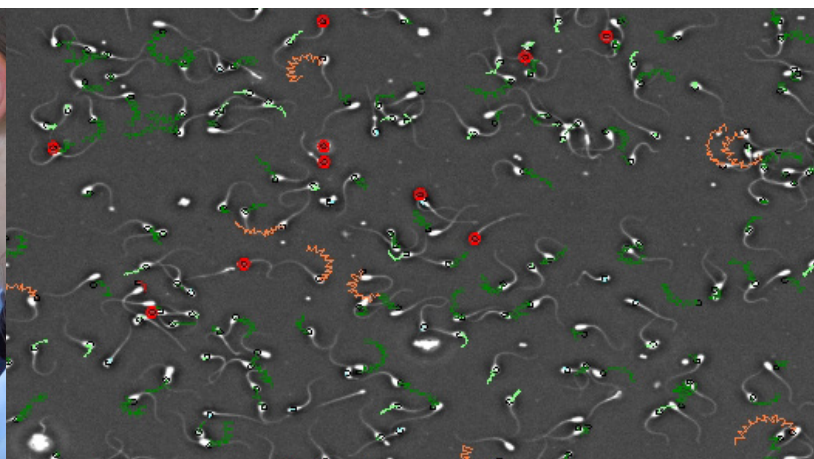


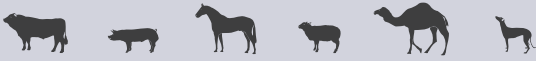


AndroVision®

More than CASA



High-precision automated semen analysis with just a few clicks



Computer-assisted sperm analysis

AndroVision® is a highly precise CASA system for standardized, interactive semen analysis. AndroVision® offers not only classical analyses of motility, concentration, and morphology, but also various fluorescence-based assessments of sperm functionality (optional software modules).

In addition to the basic system with PC and accessories, two optional hardware configurations are available. The portable AndroVision® offers unparalleled convenience for field use. The hardware configuration with touchscreen and barcode scanner requires no keyboard or mouse and eliminates errors through barcode-based donor selection.

| | |
|--|------------|
| AndroVision® software | |
| with PC and accessories [front page] | 12500/0000 |
| with touchscreen and barcode scanner [1] | 12500/0001 |
| with laptop and accessories [2] | 12500/0010 |

↳ Accessories

| | |
|------------------------------------|------------|
| Transport case for accessories [3] | 12500/9100 |
| Transport case for microscope [4] | 12007/0312 |



AndroVision® with touchscreen and barcode scanner



Portable AndroVision® with laptop

★ Product features

- Extremely easy to use: only 3 mouse clicks from start to result
- Real time analysis of live images and video files
- Very high sperm count per field possible
- Analysis of up to 4 fields in 20 seconds
- Highly efficient particle filter for accurate sperm differentiation
- Lightmeter for illumination control
- Analysis profiles for many species
- Flexible display of results
- Adjustable analysis parameters and user-created profiles
- Fluorescence-based analysis of sperm functionality (optional)
- Database of analysis results, including AVI video files
- Data export to MS Excel and other programs
- Customized analysis reports with photos
- Languages: English, German, Spanish, Chinese, Portuguese, Russian, French
- Network-compatible
- Can be integrated into Prism10 lab management software



more
information



Related products

Microscopes

AndroVision® can be combined with a series of microscopes, preferably Zeiss Axiolab and AxioScope or Olympus CX43 and BX series. Each microscope requires a negative phase contrast objective and a heated stage. The software modules Viability, Acrosome Integrity, Mitochondria Activity and DNA Integrity require fluorescence equipment. [1]



Camera

This camera combines state-of-the-art technology and interface standards with advanced firmware features. It provides AndroVision® with a very large analysis area per field and can therefore evaluate up to 1000 sperm per field. CASA analysis is quick, reliable and extremely precise.

AndroVision® color camera, high speed and high resolution [2] [12500/4400](#)



ScanStage

The automated microscope stage has an integrated heating system and can be connected to a variety of microscopes. Analysis points within a counting chamber are automatically approached always using the same path of the microscope stage. This shortens the analysis time and reduces the variability of measurements. The ScanStage can also be used with slide and cover glass.

ScanStage with heating system and keypad [3] [12048/0031](#)

Controller HTi 200 [4] [12057/0200](#)



Autofocus camera

This camera adds fully automatic focusing and digital light control to the AndroVision® system, ensuring consistently high image quality for every user and every analysis. It quickly and precisely focuses on sperm samples without manual adjustment, minimizing a major challenge of CASA systems and improving standardization within and between analyses.

AndroVision® autofocus camera [5] [12500/4500](#)





Software modules

AutoMorph



Automated recognition of proximal and distal plasma droplets as well as bent tails of porcine and bovine semen. AutoMorph is integrated in the analysis of motility and concentration and is measured simultaneously. The semen sample should be diluted in clear extender. Plasma droplets are symptoms of a defective sperm maturation, which can be attributed to various causes such as stress or disease.

Module AutoMorph [1] 12500/1000

Morphology and Morphometry

Identifies sperm of stained and fixed samples and measures length and width of the sperm head, head shape and midpiece asymmetry of each single sperm cell (acc. to Kruger). Results can be classified into a large range of morphological abnormalities.

Module Morphology & Morphometry [2] 12500/1300

Quality Control

Analysis of samples post thaw and in holding. Link to native ejaculate analysis. Possibility to analyze samples during production: samples of one ejaculate can be analyzed more than once and can be compared with the native ejaculate values.

Module Quality Control [3] 12500/1200

Dose Calculation

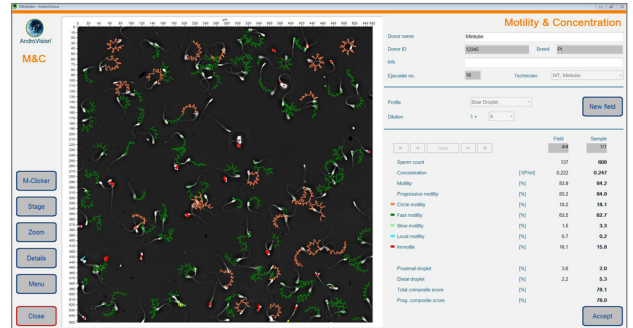
Automatic calculation of the number of doses that can be prepared from an ejaculate and the amount of extender to add to the ejaculate.

Module Dose Calculation 12500/1100

Lab Software Link

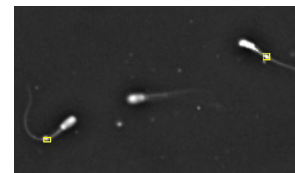
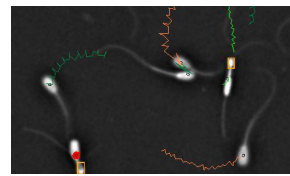
Link of AndroVision® with lab software (e.g., Prism10).

Module Lab Software Link 12500/1910



1

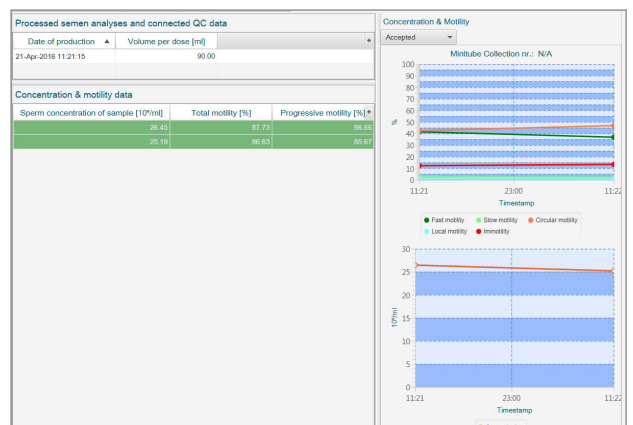
| | | | |
|-------------------------|-----|------|------|
| Proximal droplet | [%] | 6.5 | 5.6 |
| Distal droplet | [%] | 2.8 | 2.5 |
| Bent tail | [%] | 6.5 | 5.0 |
| Total Automorph defects | [%] | 15.8 | 13.1 |



2



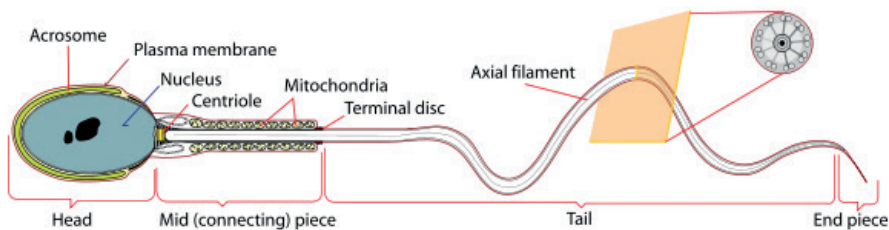
3



Fluorescence analyses

How do fluorescence analyses work?

Fluorescent stains dye specific structures of the sperm, depending on their integrity and functional status. The stains are activated by the light of an individual wavelength. The dyed parts of the sperm then emit light of a certain wavelength/color. These different colors are detected and evaluated by the AndroVision® software. Due to the high speed of analysis, several hundred sperm can be analyzed in a very short time.



The Minitube CASA system guarantees an accurate sperm cell analysis. It is easy to use and helps to speed up the workflow process and to improve our product quality.

Zen-Noh Livestock, East Japan Breeding Farm & AI Center, Japan



Viability

This module provides you with an automatic count of the percentage of membrane intact sperm, based on a double fluorescence assay with Hoechst 33342/PI or SYBR14/PI.

The stain Hoechst 33342 permeates cell membranes and binds specifically to the DNA. All sperm are marked blue. The PI stain (Propidium Iodide) only permeates damaged membranes. It overrides the blue Hoechst stain. Sperm with damaged membranes are marked red/violet. On this basis, AndroVision® determines the percentage of sperm with damaged or intact membranes.

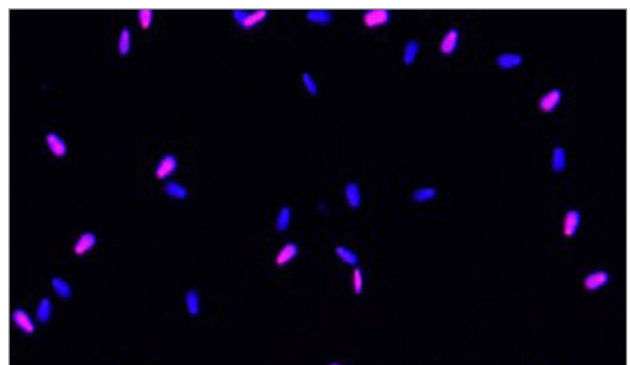
When the dye SYBR14/PI is used, all sperm cells with intact membranes are marked green. Sperm with damaged membranes are marked red by the permeating PI dye, which overlays the green color.

Viability: Why analyze?

The plasma membrane encases the sperm completely. One of its main functions is the delineation towards outside and the selection of molecules to pass from outside to inside. A defect in the plasma membrane can easily lead to the death of the sperm.

Viability analysis is mainly used for the quality control of holding samples of fresh semen or thawed samples of frozen semen. The viability test can help to detect fertility problems of individual donor animals or to identify ejaculates of poor quality before semen delivery instead of being confronted with fertility deficiencies later.

| | |
|---|------------|
| Module Viability | 12500/1400 |
| Stain-kit Hoechst 33342/PI Membrane Integrity (Viability), for up to 100 assays | 15407/0009 |
| Stain-kit SYBR14/PI Membrane Integrity (Viability), for up to 100 assays | 15407/0001 |



Automatic detection of sperm with damaged plasma membrane (marked red/violet) using double fluorescence staining (H33342/PI)



DNA Integrity

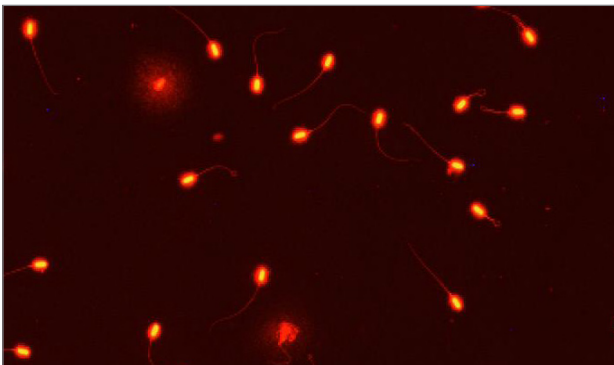
This module provides you with an automatic count of the percentage of sperm with defective DNA, based on halo-technique combined with fluorescent staining.

The halo-technique distinguishes intact from defective sperm cells. If the DNA of a sperm cell is defective, a halo forms around its head. The halo effect becomes visible when the sample is stained with Fluored® and exposed to fluorescent light. In this way, the percentage of sperm cells with fragmented DNA in an ejaculate or sample can be determined.

DNA Integrity: Why analyze?

The success of insemination and embryo development is highly dependent on the integrity of the DNA in the sperm. Consequently, the DNA structure can be used to indicate the fertility potential of a certain breeding animal or to explain sub-fertility rates.

| | |
|---|------------|
| Module DNA Integrity | 12500/1800 |
| Stain-kit AndroVision® DNA Integrity, for up to 40 assays | |
| for bovine semen | 15407/0013 |
| for porcine semen | 15407/0014 |
| for camel semen | 15407/0016 |
| for horse semen | 15407/0017 |
| Fluorescent stain for DNA Integrity Test-kit | 15407/0015 |



Sperm with fragmented DNA exhibiting halo-effect

Acrosome Integrity

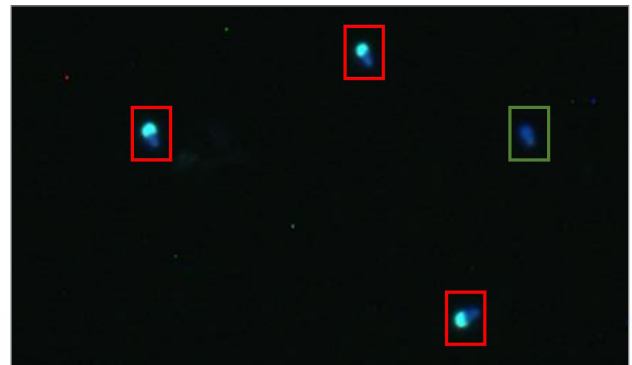
This module provides you with an automatic count of the percentage of sperm with damaged acrosome, based on a double stain fluorescence assay with H33342/FITC-PNA.

All sperm are marked blue (H33342). Damaged acrosomes of these cells are dyed green (FITC-PNA). On this basis, AndroVision® determines the percentage of sperm with damaged or intact acrosomes.

Acrosome Integrity: Why analyze?

The acrosome reaction is a key step for successful insemination. It enables the sperm to penetrate the ovum. Prerequisite: an intact plasma and acrosome membrane. Various stressors during semen processing can cause damage to the acrosome membrane or trigger a premature acrosome reaction. Successful insemination is then no longer possible.

| | |
|---|------------|
| Module Acrosome Integrity | 12500/1600 |
| Stain-kit Hoechst 33342/FITC-PNA Acrosome Integrity, for up to 100 assays | 15407/0011 |
| Stain-kit Hoechst 33342/Cy3-PNA Acrosome Integrity, for up to 100 assays (recommend for stallion semen) | 15407/0008 |



Automatic detection of sperm with defective acrosome (outlined in red) using double fluorescence staining (H33342/FITC-PNA). The coloration of the Stain-kit Hoechst 33342/Cy3-PNA is blue-red instead of blue-green.

Mitochondrial Activity

This module provides you with an automatic count of the percentage of sperm with active mitochondria, based on a double stain fluorescence assay with H33342/Rhodamin123.

All sperm are marked blue (H33342). In addition, the midpiece of the sperm with active mitochondria is marked green (Rhodamin123). On this basis, AndroVision® determines the percentage of sperm with high mitochondrial activity.

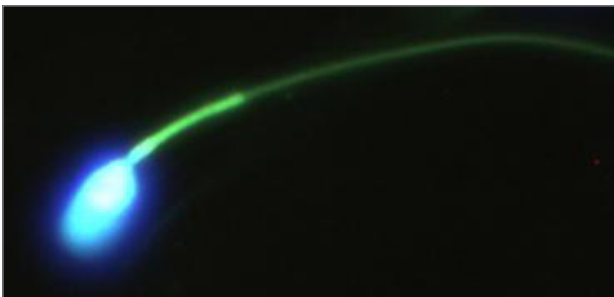
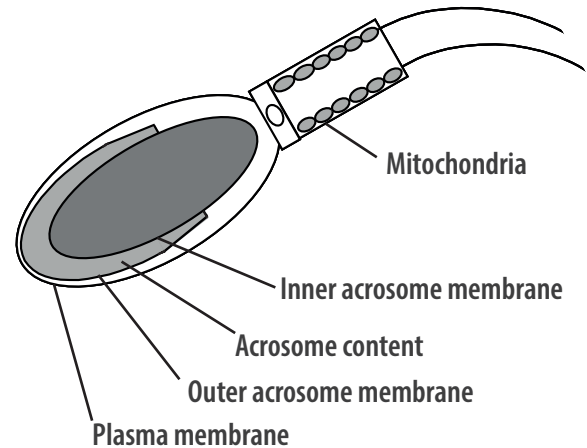
Mitochondrial Activity: Why analyze?

The analysis of the mitochondrial activity is a test to assess the energy metabolism of sperm. The mitochondrial activity is among other things necessary for:

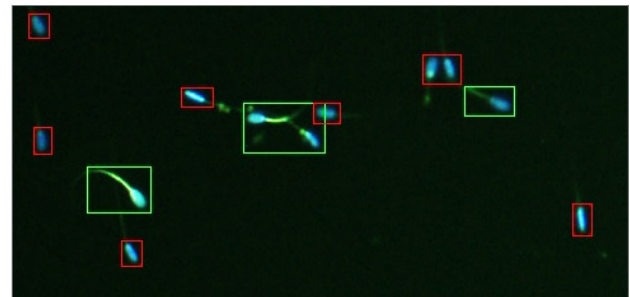
- Maintenance of motility
- Capacitation ability of the sperm
- Maintenance of basic cell functions

Module Mitochondrial Activity 12500/1700

Stain-kit Hoechst 33342/Rhodamin 123 15407/0012
Mitochondria Activity, for up to 100 assays



Sperm with high mitochondrial activity



Automatic detection of sperm with active mitochondria (light green coloring) using double fluorescence staining (H33342/Rhodamin123)



We like the AndroVision® CASA system very much because of the quick and precise motility assessment and the accuracy of sperm detection.

*Inita Bedrite, Sales Manager, JSC
Siguldas Artificial Insemination Station, Latvia*





AndroVision® - Your benefits

+ Accuracy of sperm detection

A very accurate particle filter distinguishes sperm from debris and egg yolk. Agglutinated cells are excluded from evaluation. Concentration measurement has a high repeatability and is very accurate.

+ Precise motility assessment

Various subclasses of mobility like progressive motility are assessed. Sperm cells moving in circles are correctly identified. AndroVision® provides the standard CASA motility parameters and the WHO classification. Freely definable classification levels are available.

+ Quick analysis

AndroVision® allows for an accurate motility and concentration and AutoMorph assessment at production line speed. Approx. 30 ejaculates can be analyzed per hour, including sample preparation.

+ Precision control

The combination of AndroVision® with a high-end microscope ensures that the operator retains full control. The microscope can also be used for other laboratory purposes.

+ Flexibility

AndroVision® can analyze both recorded videos and live sperm samples. Analyzing recorded videos provides great flexibility in semen assessment, both in time and location. AndroVision® can be used with a range of different counting chambers, giving the operator flexibility in the choice of product.

+ Advanced analyses

AndroVision® offers advanced analyses based on extremely sensitive indicators such as Membrane and Acrosome Integrity, Mitochondrial Activity and DNA Integrity. As part of laboratory quality control, these analyses not only allow continuous fertility screening of the animals, but also the early identification of premium and standard breeding animals.



Creates meaningful certificates in seconds with AndroVision®

+ Customized reports

AndroVision® can generate analytic reports of all results as printouts or MS Excel files. Production units and analysis service labs can provide clients with a full quality report on the semen doses. Reports can easily be edited by the user.

+ Consistency

The objective AndroVision® evaluation criteria guarantee the application of identical standards. This makes it possible to compare data from technicians, labs, and production days. Clearly defined threshold values allow the detection of poor-quality semen and prevent processing, freezing or shipping of substandard products.

+ Network compatibility

AndroVision® offers the option of integrating a Network Attached Storage system (NAS). This system provides you with a central database and file management connected to more than one AndroVision®. Data security is high, and the backup-functions are more flexible. Analysis results and videos are available 24 hours a day, independent of the AndroVision® system.