**UW Medicine - Pathology**

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Mallory's Phosphotungstic Acid Hematoxylin Method for Demonstration of Muscle Striations and Astrocytes Procedure

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| Adopted Date: 06/14/95Review Date: 09/01/06Revision Date: 04/06/11 |

PURPOSE

To identify the method for performing the special stain of Mallory's Phosphotungstic Acid Hematoxylin method for demonstration of muscle striations and astrocytes.

PROCEDURE

**Fixation:**

10% buffered neutral formalin.

**Sectioning:**

Paraffin sections at 4 microns.

**Solutions:**

(Use Type II de-ionized water for all solution preparation.)

**Phosphotungstic Acid Hematoxylin Solution**

Hematoxylin (C.I.# 75290) 0.4 gm

Phosphotungstic acid 10.0 gm

Distilled water 500.0 ml

Potassium permanganate 0.88 gm

Dissolve the solid ingredients in separate portions of water, the hematoxylin with the aid of heat. When cool, combine. Ripen by addition of potassium permanganate. Stain may be used immediately but the best results are no obtained until the solution is at least two weeks old.

**Staining Procedure:**

Use control slide.

1. De-paraffinize and hydrate slides to 80% alcohol.
2. Place slides in Eosin Y for 30 seconds.
3. Wash in distilled water for 10 seconds.
4. 1% Periodic Acid for 3 minutes
5. Rinse in tap water for 3 minutes .
6. Stain in PTAH solution at 60°C for 30 to 90 minutes, checking every 30 minutes.
7. Remove and allow to cool for 15 minutes.
8. Dehydrate rapidly in 95% and absolute ethyl alcohol.
9. Clear in Xylene and mount.

**Results:**

Muscle blue with cross striations well defined.

Collagen brown-pink

Nuclei blue

Fibrin blue

Mitochondrial and astrocytes blue

Neuronal and glial cell processes blue-purple

REFERENCES

Luna, Lee G.: *Manual of Histologic Staining Methods of the AFIP,* McGraw-Hill Book Co., 1968, pg. 75-76. Modified by Histopathology Laboratory, Harborview Medical Center, Seattle, Wa.

Sheehan, D.C. and Hrapchak, B.B,: *Theory and Practice of Histotechnology,* The C.V. Mosby Co., 1980, pg. 192-193.

Written By: Director Approval:

(Signature and Date) (Signature and Date)

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Histology Supervisor