

Microwave Slide Drying for Routine, Special and Immunohistochemical Staining

Lynn Gardner and Christy Ballard,
University of Iowa, FC Blodi Eye Pathology Lab

Microwave slide drying can be an extremely useful tool in the laboratory as it can cut the time it takes to dry slides without compromising the morphology or staining quality.

One important factor is to always use some type of Plus slide. We have found in trials that when using these slides we have not had tissue fall off the slide and we specialize in eye tissue which is notorious for falling off the slide.

We use two different methods of slide drying. One for routine and special staining and another for immunohistochemical staining. The methods are as follows:

MICROWAVE SLIDE DRYING FOR ROUTINE AND SPECIAL STAINING

Purpose: Routine slide drying taking 45 minutes or more can be cut down to 4-6 minutes. This is accomplished by using a microwave instead of a convection oven

Principle: The heating of the microwave acts in a way that allows the water between the tissue and the slide to be removed. This allows the tissue to thoroughly adhere to the slide. In a matter of minutes the slides are ready for staining.

Materials:

Microwave

- We have an Amana Radarange and times and power settings have been figured for each procedure where the microwave is used.
- This microwave is approximately 500 watts.

S/P Brand Hinged Slide Boxes

- These can be obtained from Baxter Scientific Products, Cat. #M6299 (holds 25 slides) or #M6300 (holds 100 slides).
- Other types of slides boxes can be used as long as the hinges are not metal.

Paper or Terri Towels

Procedure:

- Cut slides as specified.
- Place a paper or terri towel in the bottom of an **all plastic** slide box.
Note: DO NOT use any type of box or container that has metal hinges or handle.
- Place the cut slides in the plastic slide box.
- Make sure to separate the slides by at least one or two spaces in the box.
- Place a paper or terri towel over the top of the slides. Close the lid of the slide box **slightly**.
Note: DO NOT latch or completely close the box.
- Place the box in microwave.
- Program the microwave for 1 minute 30 seconds on high power.
- Then turn the slides box a 1/4 turn and microwave for another 1 minute 30 seconds. Repeat this two more times for a total of 6 minutes.
Note: If you only have a few slides to dry or the tissue is tiny you can microwave for 4 minutes instead of 6 minutes. **The object of the drying is not to melt the paraffin but to remove the water from the slide.**
- Check the slides as they come out of the microwave. There should not be any water on the slides.
- Allow the slides to cool thoroughly before staining.
- Place the slides in a staining rack and start deparaffinization.

Note: After the slides have been in the first xylene or xylene substitute for at least 5 minutes, check the slides. If any of the tissue look **white** (as opposed to translucent), take the slides that appear white out of the staining rack as they still contain water. Take the slides that are **translucent** and proceed with deparaffinization and staining. Take the **white** slides you removed and perform the following procedure:

- Take the slides out of the staining rack and carefully dry off the excess xylene.

- Place the slides back in the plastic slide box. Make sure they are separated by some space in the box,
- Place a paper or terri towel over the top of the slides. Close the lid slightly.
- Place the box in the microwave and program the microwave for 1 minute 20 seconds on high power. Then turn 1/4 turn and repeat one time.
- Allow the slides to cool thoroughly.
- Proceed with deparaffinization and staining.

SLIDE DRYING FOR IMMUNOHISTOCHEMICAL STAINING

Even though this method for slide drying may be a little longer than others, we have to this point not had any tissue fall off the slide during staining. Again, we use Plus slides which do seem to make a difference as opposed to using Poly-L-Lysine or Silane according to the tests we ran prior to setting up this procedure.

Purpose: To dry slides in a manner so as not to compromise the antigenicity or morphology of the tissue. To dry the slides so that the tissue will not fall off the slide during these staining procedures

Principle: The heating of the oven and microwave acts in a way that allows the water between the tissue and the slide to be removed. This allows the tissue to thoroughly adhere to the slide. In a matter of minutes the slides are ready for staining.

Materials:

Convention Oven

Microwave

- We have an Amana Radarange and times and power settings have been figured for each procedure where the microwave is used.

S/P Brand Hinged Slide Boxes

- These can be obtained from Baxter Scientific Products, Cat. #M6299 (holds 25 slides) or #M16300 (holds 100 slides).
- Other types of slides boxes can be used as long as the hinges are not metal.

Paper or Terri Towels

Procedure:

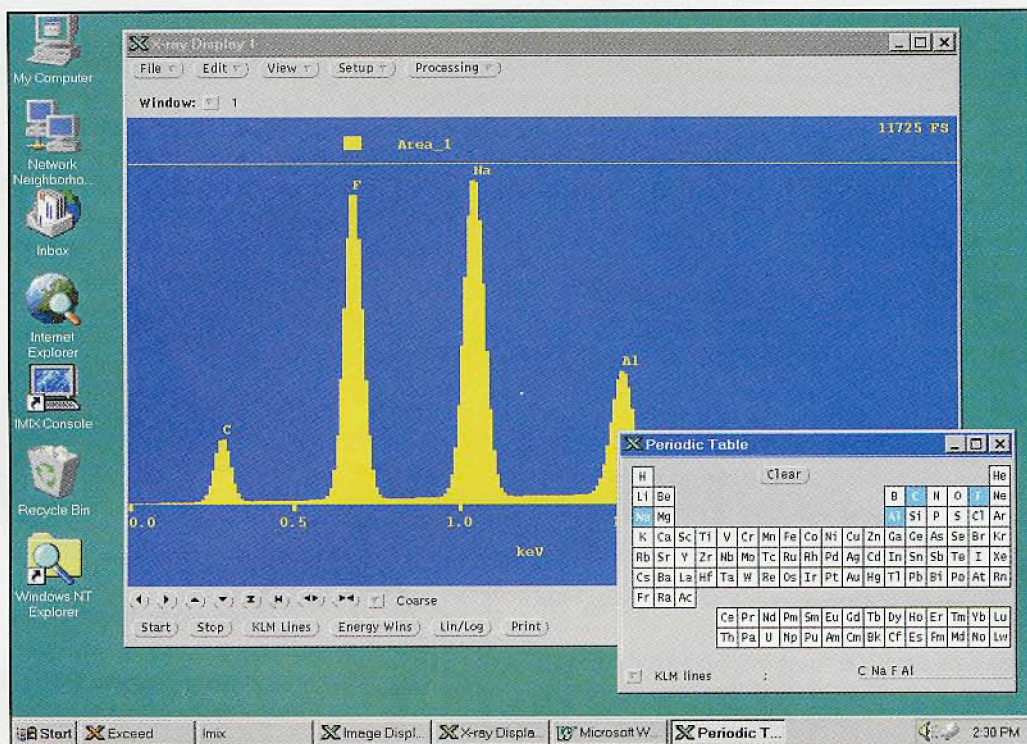
- Cut slides as specified.
- Place slides in a metal rack and place into a 40°C oven overnight.
- The next morning remove the slides from the convection oven and allow to cool to room temperature.
- Place a paper or terri towel in the bottom of an **all plastic** slide box.
Note: DO NOT use any type of box or container that has metal hinges or handles.
- Place the slides in the plastic slide box.
- Make sure to separate the slides by at least one or two spaces in the box.
- Place a paper or terri towel over the top of the slides. Close the lid of the slide box **slightly**.
Note: DO NOT latch or completely close the box.
- Place the box in microwave.
- Program the microwave for 1 minute 30 seconds on high power.
- Then turn the slides box a 1/4 turn and microwave for another 1 minute 30 seconds.
- Check the slides as they come out of the microwave. There should not be any water on the slides.
- Allow the slides to cool thoroughly before staining.
- Place the slides in a staining rack and start deparaffinization.

References:

University of Iowa Hospitals and Clinics, Department of Ophthalmology, FC Blodi Eye Pathology Laboratory, Iowa City, Iowa: The above method is a modification of several published microwave methods. The methods above were written by Lynn Gardner, HT(ASCP) and worked up by Christy Ballard (Histology Technician) and Lynn Gardner, HT(ASCP).

National Society for the Histotechnology Annual Symposium/Convention: Cherly H. Crowder, B.A., HTL (ASCP), Department of Veterinary Pathology, School of Veterinary Medicine, Louisiana State University, Baton Rouge, LA; THE MICROWAVE OVEN AND HISTOTECHNOLOGY STAINING AND BEYOND.

Take Another Look



PGT or IMIX-PC

Award Winning Technology

- Position-Tagged Spectrometry
- Quantitative Image Analysis
- PRISM Digital Detectors...

...115eV Premium Resolution

On the Computer of Your Choice!



PRINCETON GAMMA-TECH 1200 State Road • Princeton, NJ 08540 • Tel: (609) 924-7310 • Fax: (609) 924-1729 • <http://www.pgt.com>

Circle Reader Inquiry #11