OPTIMIZING MOHS FROZEN SECTIONS

(From a Technician’s Point of View)

Jeanie Wade, HT (ASCP)
ASMH Current Past President 2016 - 2018
How do you Optimize a Mohs Frozen Section?

- Grossing
- Embedding
- Complete representative margins
- Stain quality
- Specimen Sections
- Tissue artifacts
Embedding Related Problems

- Hyper Extended Epidermis.
- Missed or Skipped Epidermis
- Misplaced Epidermis
- Gaps in Dermis and Subcutaneous Tissue
- Misplaced Ink Margin
Hyper Extended Epidermis
Missed Epidermis
Misplaced Epidermis, Nick in Blade & Wrinkles
Gap In Deep Margin
(due to deep relax score)

Avantik
QS11
Misplaced Ink Margin
(due to deep relax score)

Sakura (Tissue Tek)
Cryo 3 - 6 microns
Section Artifacts That Make You Want to Scream

(Hopefully not at your Technician)
Artifacts

- Wrinkles and Folds
- Thick / Thin Sectioning
- Poor dehydration
- Air Bubbles
- Incomplete Section
Wrinkles and Folds
Wrinkles and Folds
- Dull blade
- Stage too close to microtome
- Change of micron setting
- Cryostat too warm
- Blade angle adjustment
Poor Dehydration
Leica 1510 S – 6 microns
Air Bubbles
IEC (International Equipment Company) 3 microns
Poorly Aligned Object Holder Resulting In Incomplete Epidermis
Incomplete Deep Margin
Leica CM 1510 S
What can I do to prevent “Incomplete Deep Margins”?
Apply LN$_2$ to a Rolled up 4x4 Piece of Gauze and Apply Directly to Problem Area of Specimen
Quality Representative Section Following Application of LN$_2$

Leica CM1850 4 microns
Quality Representative Section Following Application of LN$_2$

Leica CM1850 – 16 microns
Embedding

- Strategic Relax Cuts & Scores
- Transitioning Epidermis
- Cartilage
RELAX CUTS & SCORES
(Bi-sected Specimen)
Embedding
(Adhering Epidermis Margin)
Epidermis and Medial Margins
Relax Cuts and Scores
Ensure that all margins are embedded flat
Spot Warm / Transition Epidermis
Margins are Correctly Embedded
Cartilage
Apply Pressure as the Specimen Freezes to Acquire a Complete Representative Margin.
Relax Scores Allow Specimen to Transition to An Even Plane
Prevent Loss Of Cartilage During Staining

Model No. XH-2002
For space conscious laboratory
10 ¼" x 7" (26 cm x 18 cm)
Surface holds about 23 slides
Shipping weight: 10 lbs

Lab Scientific
H&E and T-BLUE
STAIN PROTOCOLS

H&E is the stain protocol used in all Mohs Laboratories for all types of tumors.

Some Mohs Surgeons however prefer T-blue over H&E when staining for Basal Cell Carcinoma. This is a matter of personal preference based on training.
**Stain Protocols**

**HEMATOXYLIN AND EOSIN**

1. 95% Alcohol – 20 sec.
3. Hematoxylin (Gill 3) – 20 sec.
4. Hematoxylin (Gill 3) – 20 sec.
9. 95% Alcohol – 20 sec.
11. 95% Alcohol – 20 sec.
12. 100% Alcohol – 20 sec.

**TOULIDINE BLUE**

1. Isopropanol, ACS grade – 20 sec.
2. Toulidine Blue Stain – 20 sec.
5. Toulidine Blue Stain – 20 sec.
The primary goal is to provide a quality representative “complete” margin of the area of the specimen that last came in contact with the patient.
I hope you enjoyed this presentation!
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My Physicians are:
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It is an honor and a privilege to work with talented individuals that strive for quality patient care.

Thank You!
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