Mucin, Mayer Mucicarmine Stain Kit - Technical Memo

KIT INCLUDES:

<table>
<thead>
<tr>
<th></th>
<th>Part 9151A</th>
<th>Part 9151B</th>
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</thead>
<tbody>
<tr>
<td>Solution A: Ferric Chloride, Acidified</td>
<td>125 ml</td>
<td>250 ml</td>
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<tr>
<td>Solution B: Hematoxylin 1%, Alcoholic</td>
<td>125 ml</td>
<td>250 ml</td>
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<tr>
<td>Solution C: Mucicarmine Stock Stain, Mayer</td>
<td>125 ml</td>
<td>125 ml</td>
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<tr>
<td>Solution D: Metanil Yellow Stain, Aqueous</td>
<td>250 ml</td>
<td>500 ml</td>
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COMPLIMENTARY POSITIVE CONTROL SLIDES: Enclosed with this kit are two complimentary unstained positive control slides to be used for the initial verification of staining techniques and reagents. Verification must be documented by running one Newcomer Supply complimentary positive control slide along with your current positive control slide for the first run. Retain the second complimentary control slide for further troubleshooting, if needed.

Individual stain solutions and additional control slides may be available for purchase under separate part numbers at www.newcomersupply.com.

Additionally Needed:

- Xylene, ACS Part 1445
- Alcohol, Ethyl Denatured, 100% Part 10841
- Alcohol, Ethyl Denatured, 95% Part 10842
- Coplin Jar, Plastic Part 5184 (for microwave modification)

For storage requirements and expiration date refer to individual bottle labels.

APPLICATION:

Newcomer Supply Mucin, Mayer Mucicarmine Stain Kit procedure, with included microwave modification, is used to stain acid epithelial mucin (sialomucin, sulfomucin) and is also useful for the demonstration of the encapsulated yeast Cryptococcus neoformans.

METHOD:

Fixation: Formalin 10%, Phosphate Buffered (Part 1090)

Technique: Paraffin sections cut at 5 microns

Solutions: All solutions are manufactured by Newcomer Supply, Inc.

STAINING PROCEDURE:

1. Deparaffinize sections thoroughly in three changes of xylene, 3 minutes each. Hydrate through two changes each of 100% and 95% ethyl alcohols, 10 dips each. Wash well with distilled water. a. See Procedure Notes #1 and #2.
4. Rinse in running tap water for 10 minutes. a. See Procedure Note #3.
5. Prepare fresh Mayer Mucicarmine Working Solution; combine and mix well. a. Solution C: Mucicarmine Stock Stain, Mayer 10 ml b. Tap Water (do not use distilled water) 30 ml
6. Stain slides in fresh Mayer Mucicarmine Working Solution for 60 minutes or longer if a more intense stain is desired. Microwave Modification: See Procedure Note #4. a. Place slides in a plastic Coplin jar containing fresh Mayer Mucicarmine Working Solution and microwave at 70°C for 10 minutes.
7. Rinse in several changes of tap water.
8. Counterstain in Solution D: Metanil Yellow Stain, Aqueous for 30 seconds to 1 minute.
9. Dehydrate quickly through 95% and 100% ethyl alcohols. Clear in three changes of xylene, 10 dips each; coverslip with compatible mounting medium.

RESULTS:

- Acid epithelial mucin Deep rose to red
- Capsule of Cryptococcus neoformans Deep rose to red
- Nuclei Black
- Other tissue elements Yellow

PROCEDURE NOTES:

- Drain staining rack/slides after each step to prevent solution carry over.
- Do not allow sections to dry out at any point during staining procedure.
- If Weigert Iron Hematoxylin is not completely washed from tissue sections, nuclear and cytoplasmic staining may be compromised.
- The suggested microwave procedure has been tested at Newcomer Supply using an “EB Sciences”, 850 watt microwave oven with temperature probe and agitation tubes. This procedure is reproducible in our laboratory. It is nonetheless a guideline and techniques should be developed for your laboratory which meet the requirements of your situation. Microwave devices should be placed in a fume hood or vented into a fume hood, according to manufacturer’s instructions, to prevent exposure to chemical vapors.
- If using a xylene substitute, closely follow the manufacturer’s recommendations for deparaffinization and clearing steps.

REFERENCES:

- Modifications developed by Newcomer Supply Laboratory.