**UW Medicine - Pathology**

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Mucin Stain Procedure

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| Adopted Date: 09/05/07  Review Date: 09/03/10  Revision Date: 04/08/11 |

PURPOSE

Staining of "epithelial" mucin in tissue sections.

PROCEDURE

**Fixation:**

Any well fixed tissue.

**Technique:**

Cut paraffin sections at 4 microns. Use control slide.

**Solutions:**

*Working:*

**Weigerts Hematoxylin**

Part A 15 ml

Part B 15 ml

Richard Allan Scientific. Ready made.

*Working:*

**Mucicarmine Solution**

Stock Mucicarmine Solution 15 ml

Sigma-Aldrich. Ready made. Keep stock solution refrigerated.

Distiled water 35 mL

Discard working solution at end of day.

**Tartrazine Yellow**

Richard Allan Scientific. Ready made.

**Procedure:**

1. De-paraffinize and hydrate to distilled water.
2. Stain in Weigert's Hematoxylin for 10 minutes.
3. Rinse in tap water for 10 minutes.
4. Place slides in Mucicarmine solution for 60 minutes.
5. Rinse in running tap water 1 minute.
6. Tartrazine Yellow for 3-4 quick dips.
7. Rinse quickly in distilled water.
8. Dehydrate through alcohols quickly.
9. Clear and mount as usual.

**Results:**

Epithelial Mucin Rose to red

Nuclei Blue to Black

Background Yellow

**Principle**:

This is an empirical stain. Aluminum is believed to form a chelation complex with the carmine; the resulting compound has a net positive charge and attaches to the acid groups of mucin.

**Notes**:

1. Carminophilic properties will be obscured if sections are over stained with either hematoxylin or metanil yellow.
2. Anhydrous aluminum chloride should be used under a hood; it reacts with atmospheric moisture and water to give off vapors of hydrogen chloride.
3. The combined alcian blue-PAS technique will establish the presence or absence of mucins with more certainty and also provide more information.
4. Mucin is a term used to describe the intracellular secretions of a variety of cells, and although these secretions appear to be microscopically similar, they differ slightly in composition. The following are properties of mucin: (a) staining with basic dyes, (b) metachromatic, (c) precipitated by acetic acid (except gastric mucin), and (d) soluble in alkaline solutions.

REFERENCES

Sheehan, Dezna C.; Theory and Practices of Histotechnology; p168. Mallony; Pathological Technique p20. A.F.I.P. Manual; p34

Written By: Director Approval:

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Histology Supervisor