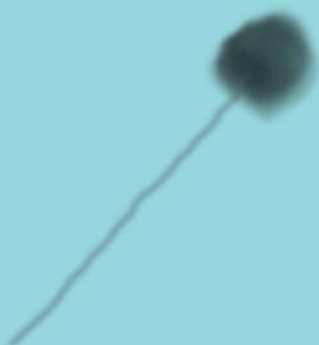# SCA
EVOLUTION

ANIMAL

MORE THAN JUST BASIC SEMEN ANALYSIS
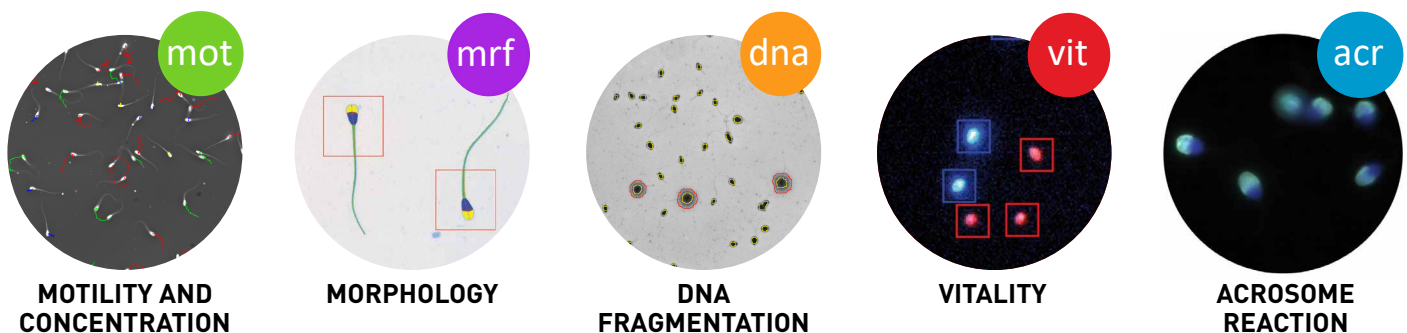
MICROPTIC
AUTOMATIC DIAGNOSTIC SYSTEMS

MICROPTIC HAS SPECIALIZED IN SEMEN ANALYSIS FOR OVER 30 YEARS

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).

mot	mrf	dna	vit	acr
MOTILITY AND CONCENTRATION	**MORPHOLOGY**	**DNA FRAGMENTATION**	**VITALITY**	**ACROSOME REACTION**

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[1], 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.

[1](AF Malo , JJ Garde , AJ Soler , AJ García , M Gomendio , ER Roldan , Biology of Reproduction, 2004; G van der Horst, L Maree, Biotech Histochem, 2011; G van der Horst, L Maree, SH Kotzé and M J O'Riain, BMC Evolutionary Biology, 2011; I. Luedersa, I. Lutherb,c, G. Scheepersd, G. van der Horst, Theriogenology, 2012; J G Martínez, V Atencio García , S Pardo Carrasco, Neotropical Ichtylogy, 2012; AFortunato, R Leo, S Casale, G Nacchia, F Liguori, E Tosti, Journal of Fertilization, 2013; M Ramón , AJ Soler , Ortiz JA, O García-Alvarez , A Maroto-Morales , Roldan ER, JJ Garde , Biology of Reproduction,2013)

SCA® EVOLUTION, THE ULTIMATE CASA RESEARCH TOOL

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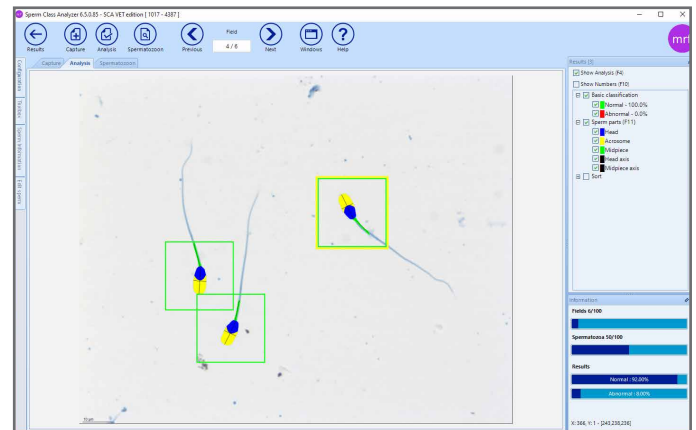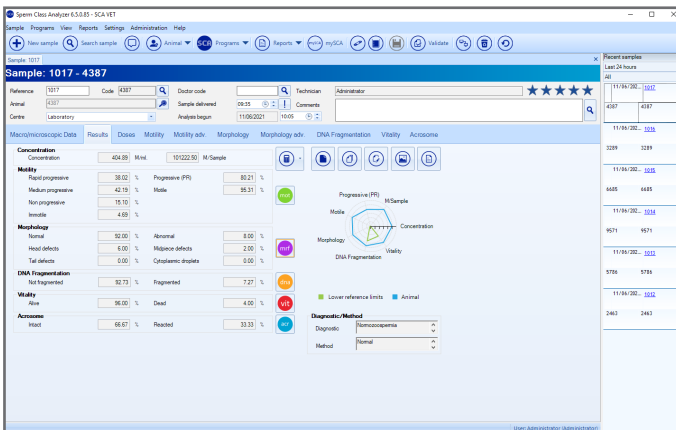
SPERM FUNCTIONAL TEST

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

SORT FUNCTION

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

ADAPTED TO THE NEW TECHNOLOGIES

The SCA system works with touch screens, multi-screens, leap motion[1] and portable devices.

NEW INTERFACE

Fully customizable.

ACROSOME REACTION ASSAY

Automatic analysis of intact and acrosome reacted sperm with FluoAcro kit.

CUSTOMIZABLE DYNAMIC TABLES

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

TRAINING IN YOUR LABORATORY

Installation, training and accreditation by specialist.

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.

OUR OBJECTIVE: WARRANTY AND TRUST IN THE DIAGNOSTICS / RESEARCH

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.

SCA EVOLUTION

Reference: 1001

Date: 04/06/2015
Centre: Laboratory

Code: 001

Animal: Name

Fresh (04/06/2015 17:15)

Concentration		
39.58 M/mL	98.95 M/Sample	Volume (mL): 2.50 Dilution 1:0

Progression	Total	%	M/mL	M/Sample
Progressive (PR)	263	70.89	28.06	70.15
Non-progressive (NP)	83	22.37	8.85	22.14
Immotile (IM)	25	6.74	2.67	6.67

	Total	%	M/mL	M/Sample
Motile	346	93.26	36.91	92.28

Velocity	Total	%	M/mL	M/Sample
Rapid	216	58.22	23.04	57.61
Medium	67	18.06	7.15	17.87
Slow	63	16.98	6.72	16.80
Immotile (IM)	25	6.74	2.67	6.67

Velocity and progressivity	Total	%	M/mL	M/Sample
Rapid progressive	172	46.36	18.35	45.87
Medium progressive	91	24.53	9.71	24.27
Non progressive	83	22.37	8.85	22.14
Immotile	25	6.74	2.67	6.67

Progression
- Progressive (PR)
- Non-progressive (NP)
- Immotile (IM)

Velocity
- Rapid
- Medium
- Slow
- Immotile (IM)

Velocity and progressivity
- Rapid progressive
- Medium progressive
- Non progressive
- Immotile

	Average	Immotile (IM)	Slow	Medium	Rapid	Units
Head area	39.56	34.04	40.10	37.77	41.05	µm²

	Concentration				Total	%
Round cells	0.11	M/mL		Circular tracks	263	70.89 %

SCA® PRODUCTION EDITION

Intuitive CASA system for your
animal 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.

SCA® PRODUCTION MAIN FEATURES

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:

AUTOMATIC ANALYSIS MODULES	
SCA® Motility and concentration	Analysis of the motility, concentration and kinematic parameters
SCA® Morphology	Analysis of the morphology and morphometry in stained sperm samples
SCA® DNA Fragmentation	Analysis of the DNA fragmentation with the chromatin dispersion test
SCA® Vitality	Analysis of vitality using fluorescence microscopy
SCA® Acrosome reaction	Analysis of intact and acrosome reacted sperm using fluorescence
SCA® Droplets	Analysis of cytoplasmic droplets and coiled tails (for boar)
SCA® Acrosome integrity	Analysis of acrosome integrity (for boar)
SCA® Sample Management	Management of the database and reports generator
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 and results visualization

SCA® PRODUCTION MODULES:

AUTOMATIC ANALYSIS MODULES	
SCA® Production	Analysis of concentration, motility, interactive morphology and acrosome analysis in unstained samples
SCA® Droplets	Analysis of cytoplasmic droplets and coiled tails (for boar)
SCA® Acrosome integrity	Analysis of acrosome integrityv (for boar)

MINIMUM REQUIREMENTS:

	SCA® Motility and Concentration, Droplets		SCA® Morphology	SCA® DNA Fragmentation		SCA® Vitality	SCA® Acrosome reaction	SCA® Acrosome integrity
COMPUTER	Desktop or laptop: Operating system Windows 10 (64 bits); Processor: Intel Core i5 or superior; RAM: 4 GB or superior; USB 3.0 port							
CAMERA	Basler Ace acA1300-200uc (High resolution and up to 200 fps)							
MICROSCOPE	Nikon or Olympus; Trinocular tube 1x, C-mount 1x; Turret condenser and centering telescope							
OBSERVATION METHOD	Negative phase contrast	Fluorescence	Brightfield	Brightfield	Fluorescence	Fluorescence	Fluorescence	Phase contrast
OBJECTIVE*	10x Ph-		40x / 60x	10x		20x	40x Plan Fluor	40x ph+
FILTERS	Green	Long bandpass (EX 330-380; EM 420; DM 400)	Blue	Green	Bandpass (EX 510-560; EM 590; DM 565)	Long bandpass (EX 330-380; EM 420; DM 440)	Dual band (DAPI/FITC) (EX 387/480, EM 433/530, DM 403/502)	Green
DISPOSABLES, KITS, STAININGS	Disposable counting chambers or Makler	- / FluoCount	SpermBlue	Chromatin dispersion test kits (SCD)		FluoVit	FluoAcro	-
ADDITIONAL HARDWARE	Heating stage (37ºC)		-	-		Heating stage (37ºC)	-	-

(*) Ask for each species.