



Leica EM AFS2

Automatic Freeze Substitution System

Leica EM FSP

Freeze Substitution Processor

Leica EM AFS2

Freeze Substitution has never been easier...

Freeze Substitution (FS) of specimens in methanol, acetone or any other FS media at low temperatures is THE follow-on procedure to high pressure freezing and other cryo fixation methods.

Progressive Lowering of Temperature (PLT) allows substitution and resin infiltration of chemically fixed specimens.

Finally, the sample is polymerized under UV light in the EM AFS2 and can be cut and immuno labelled.



FS chamber with new cryotube insert



LED UV lamp

The Leica EM AFS2 provides all the features for ...

Perfect results:

- Reproducible
- Excellent specimen visibility with
 - Internal LED illumination
 - Stereomicroscope (optional)
- -140 °C to +70°C working range
- "Deep Freeze" allows sample transfer at temperatures below -140 °C
- Transfer function "TF" excludes humidity and oxygen
- Fast UV polymerization with LED UV lamp

Flexibility

- Any choice of substitution system, e.g.
 - Substitution Capsule and Flat Embedding System
 - New Microtube Embedding System EM AFS2
 - Sapphire Disk FS System
- Trolley for mobility

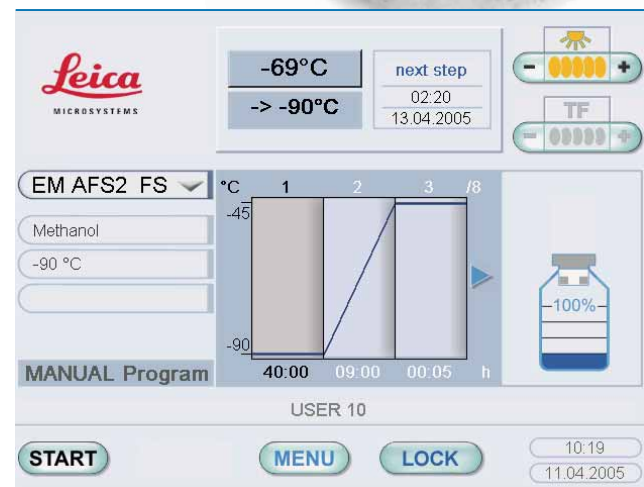
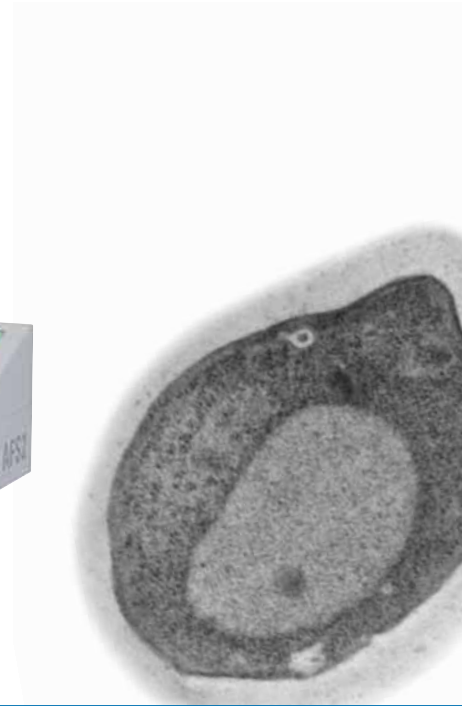
Ease of use

- Intuitive programming
 - 10 users
 - 99 programs each
 - 99 program steps each, 0 to 99 hrs 59 mins
 - graphic display of substitution protocol
 - menu prompts
- Mouse controlled color screen
- Memory stick to transfer programs
- Log file download on memory stick

Safety and convenience

- Operator safety due to fume exhaust system
- 35 l Dewar
- LN₂ filling from outside specimen chamber
- LN₂ consumption enough for 5 day protocols
- Stainless steel working platform

One System – Many Solutions



Leica EM FSP

The Leica EM FSP (“Freeze Substitution Processor”) is an automatic reagent handling system. Mounted on the Leica EM AFS2, it dispenses reagents for both FS and PLT. It automatically dilutes FS media and resins from 100% reagent containers. An integrated LED UV lamp allows immediate polymerization of the samples.

Automatic process

- One step preparation
- Reduced workload
- Increases reproducibility

Perfect results

- Efficient UV polymerization with built-in LED UV lamp

Flexibility

- FS and PLT
- Choice between Flat Embedding or Flow Through Ring System

Ease of use

- Graphic display of substitution protocol
- “Check” function guides operator for filling reagents
- Log file download on memory stick

Safety and convenience

- Minimizes operator contact with toxic media
- Reduces risk of specimen loss



FS chamber with FSP accessories



Leica EM AFS2 and EM FSP

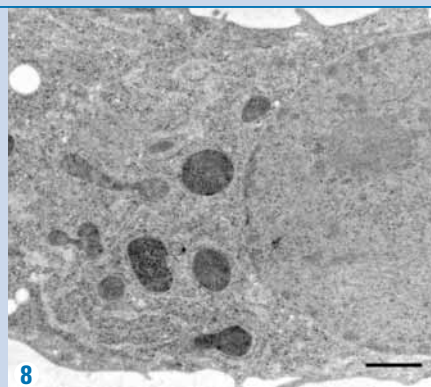
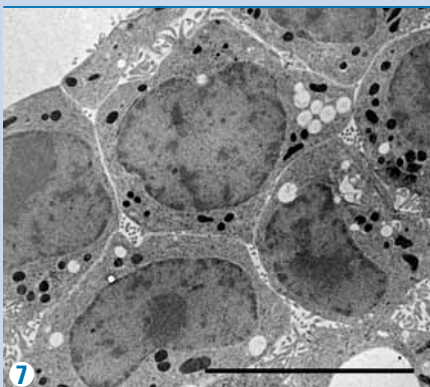
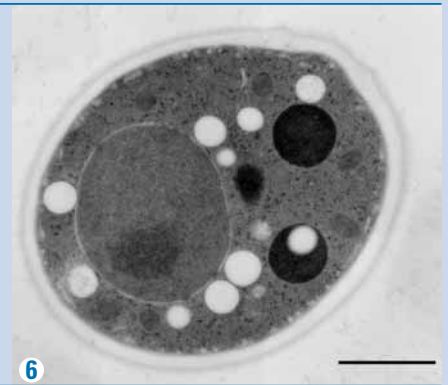
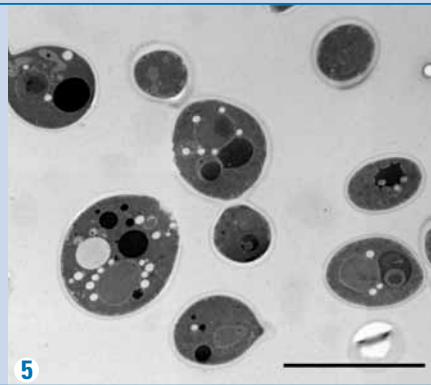
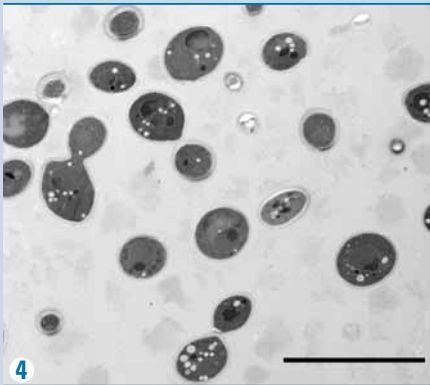
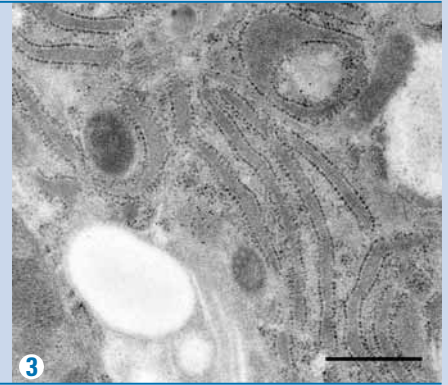
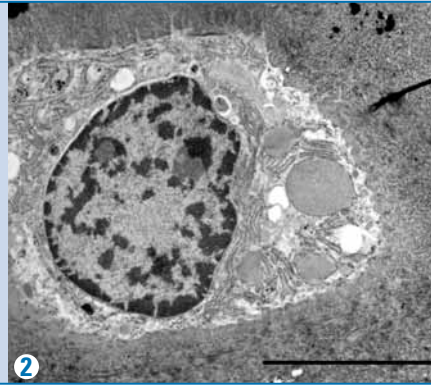
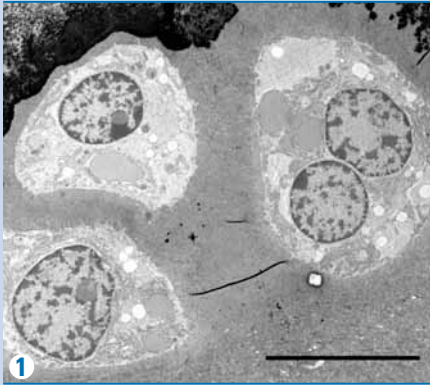


Image 1–3: Mouse, cartilage
Image 4–6: Yeast (*S. cerevisiae*)
Image 7–8: Liver HEPG2 cells

Courtesy of E.G. van Donselaar,
B.M. Humbel, Utrecht University,
The Netherlands;
J.W. Slot, University Medical Center
Utrecht, The Netherlands

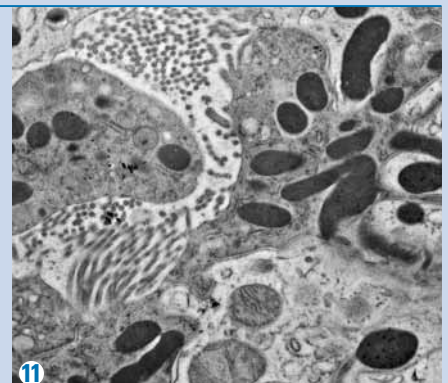
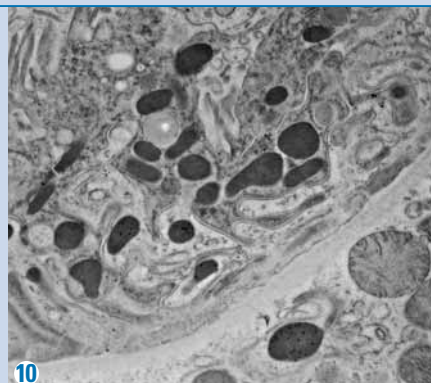
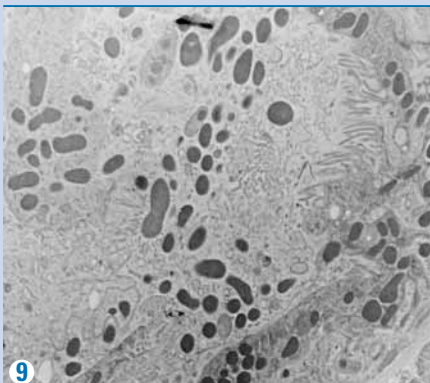


Image 9–11: Rat, kidney

Courtesy of L. Edelmann,
University Homburg, Germany

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