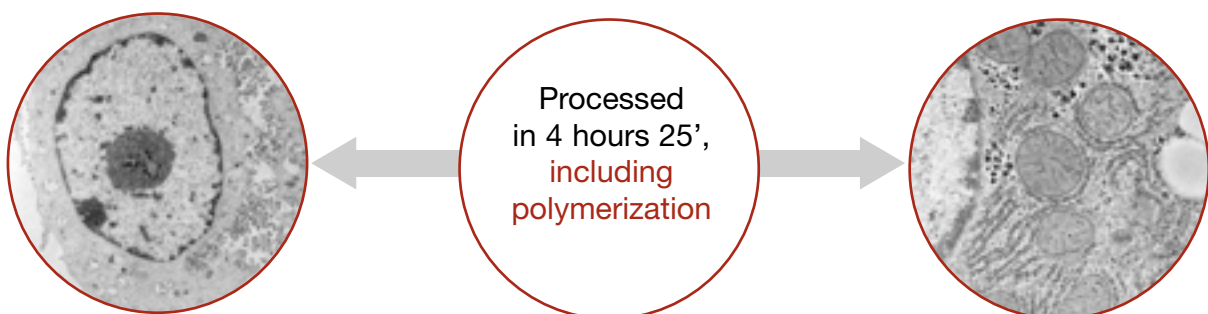


# KOS EM

Rapid processing system for electron microscopy



Same-day diagnosis, even for EM



**MILESTONE**

# KOS EM

## High standards of safety

Unique histomodules for simple, safe and reliable operation.

The design of the KOS EM system allows closed vessel processing from fixation through to 100% resin, thus limiting to a minimum operator's exposure to toxic reagents. To avoid handling of each individual specimen, all specimens are placed in processing cassettes stacked on a stem holding up to 16 specimens.

This allows a simultaneous transfer of all specimens from vial to vial.

### Histomodule for processing-infiltration

#### 1) PTFE cover

Seals all vapors inside the vial to achieve a reflux mode. The pH of each different solution remains constant throughout the procedure.

#### 2) Basket rack

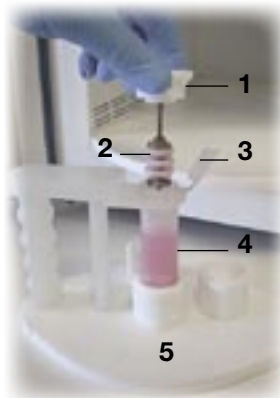
Special microwave transparent baskets, for simultaneous processing of one to 16 specimens.

#### 3) Seal cover

Provides added safety when vessels are not in use.

#### 4) Disposable vials

#### 5) Holder plus 2 rinsing spots



*Histomodule F/H*



*Histomodule P*

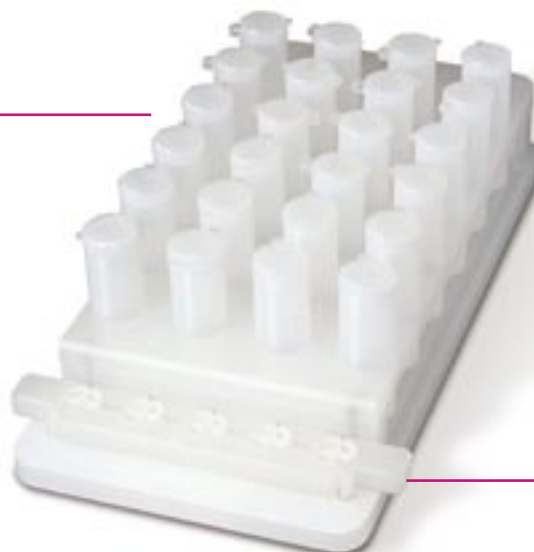
Homogeneous distribution of temperature in all BEEM capsules is assured by immersion in a temperature controlled bath with magnetic stirring.

**Rack** for up to 16 BEEM capsules.



### EM valet module

A polypropylene station to act as an organizer for the correct sequence of reagents. Disposable vials are filled with reagents and placed in progressive order of utilization. Seal covers for vials provide added safety. Each reagent vial is individually fitted with a magnetic stirring bar.



Designed for ease in tissue handling and to avoid mismatches when loading tissue cassettes. After loading, cassettes are kept submersed in reagent to avoid drying of tissues. Cassettes with 4-6-8 segments are available.

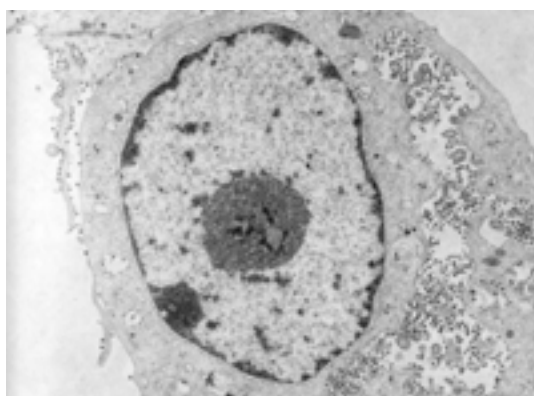
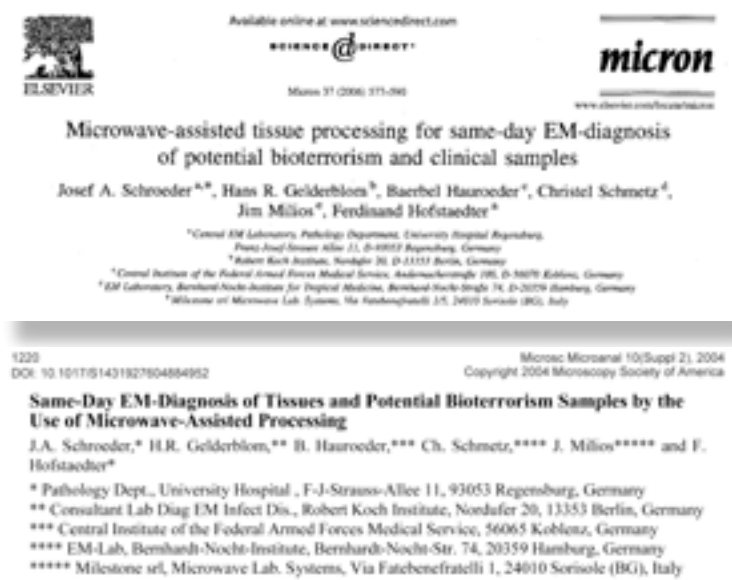
### Loading bay module

# KOS EM

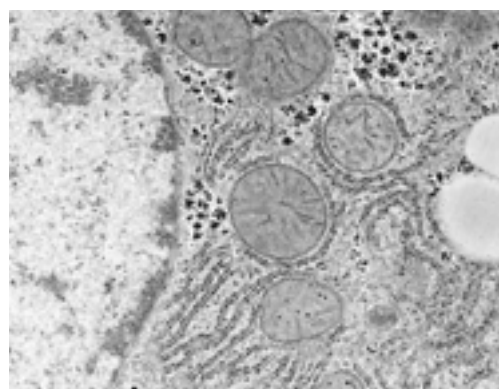
## Same-day diagnosis, even for EM

Pathologists can now complete a diagnostic report based on H&E, Histochem, I.HC, and EM for a timely, same-day definitive diagnosis.

Electron Microscopy (EM) is extensively used in clinical pathology, whenever the support of ultrastructural morphology can offer a more precise diagnostic answer. Over the past decades, EM has not been performed as a major routine, primary diagnostic procedure, due to the lengthy specimen preparation processes required, taking up to two or more days. This contrasts with paraffin tissue processing which, with Milestone's microwave histoprocessors, enables same-day diagnosis. For acceptance of EM as a same-day diagnostic tool, Milestone has developed the KOS EM system, combining state-of-the-art laboratory microwave hardware, user centric software, and dedicated processing modules. The new KOS EM microwave based processor dramatically reduces EM specimen turn-around time from days to approximately four hours.



SARS-infected cell (Orig. Mag.= 1.250 x).



Liver cell fragment (Orig. Mag.= 10.000 x).

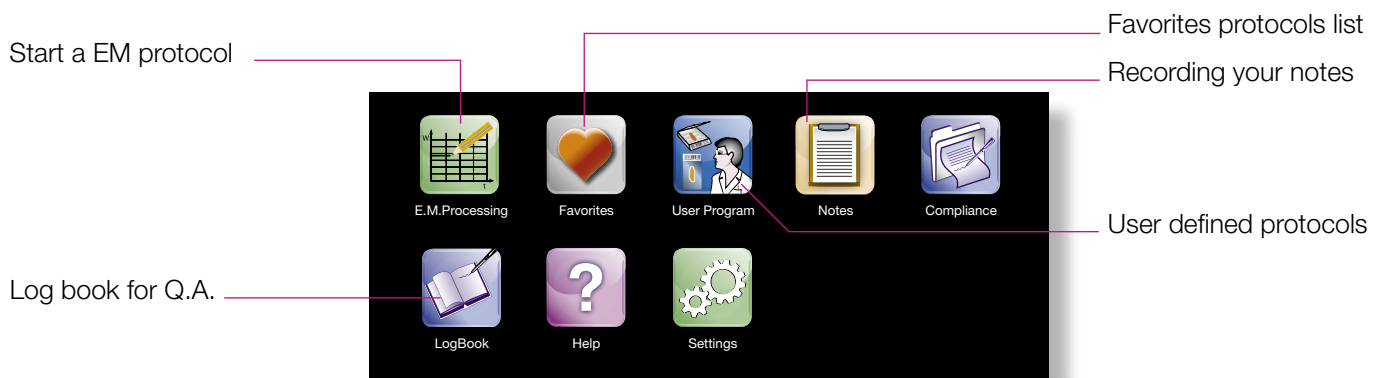
**Time required by Milestone KOS EM processing: 4 hours 25'**

**Time required by conventional processing: 3 days**

# KOS EM

## Smart and fast

- SMART.** User-centric. Icons driven.
- FAST.** Factory prestored, optimized, protocols for rapid, microwave enhanced procedures. No calibrations required. Just plug-in and process.
- RELIABLE.** Sensors controlled for protection of your precious specimens.
- FLEXIBLE.** User defined customized programs can be created and added to a most used favorites list for quick access, for meeting the needs of each laboratory.



## Flexibility and Speed

- Process simultaneously up to 16 specimens, in less than 4 hours.
- Use of conventional EM reagents and consumables.

### Kidney biopsies. Typical protocol.

PROCESSING STEP	CONVENTIONAL CAROUSEL	KOS EM
Primary Fixation	2 to 24 hours	15 min
Buffer Rinses	30 minutes	9 min
Osmium Post-Fixation	1 hour	10 min
Alcohol Rinses	45 minutes	6 min
Dehydration	2 hour	20 min
Resin Infiltration	2 hour 30 minutes	33 min
Resin Polymerization	24 hour external	1 hr 45 min
<b>TOTAL TIME</b>	<b>32.45 hr – 52.45 hr</b>	<b>3 hrs 18 minutes</b>

# KOS EM

Simplicity of operation. User-centric software



- Pre-set programs or user defined protocols.



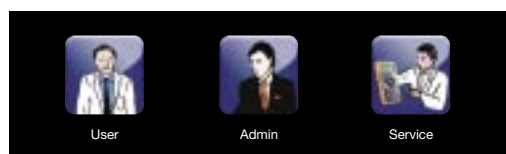
- All steps displayed on screen.
- Documentation for QA, GLP protocols.

## Our priority

Consistent, accurate, documented processing of each and every specimen.

The KOS EM software will turn off microwave power whenever the actual temperature display differs  $\pm 5^{\circ}\text{C}$  from the preset temperature, to avoid damage to specimens.

Specific passwords for user, administrator and service, have been assigned to protect KOS EM programs from improper use.



- **User** – Can only operate unit with preset programs, extend/shorten heating times.
- **Administrator** – Can define all types of programs and settings.
- **Service** – For control and repair unit through built-in diagnostic routines.

# KOS EM

Packed with the latest microwave and sensor technology.  
Controlled by the most advanced, intuitive software.

Advanced technology eliminates the need for "dummy" loads, water loads, cold spots or external water cooler required by other microwave devices. Advanced software control eliminates the need for user-controlled microwave power or wattage settings.



### State-of-the-art safety standards

Microwave power is switched off if:

- 1 Cavity ventilation is compromised
- 2 Solvent in cavity is above threshold
- 3 Humidity in cavity exceeds set value
- 4 Microwave leak is detected



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