



Sperm Quality – Evaluation in IVF

High sensitive visualization of birefringent structures

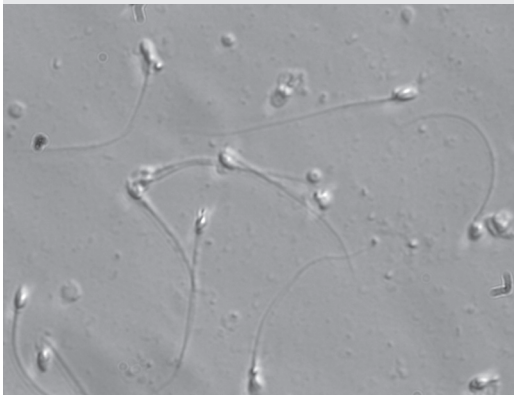
Living up to Life

Leica
MICROSYSTEMS

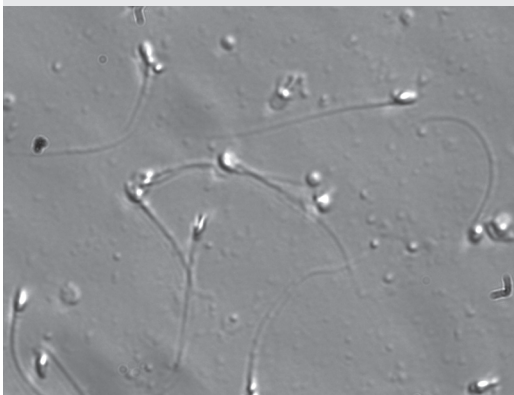
New Quality criteria of Spermatozoa selection for ICSI

Benefits

- Established Modulation Contrast for morphological evaluation
- High resolution images with 63x objective
- Additional polarized light for birefringence detection
- High sensitive visualization of birefringent structures on coloured background (one lambda compensator)



Spermatozoa were observed at the inverted microscope without polarizing lens.



The same spermatozoa observed after the insertion of the polarizing lens.

Living human spermatozoa are naturally birefringent, due to the anisotropy of their protoplasmic texture. In the mature sperm nucleus, there is a strong intrinsic birefringence associated to nucleoprotein filaments which are arranged in rods and longitudinally oriented.

The mature acrosomal complex shows a similar type of birefringence as the nucleus, indicating the presence of subacrosomal protein filaments which are longitudinally oriented. The same is for large portions of the tail texture.

Due to the anisotropy of the inner protoplasmic sperm structures, the resulting birefringence allows a sperm analysis closer to TEM (Transmission Electron Microscopy) than to phase contrast analysis.

Order numbers:

- 11532717 Birefringence-Lambda-IMC-Set for S28,man
- 11532727 Birefringence-Lambda-IMC-Set for S28,mot
- 11532728 Birefringence-Lambda-IMC-Set for S40

Simple add-on to Leica inverted ICSI-systems to visualize sperm morphology via modulation contrast in combination with birefringence evaluation of sperm heads.

Developed in cooperation with:

S.I.S.ME.R. Reproductive Medicine Unit - Via Mazzini, 12
40138 Bologna, Italy

Literature:

1. L. Gianaroli, M.C. Magli, G. Collodel, E. Moretti, A.P. Ferraretti, B. Baccetti: Sperm head's birefringence: a new criterion for sperm selection. *Fertil Steril* 2008;90:104-112
2. L. Gianaroli, M.C. Magli, A.P. Ferraretti, A. Crippa, M. Lappi, S. Capitani, B. Baccetti: Birefringence characteristics in sperm heads allow for the selection of reacted spermatozoa for intracytoplasmic sperm injection. *Fertil Steril* 2010; 93:807-813