SCA EVOLUTION

ANIMAL

MORE THAN JUST BASIC SEMEN ANALYSIS

MICROPTIC
AUTOMATIC DIAGNOSTIC SYSTEMS
Microptic are the innovators of the world’s most advanced CASA (Computer Aided Semen Analysis) system. With dynamic and highly qualified staff, we continue to develop our products in collaboration with the world’s leading research centres and laboratories.
SCA®, THE MOST ADVANCED AND INTEGRATED MODULAR CASA SYSTEM

SCA® is a modular automatic system for the analysis of semen samples, according to pre-defined criteria, for most of the vertebrates (mammals, avian, reptile, amphibian and fish) and invertebrates (e.g. echinoderms and molluscs).

FLEXIBLE AND EXHAUSTIVE

DETAILED ANALYSIS AND QUANTIFICATION
Allows the accurate and objective analysis of a wide range of sperm kinematics, morphological, DNA and vitality parameters, as well as defining new analysis settings that adapt to new animal species or breeds.

STANDARDIZATION AND TRACEABILITY
The SCA® greatly improves the ability of the laboratory to accurately analyse motility sequences for motility analysis and sperm images for morphology, DNA fragmentation, vitality and acrosome reaction. Measurement errors due to human factors are minimized in the analysis of animal sperm.

RELIABLE DATA FOR SCIENTIFIC PAPERS
SCA® system has been widely used in animal research, being versatile enough to suit a wide range of animal species, from invertebrates to mammals, including rodents and has even proven to be useful in the study of microalgae counting.

AUTOMATION
With a motorized stage fitted to the microscope the analysis process becomes fully automatic enabling the examination of 4 slides or counting chambers consecutively, without the presence of the operator.

SCA® TOXICOLOGY: A NEW RAT AND MOUSE SCA® HAS BEEN DEVELOPED
Ideal for testing various drugs, chemicals and radiations for their toxicity. This system adheres to 21 CFR11 guidelines.

PORTABLE SYSTEM
The laptop configuration allows the SCA® to be transported almost anywhere in the field, enabling e.g. animal fertility studies in situ, during the breeding season.

Since its launch in 1997, the SCA®, sperm analyser has been continuously developed, improving with each version the detection and analysis algorithms.

**SCA® EVOLUTION, THE ULTIMATE CASA RESEARCH TOOL**

**CUSTOMIZABLE DYNAMIC TABLES**
Enable the operator to amalgamate any of the database results into subgroups and create customised statistics.

**SORT FUNCTION**
Can be used to modify parameters for existing sperm functional tests or create new cut-off points for rapid sperm, progressiveness, etc.

**NEW INTERFACE**
Fully customizable.

**SPERM FUNCTIONAL TEST**
Automatic analysis of hyperactive and mucus penetration, information about the capacity of sperm to fertilize the egg.

**ADAPTED TO THE NEW TECHNOLOGIES**
The SCA system works with touch screens, multi-screens, leap motion and portable devices.

**SORT FUNCTION**
Can be used to modify parameters for existing sperm functional tests or create new cut-off points for rapid sperm, progressiveness, etc.

**NEW INTERFACE**
Fully customizable.

**ACROSOME REACTION ASSAY**
Automatic analysis of intact and acrosome reacted sperm with FluoAcro kit.

**CUSTOMIZED REPORTS SERVICE**
More than 40 different reports with the possibility of selecting images and graphics (including Levy-Jennings report for quality control).

**ADVANCED ANALYSIS**
SCA® offers several innovations in automatic analysis such as: fluorescence analysis of sperm concentration, motility and DNA fragmentation; very low concentration sample analysis; and tail detection in morphology.
AUTOMATICALLY EXPORT DATA TO DIFFERENT FORMATS

The analysis data can be easily exported to excel, pdf, word, etc. Additionally, the user can recall the analysis in the database and print the desired report.

mySCA

Virtual site for customers with unlimited space to upload sessions, reports and videos. Also permits users to access webinars, tutorials and on-line teaching courses as well as perform an External Quality Control (EQA).

LABORATORY INFORMATION SYSTEM (LIS) CONNECTIVITY

SCA® is ready to connect with existing databases.

SUPPORT

Technical advice and service, giving the latest program version.
Intuitive CASA system for your swine production center. Automatically provides optimal doses.

Motility & concentration, as well as droplets and coiled tails, are rapidly and automatically analysed. Also acrosome integrity can be automatically analysed.
Includes a user-friendly animal database that permits the management of the results, identification data as well as obtaining statistics. Full report includes images and graphs. In addition, a summary report by animal and date can be easily obtained and exported to several formats.

High quality hardware components: Phase contrast microscope with heating stage, digital Basler camera and control unit computer (optional motorized stage to do the process automatically). Can be connected to a digital scale and barcode reader allowing a quicker data insertion.

Compatible with existing software or databases.

Can be plugged into a semen filling, sealing and labeling machine, automatizing the whole procedure of cryopreservation and making it faster.

Any disposable analysis chamber can be used.

Technical Support is available, with remote Internet connection.
## SCA® Modules and Systems:

### Main Modules

<table>
<thead>
<tr>
<th>SCA® Module</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>SCA® Motility and concentration</td>
<td>Analysis of the motility, concentration and kinematic parameters</td>
</tr>
<tr>
<td>SCA® Morphology</td>
<td>Analysis of the morphology and morphometry in stained sperm samples</td>
</tr>
<tr>
<td>SCA® DNA Fragmentation</td>
<td>Analysis of the DNA fragmentation with the chromatin dispersion test</td>
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<tr>
<td>SCA® Vitality</td>
<td>Analysis of vitality using fluorescence microscopy</td>
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<tr>
<td>SCA® Acrosome reaction</td>
<td>Analysis of intact and acrosome reacted sperm using fluorescence</td>
</tr>
<tr>
<td>SCA® Droplets</td>
<td>Analysis of cytoplasmic droplets and coiled tails (for boar)</td>
</tr>
<tr>
<td>SCA® Acrosome integrity</td>
<td>Analysis of acrosome integrity (for boar)</td>
</tr>
<tr>
<td>SCA® Sample Management</td>
<td>Management of the database and reports generator</td>
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</tbody>
</table>

### Additional Modules

- **SCA® DataShare:** It enables the internal SCA® database sharing and the connection with any LIS system.
- **SCA® Stage Controller:** Fully automation using motorized stage.
- **SCA® Manual Counter:** Manual counter of any biological sample.

### Complementary Systems (To be used in combination with a main analysis system)

- **SCA® Capture:** Unitary module for image capture.
- **SCA® Editor:** Module for analysis modification.
- **SCA® Viewer:** Free software for image visualization.

### SCA® Production Modules:

- **SCA® Production:** Automatic analysis of concentration and motility, and interactive morphology and acrosome analysis in unstained samples.
- **SCA® Droplets:** Automatic analysis of cytoplasmic droplets and coiled tails.

### Minimum Requirements:

<table>
<thead>
<tr>
<th></th>
<th>SCA® Motility and Concentration, Droplets</th>
<th>SCA® Morphology</th>
<th>SCA® DNA Fragmentation</th>
<th>SCA® Vitality</th>
<th>SCA® Acrosome reaction</th>
<th>SCA® Acrosome integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Computer</strong></td>
<td>Desktop or laptop: Operating system Windows 10 (32 or 64 bits); Processor: Intel Core i5 or superior; RAM: 4 GB or superior; USB 3.0 port</td>
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<tr>
<td><strong>Camera</strong></td>
<td>Basler Ace acA1300-200uc (High resolution and up to 200 fps)</td>
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<td><strong>Microscope</strong></td>
<td>Nikon, Olympus or Zeiss; Trinocular tube 1x, C-mount 1x; Turret condenser and centering telescope</td>
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<td><strong>Observation Method</strong></td>
<td>Negative phase contrast, Fluorescence, Brightfield, Brightfield, Fluorescence, Fluorescence, Fluorescence, Phase contrast</td>
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<tr>
<td><strong>Objective</strong></td>
<td>10x Ph- 40x / 60x 10x 20x 40x Plan Fluor 40x ph+</td>
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<td><strong>Filters</strong></td>
<td>Green, Blue, Green, Bandpass [EX 510-560; EM 420; DM 400], Bandpass [EX 330-380; EM 420; DM 440]</td>
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<td><strong>Disposables, Kits, Stainings</strong></td>
<td>Disposable counting chambers or Makler, SpermBlue, Chromatin dispersion test kits (SCD), FluoVit, FluoAcro, -</td>
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<td><strong>Additional Hardware</strong></td>
<td>Heating stage (37°C), Heating stage (37°C), Heating stage (37°C), -</td>
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(*) Ask for each species.