (semen with a very low concentration of spermatozoa) account for 20% of all male factor cases.



The need for freezing small numbers of human spermatozoa (continued)

- ◉ With appropriate technology and procedures, sperm can be collected.
- ◉ The challenge is to **preserve these precious sperm cells while maintaining fertilization, implantation and take home baby rates.**
- ◉ Today no efficient method or technology for cryopreservation of **small number of spermatozoa** exists.



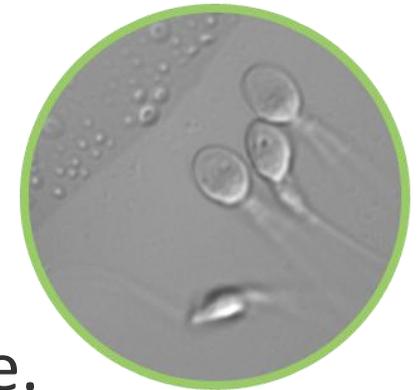
Sperm VD

- ⦿ A novel solution of cryopreservation of very low numbers of spermatozoa aims to maximize fertility perseveration for males.



Background

- ⦿ Male fertility problems often arise due to one of the following reasons:
 - › Poor sperm motility
 - › Low sperm count
 - › Sperm structure problems



These can all reduce chances to conceive.

- ⦿ **ICSI** – Intracytoplasmic Sperm Injection is the acceptable procedure to achieve embryo in cases of male infertility.
- ⦿ **TESE** (Testicular Sperm Extraction) is the acceptable procedure for sperm retrieval.

Background

- ⦿ Cryopreservation of sperm cells is mandatory in cases of azoospermia/severe oligozoospermia .
- ⦿ The routine methods for sperm freezing **are not suitable** for freezing small numbers of spermatozoa.
- ⦿ Most of the sperm cells **will not be found** after thawing in cases of rare spermatozoa.



Background

- ⦿ An optimal device for freezing small numbers of spermatozoa **will avoid unnecessary TESE procedures.**
- ⦿ An optimal device for freezing small numbers of spermatozoa **will give a good chance** for males with severe oligozoospermia **to preserve their fertility** potential.



Currently proposed methods for sperm cryopreservation:

Cryovials



Straws



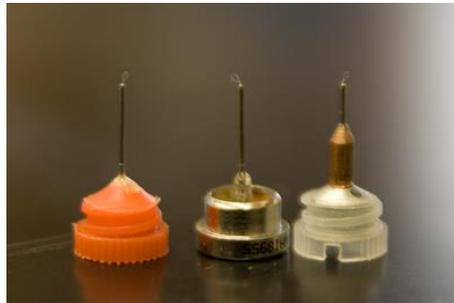
Cryotops



Cryolocks



Cryoloops



Tips



Competition



In conclusion:

Today no efficient method and/or technology for cryopreservation of small number of spermatozoa exists.

Sperm VD – Advantages



- Optimal recovery of cells.
- No loss of cells after thawing.
- Motility and viability of the thawed cell is unaffected.
- Optimal cryopreservation after TESE procedure will avoid unnecessary surgical sperm recovery.
- Males with severe oligozoospermia will be able to preserve their fertility potential .
- Ease of use for the IVF laboratory staff.

Target Markets

The two major target markets are:

- ◎ **Azoospermic patients who have undergone a TESE/micro-TESE procedure which yielded a small number of spermatozoa.** These can now be split between several SpermVD devices, allowing thawing of the necessary amount for each OPU, thus maximizing fertility preservation.
 - › The potential market for azoospermic patients who require TESE is 84,000* SpermVD units a year.
- ◎ **Severe oligozoospermia/Virtual azoospermia patients** - In conjunction with the extended search technique, the SpermVD allows creation of a backup in case fresh spermatozoa will not be found in the ejaculate on OPU day.
 - › The potential market for this opportunity is approximately 28,000* units a year.

* As fertility treatments become more accessible worldwide, these numbers are expected to grow.



THANK YOU!