

METRIX

multispecies



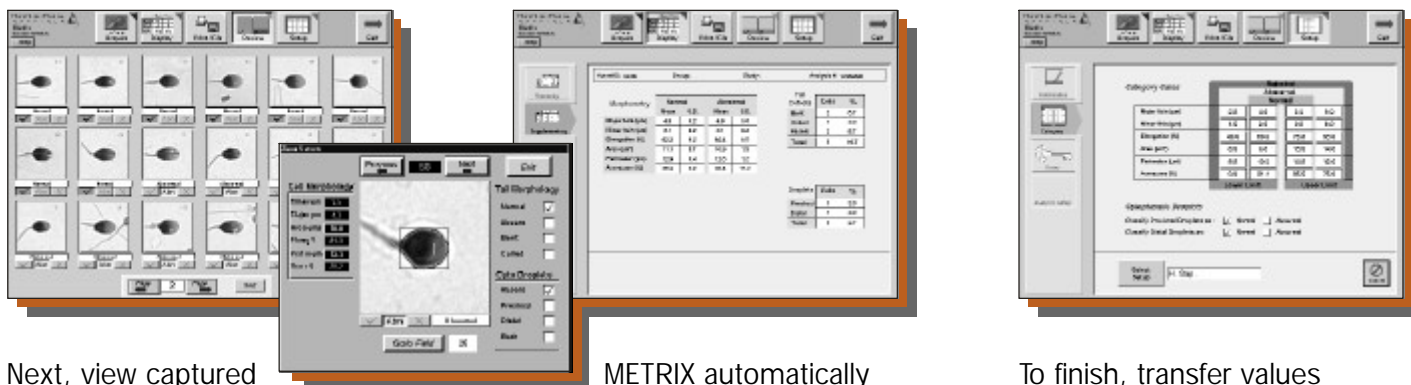
morphology



HAMILTON THORNE RESEARCH

Trained to Think Like You

With its interactive review feature, METRIX adapts to your definitions of abnormal and normal sperm. To train METRIX to think like you, first capture hundreds of sperm cell images to obtain a large sample base.



Next, view captured sperm cell images, zoom on all images and click mouse to classify sperm as normal or abnormal.

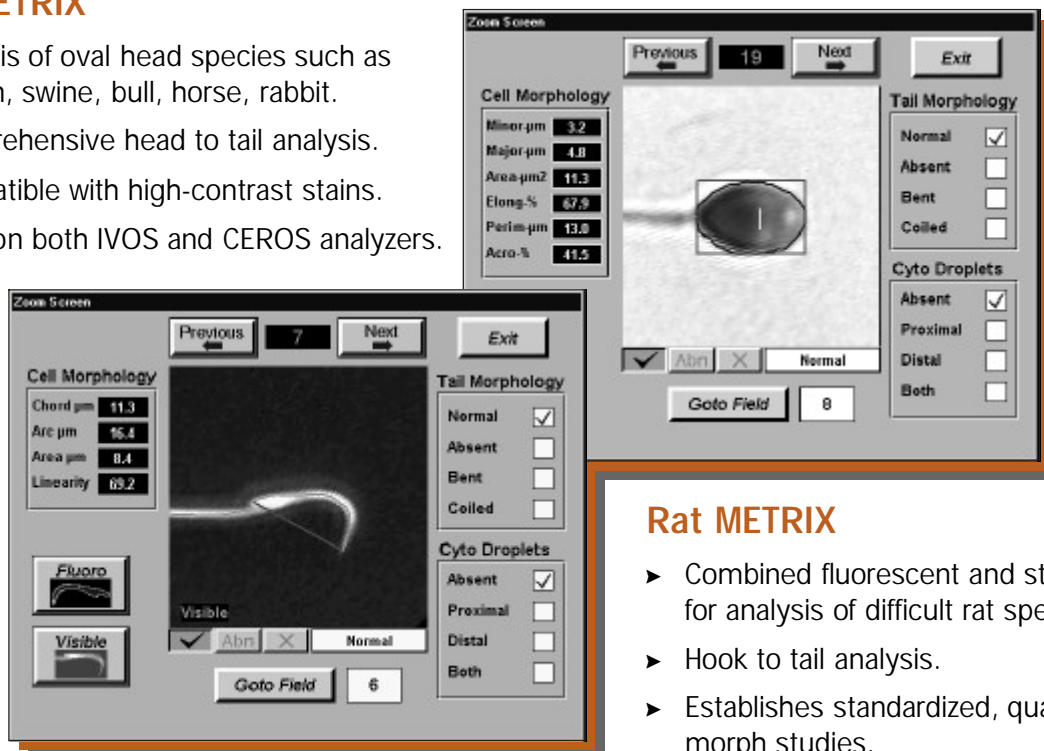
METRIX automatically calculates morphometrics based on your classifications.

To finish, transfer values calculated by METRIX into the Category Setup. METRIX is now ready to analyze - just like you.

Flexible

Oval METRIX

- ▶ Analysis of oval head species such as human, swine, bull, horse, rabbit.
- ▶ Comprehensive head to tail analysis.
- ▶ Compatible with high-contrast stains.
- ▶ Runs on both IVOS and CEROS analyzers.



Rat METRIX

- ▶ Combined fluorescent and standard illumination for analysis of difficult rat sperm shape.
- ▶ Hook to tail analysis.
- ▶ Establishes standardized, quality controlled, morph studies.
- ▶ Runs on any TOX IVOS system.

Powerful Research Tool

- ▶ Actual sperm image and field stored with results.
- ▶ Re-analysis of saved studies.
- ▶ Detailed morphometric values for each individual sperm.
- ▶ Maintain individual species databases for trending and statistical analyses.
- ▶ Complete data output to ASCII file for transfer to network and other programs.

Rat Values

Cell Morphology

Chord μm **11.3**

Arc μm **16.4**

Area μm **8.4**

Linearity **69.1**

Oval Values

Cell Morphology

Minor μm **3.2**

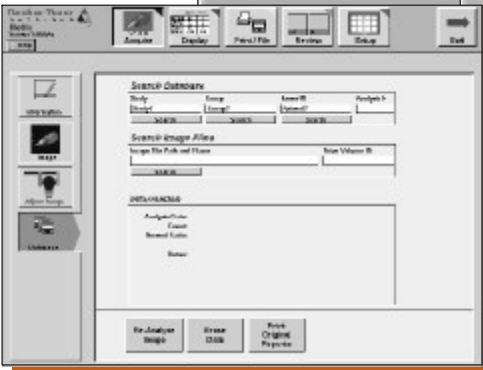
Major μm **4.8**

Area μm^2 **11.3**

Elong-% **67.9**

Perim μm **13.0**

Acro-% **41.5**



QC & Validation

- ▶ Password protection of setups.
- ▶ Reproducible analysis of stored images.
- ▶ Auto-illumination on IVOS.
- ▶ Audit trail to track edited results.
- ▶ Objective, standardized criteria.

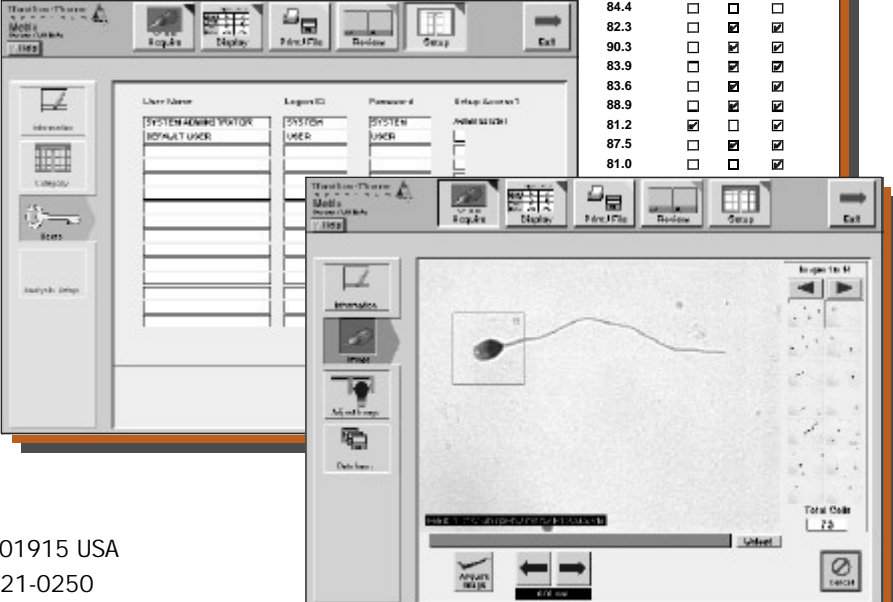
METRIX is an easy-to-use program that analyzes sperm as fast as you can focus and capture images.

For more information on how METRIX can add value to your laboratory process, contact Hamilton Thorne Research or your local distributor today!

Cell Detail Report
J.C.B.StudFarm

Study	Group	Name/ID	AnalysisDate
DQ-30-2-2	Cryo	Bull45662F	Apr.21,1999

Cell ID	MajorAxis (μm)	MinorAxis (μm)	Elongation (%)	Area (μm)	Perimeter (μm)	Acrosome (%)	Edited	Normal	Tail
1	9.2	4.7	51.6	32.1	23.1	83.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	9.0	4.4	49.2	29.9	22.5	83.6	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	9.0	4.4	49.2	30.8	22.8	85.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	9.3	4.9	52.4	34.7	23.8	84.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
						84.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						82.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
						90.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
						83.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
						83.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
						88.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
						81.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						87.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						81.0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



METRIX SPECIFICATIONS

OVAL METRIX

System Requirements:

Windows NT 4.0
IVOS or CEROS, Version 10

Morphometry Measurements:

Head	Tail	Cytoplasmic Droplets
Minor Axis (μm)	Normal	Absent
Major Axis (μm)	Absent	Proximal
Area (μm^2)	Bent	Distal
Elongation (%)	Coiled	Both
Perimeter (μm)		
Acrosome (%)		

Summary Results:

Number and Percentage of Normal, Abnormal and Total.

Supplementary Results:

Morphometry: Mean and Standard Deviation for Normal and Abnormal cells for all morphometry measurements.

Tail Defects: Number and percent of normal, bent, coiled and total.

Droplets: Number and percent of distal, proximal and total.

Data Output:

Print Reports: Summary, Cell Detail, Setup
Database File Options: Analysis Results, Field Images
ASCII File Options: Analysis Results

Setup Options:

Information: 8 customizable fields

Category: Upper and lower limits of all morphometry values for normal and abnormal sperm. Assign droplets as normal or abnormal. (Access may be restricted to administrator only.)

Users: Input one administrator account and up to 14 user accounts with individual Login ID, passwords and permissions to access to setup.

Analysis Setup: (Available to Administrator only) System parameters for Tail Morphology, Auto-Illumination, Image Discrimination and Cytoplasmic Droplets.

Quality Control:

Review Screen: Allows viewing of all normal, abnormal and rejected sperm.

Zoom: Permits validation of cell measurements and classification.

Image Database: Save images and data to file for recall and re-analysis.

Database:

Search database on Study, Group, Name/ID, Analysis Number or Image Name.

RAT METRIX

System Requirements:

Windows NT 4.0
TOX IVOS with IDENT Fluorescence

Morphometry Measurements:

Head	Tail	Cytoplasmic Droplets
Chord Length (μm)	Normal	Absent
Arc Length (μm)	Absent	Proximal
Area (μm^2)	Bent	Distal
Linearity (%)	Coiled	Both

Summary Results:

Number and Percentage of Normal, Abnormal and Total.

Supplementary Results:

Morphometry: Mean and Standard Deviation for Normal and Abnormal cells for all morphometry measurements.

Tail Defects: Number and percent of normal, bent, coiled and total.

Droplets: Number and percent of distal, proximal and total.

Data Output:

Print Reports: Summary, Cell Detail, Setup
Database File Options: Analysis Results, Field Images
ASCII File Options: Analysis Results

Setup Options:

Information: 8 customizable fields

Category: Upper and lower limits of all morphometry values for normal and abnormal sperm. Assign droplets as normal or abnormal. (Access may be restricted to administrator only.)

Users: Input one administrator account and up to 14 user accounts with individual Login ID, passwords and permissions to access to setup.

Analysis Setup: (Available to Administrator only) System parameters for Tail Morphology, Auto-Illumination, Image Discrimination and Cytoplasmic Droplets.

Quality Control:

Review Screen: Allows viewing of all normal, abnormal and rejected sperm.

Zoom: Visible and fluorescent images. Permits validation of cell measurements and classification.

Image Database: Save images and data to file for recall and re-analysis.

Database:

Search database on Study, Group, Name/ID, Analysis Number or Image Name.