KOS
The microwave multifunctional tissue processor you were waiting for.

- Tissue processing
- Decalcification
- Special stains
- Fixation
- Gross hardening
- Antigen retrieval

In a fraction of the time
Rapid multifunctional microwave tissue processor.

A state-of-the-art, multifunctional microwave tissue processor, the KOS is ideally suited as a complement to existing capabilities found in histology laboratories, where the multitasking nature of the instrument can enhance and accelerate many of the typical applications encountered.

SMART. Icons driven.

FAST. Factory prestored optimized, full documented 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, as required for meeting the needs of each user laboratory.

Multifunctional. One Unit. Six Major Applications

FULL COMPLIANCE TO CAP – C.L.S.I. GUIDELINES

The KOS tissue processor will enable the laboratory manager to fulfill the requirements set by the C.L.S.I. and CAP inspection guidelines. The ideal substitute for the “kitchen type” microwave oven utilized in many histology laboratories.

C.L.S.I. (FORMERLY N.C.C.L.S.) GUIDELINES.
REFERENCE: Clinical and Laboratory Standards Institute. Microwave Device use in the Histology Laboratory; Approved Guideline.
Rapid tissue processing

Same day results for all tissue types.

- From 1 to 45 cassettes
- Ideal for transplant centers (Urgent biopsies)
- Safe. No xylene
- No proprietary reagents (Ethanol – isopropanol only)

**HIGH QUALITY SLIDES**
No compromise in regard to morphology and staining expression.
Staining properties of microwave processed specimens are excellent for **H&E** routine staining, **HC, IHC, FISH**.
In a fraction of the time.

Colonic biopsy, microwave processed in 30 minutes. H&E, x 400.
Adenocarcinoma, microwave processed Cytokeratin CAM5.2, x 400.
Breast cells HER2 amplification detection by FISH processed by microwaves. Red-labeled HER2 probe, x 800.
Breast cells HER2 amplification detection by IHC, processed by microwaves. Hematoxylin counterstain, x 400.

**FAST. UNMATCHED TISSUE PROCESSING TIMES.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 minutes</td>
<td>for transplant biopsies including fixation.</td>
</tr>
<tr>
<td>30 minutes</td>
<td>for 1.5 mm biopsies. Add 10 minutes to include fixation.</td>
</tr>
<tr>
<td>80 minutes</td>
<td>for 3 mm biopsies. Add 25 minutes to include fixation.</td>
</tr>
</tbody>
</table>

**EASY. ICONS DRIVEN MENU.**

1) Select thickness
2) Select number of cassettes
3) Select reagents
4) Press **GO**.
5) Press **START**. That’s all

Time left will be shown on the terminal.
Bone Marrow processing

Same-day diagnosis for bone marrow trephine biopsies. Will this help your patient?

DECALCIFICATION + PROCESSING IN LESS THAN 3 HOURS!
An ideal application of the technology and multifunctionality of the KOS. Optimized decalcification and processing protocols are factory stored.

EDTA.
Decalcification: 80 minutes  
Processing: 60 minutes  
Total time: 140 minutes

FORMIC ACID (5%).
Decalcification: 20 minutes  
Processing: 60 minutes  
Total time: 80 minutes

FAST TURN AROUND TIME

<table>
<thead>
<tr>
<th>Task</th>
<th>Minutes</th>
<th>Temp.°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixation in formalin:</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Rinsing in tap water</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Decalcification (formic acid)</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>Rinsing in ethanol</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Tissue processing (Prowave)</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Impregnation in Wax</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td><strong>Total time (minutes)</strong></td>
<td><strong>80</strong></td>
<td></td>
</tr>
</tbody>
</table>

Rapid Bone Decalcification

Up to 45 cassettes.

An excellent application for the KOS. The efficient stirring continuously keeps the bone surface in contact with “fresh” decalifier, positively influencing the equilibrium:

(Bone) $\text{Ca}^{++} \leftrightarrow \text{Ca}^{++}$ (Solution)

Simply select the temperature, the number of cassettes and the decalcifying solution.

Press GO
**Special Stains**

**Up to 76% time saving for histochemical staining protocols**

Several time consuming staining procedures are enhanced by microwave irradiation. Factory stored, optimized, step by step protocols for most common stains for 1-40 slides. Preset or customized programs guarantee operator independent, consistent results.

- No splashing, constant pH conditions
- Magnetic stirring for temperature uniformity along the entire length of the slides

### Stains

<table>
<thead>
<tr>
<th>Stain</th>
<th>Standard (minutes)</th>
<th>KOS (minutes)</th>
<th>Time Saving %</th>
<th>Staining intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS (Fungi)</td>
<td>130</td>
<td>25</td>
<td>76</td>
<td>Increased</td>
</tr>
<tr>
<td>GRIMELIUS (Argyrophil)</td>
<td>65</td>
<td>13</td>
<td>72</td>
<td>Increased</td>
</tr>
<tr>
<td>MASSON TRICROME</td>
<td>120</td>
<td>32</td>
<td>70</td>
<td>Increased</td>
</tr>
<tr>
<td>MASSON FONTANA</td>
<td>80</td>
<td>19</td>
<td>70</td>
<td>Increased</td>
</tr>
<tr>
<td>PAS</td>
<td>50</td>
<td>21</td>
<td>50</td>
<td>Increased</td>
</tr>
<tr>
<td>ALCIAN BLUE</td>
<td>34</td>
<td>13</td>
<td>61</td>
<td>Increased</td>
</tr>
<tr>
<td>ZIEHL NIELSEN</td>
<td>39</td>
<td>11</td>
<td>61</td>
<td>Increased</td>
</tr>
<tr>
<td>ELASTICA (ORCEIN)</td>
<td>30</td>
<td>7</td>
<td>62</td>
<td>Increased</td>
</tr>
<tr>
<td>PEARS IRON STAIN</td>
<td>21</td>
<td>8</td>
<td>46</td>
<td>Increased</td>
</tr>
</tbody>
</table>

^ Note: Times include non-microwave treatment steps

### Time at temperature steps/Antigen retrieval

1. Select temperature
2. Select histomodule
3. Select time
4. Press GO.

User’s programs can be easily set up and stored under “Favorites” for easy operation.
KOS

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

USB port to upload-download data

Touch-screen, 8" color terminal

Removable, stainless steel tray for extra bench space

Connection to fume extraction system

Built-in regenerable charcoal filter

High definition color monitor

IR sensor with laser for temperature control

High definition, pin-hole TV camera, with autofocus

Software controlled stirring device

State-of-the-art safety

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

In your country:

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