Van Gieson Stain - Technical Memo

**SOLUTION:**

<table>
<thead>
<tr>
<th>Volume</th>
<th>Part Code</th>
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<tbody>
<tr>
<td>500 ml</td>
<td>Part 1404A</td>
</tr>
<tr>
<td>1 Liter</td>
<td>Part 1404B</td>
</tr>
</tbody>
</table>

Additionally Needed:

- Xylene, ACS: Part 1445
- Alcohol, Ethyl Denatured, 100%: Part 10841
- Alcohol, Ethyl Denatured, 95%: Part 10842

**APPLICATION:**

Newcomer Supply Van Gieson Stain is a connective tissue stain and/or counterstain that combines acid fuchsin and saturated picric acid, with acid fuchsin selectively staining collagen and osteoid tissue red and the picric acid component staining muscle, elastin, fibrin and cytoplasm yellow.

This stain solution is commonly used in elastic stains, referred to as the Verhoeff-Van Gieson (VVG) technique. Other procedures that use Van Gieson Stain include: Bile Stain, Hall's Method and Sulfated Alcian Blue (SAB) Stain or combined with Weigert Iron Hematoxylin in the Van Gieson's Picric Acid-Fuchsin Stain.

**METHOD:**

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

**Technique:** Paraffin sections cut at 5 microns

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

All Newcomer Supply stain procedures are designed to be used with Coplin jars filled to 40 ml following the staining procedure provided below.

**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.
   - See Procedure Notes #1 and #2.
2. Proceed with selected stain procedure:
   - Verhoeff-Van Gieson (VVG) Elastic Stain
   - Bile Stain, Hall’s Method
   - Sulfated Alcian Blue (SAB) Stain
   - Van Gieson’s Picric Acid-Fuchsin Stain
   - Or other appropriate stain procedure
3. Counterstain in Van Gieson Stain for 3 to 5 minutes.
   - See Procedure Note #3.
4. Dehydrate in two changes each of 95% and 100% ethyl alcohol. Clear in three changes of xylene, 10 dips each; coverslip with compatible mounting medium.

**RESULTS:**

<table>
<thead>
<tr>
<th>Tissue Component</th>
<th>Stain Color</th>
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<tbody>
<tr>
<td>Collagen</td>
<td>Red</td>
</tr>
<tr>
<td>Muscle, elastin, fibrin</td>
<td>Yellow</td>
</tr>
<tr>
<td>Other tissue components</td>
<td>Dependent on stain procedure used</td>
</tr>
</tbody>
</table>

**PROCEDURE NOTES:**

1. Drain staining rack/slides after each step to prevent solution carry over.
2. Do not allow sections to dry out at any point during staining procedure.
3. Do not prolong staining in Van Gieson Stain. The picric acid element can act to further differentiate some stains.
4. If using a xylene substitute, closely follow the manufacturer’s recommendations for deparaffinization and clearing steps.

**REFERENCES:**

4. Modifications developed by Newcomer Supply Laboratory.