**UW Medicine - Pathology**

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Mowry's Colloidal Iron Stain for Acid Mucopolysaccharides with Hyalronidase Digestion (Modified) Procedure

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| Adopted Date: 04/07/11  Review Date:  Revision Date: 04/12/13 |

PURPOSE

To identify the method for performing the special stain of Mowry's Colloidal Iron Stain for acid mucopolysaccharides with hyalronidase digestion.

PROCEDURE

**Fixative:**

10 % buffered neutral formalin or 95% alcohol. Bichromate fixative should be avoided.

**Sections:**

Paraffin at 4 microns.

**Solutions:**

**0.1M Potassium Phosphate, Monobasic**

Potassium Phosphate, monobasic 6.8 gm

Distilled water 500.0 ml

**0.1M Sodium Phosphate, Dibasic**

Sodium phosphate, dibasic 7.1 gm

Distilled water 500.0 ml

**Buffer Solution**

0.1M Potassium Phosphate, monobasic 47.0 ml

0.1M Sodium Phosphate. dibasic 3.0 ml

**Hyaluronidase Digestion Solution**

Testicular hyaluronidase 0.05 gm

Buffer solution 50.0 ml

**29% Ferric Chloride Solution**

Ferric chloride 29.0 gm

Distilled water 100.0 ml

**Stock Muller's Colloidal Iron Oxide Solution**

Bring 500 ml of distilled water to a boil. While the water is still boiling, pour 8.8ml of 29% ferric chloride solution (USP XI) and stir. When the solution has turned dark red, remove from heat and allow to cool. Label: Stock Muller's Colloidal Iron. This reagent is stable for 6 months. In the staining procedure, the stock solution of colloidal iron is diluted just before use as follows:

*Working:*

**Colloidal Iron Solution**

Muller's colloidal iron (stock) 20.0 ml

Distilled water 15.0 ml

Glacial acetic acid 5.0 ml

Mix just before use

**12% Acetic Acid Solution**

Glacial acetic acid 60.0 ml

Distilled water 440.0 ml

**5% Potassium Ferrocyanide Solution**

Potassium ferrocyanide 25.0 gm

Distilled water 500.0 ml

**5% Hydrochloric Acid Solution**

Hydrochloric acid, concentrated 25.0 ml

Distilled water 475.0 ml

**Potassium Ferrocyanide - Hydrochloric Acid Solution**

Potassium ferrocyanide, 5% 50.0 ml

Hydrochloric acid, 5% 50.0 ml

Mix just before use

**Procedure:**

Use control slide

1. Deparaffinize and hydrate to distilled water.
2. Prepare Buffer solution and split amount into 2 equal parts. Add the Testicular Hyaluronidase in one part and place the slides to be digested into this solution and incubate in 37°C oven for one hour. Place the other slides without digestion in Buffer solution only and incubate at 37°C oven for one hour.
3. Wash slides in running water for 5 minutes
4. Rinse in 12% glacial acetic acid solution for 3 minutes.
5. Place slides in Working Colloidal Iron Solution for 1 hour.
6. Rinse in 12% glacial acetic acid solution for four changes, 3 minutes each.
7. Place slides in Hydrochloric acid-Potassium Ferrocyanide solution for 20 minutes.
8. Wash in tap water for 5 minutes.
9. Place slides inVan Gieson's solution for 5 to 7 minutes.
10. Without washing, pass slides quickly to 95% alcohol, absolute alcohol, and clear in xylene, two changes each and mount.

**Results:**

Acidic mucopolysaccharides deep blue

Acidic epithelial mucins deep blue

REFERENCES

Mowry, R.W.: Department of Pathology, University of Alabama medical Center, Birmingham, Alabama.

Written By: Director Approval:

(Signature and Date) (Signature and Date)

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Histology Supervisor