

## HBA<sup>®</sup> Slide

### Sperm-Hyaluronan Binding Assay

- For qualitative sperm assessment in minutes
- Quick and reliable diagnostic tool
- Binding ratio for maturity, strict morphology and DNA integrity
- Identifies patients proven to benefit from HA-sperm selection in the PICSI<sup>®</sup> dish



## HBA<sup>®</sup> Slide

### Sperm diagnostics based on Hyaluronic acid binding

The Hyaluronic Binding Assay (HBA<sup>®</sup>) is an important diagnostic tool for suspected male infertility in the analysis of semen. In a matter of minutes the HBA<sup>®</sup> slide provides an answer to the proportion of mature binding spermatozoa in the sample (The HBA<sup>®</sup> score %).

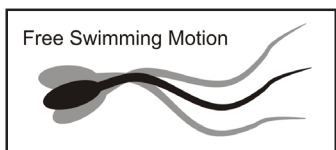
$$\text{Calculate \% Bound} = 100 \times \frac{\text{Bound Motile}}{\text{Total Motile}}$$

Facts on Hyaluronan (Hyaluronic acid -HA):

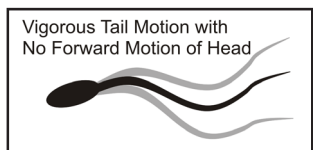
- Hyaluronan is the major component of the Cumulus Complex surrounding the human oocyte
- A sperm's ability to bind to HA is a biochemical marker of the sperm's maturity and DNA integrity
- Only mature spermatozoa with developed receptors for HA can bind

Viewed in the microscope, bound sperm are differentiated from unbound sperm by their beating tails with heads that make no progressive movement.

Unbound, Motile Sperm



Bound, Motile Sperm



#### Clinical documentation

The ability to bind to HA correlates to:

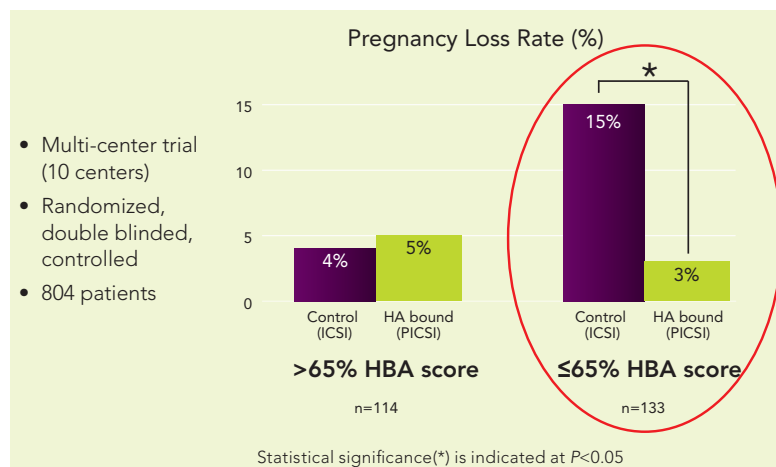
- **Maturity**
- **Strict morphology**
- **High DNA integrity**
- **Reduced chromosomal aneuploidies**

The HBA<sup>®</sup> slide is found to be useful in predicting the ability of spermatozoa to fertilize oocytes in IVF and is helpful in distinguishing semen samples suitable for IVF or ICSI (Breznik et al., 2013)

#### Helps to significantly reduce Pregnancy Loss Rate

WorriLOW et al. (2012) found that a combination of the diagnostic abilities of the HBA<sup>®</sup> slide and the HA-sperm selection abilities of the PICSI<sup>®</sup> dish improved Clinical Pregnancy Rate and significantly reduced Pregnancy Loss Rate in ICSI patients diagnosed with low HBA<sup>®</sup> scores ( $\leq 65\%$  binding ratio).

This study also demonstrated that 15% of all ICSI patients have a low HBA score ( $\leq 65\%$ ) and would benefit from HA sperm diagnostics and selection.



- Multi-center trial (10 centers)
- Randomized, double blinded, controlled
- 804 patients

#### References

- WorriLOW et al.** (2012) Use of hyaluronan in the selection of sperm for intracytoplasmic sperm injection (ICSI); significant improvement in clinical outcomes-multicenter, double blinded and randomized trial. *Hum. Reprod.*, Nov 30.
- Yagci et al.** (2010) Spermatozoa bound to solid state hyaluronic acid show chromatin structure with high DNA chain integrity: An acridine orange fluorescence study. *J Androl*; 31:566-572
- Breznik et al.,** (2013) Are Sperm DNA fragmentation, hyperactivation, and hyaluronan-binding ability predictive for fertilization and embryo development in in vitro fertilization and intracytoplasmic sperm injection. *Fertil. Steril.* 2013 Apr;99(5):1233-41
- Huszar et al.,** (2012) Sperm testing and ICSI selection by hyaluronic acid binding: the hyaluronic acid coated glass slide and petri dish in the andrology and IVF laboratories. *Practical Manual of in Vitro Fertilization: Advanced Methods and Novel Devices.* New York: Springer. P.241-257

#### Catalogue No.

BCT-HBA-10 HBA<sup>®</sup> slide: Package of 10 assays

#### Find more information on [www.origio.com](http://www.origio.com)

A demonstration video as well as the instructions for use are available on our website. You can also find out who your local ORIGIO distributor is.