F-385 MODIFIED MOVAT'S

Fixation: 10% Buffered Neutral Formalin (F-110) or Bouin’s Solution (F-40)

Note: If formalin fixative is used, decerated tissue sections must be mordanted in Bouins Fluid for 1 hour in a 50°C oven. Wash well in running water to remove picric acid deposits.

Sections: 4-6 microns

Procedure:

1. Decerate section and hydrate to distilled water.
2. Stain in Alcian Blue, 1% (F-385-1) for 20 minutes.
3. Dip five times in distilled water.
4. Place in Alkaline Alcohol (F-385-2) in a 56°C oven for 10 minutes.
5. Wash in running tap water for 2 minutes.
6. Stain in Orcein-Verhoeff working solution for 2 hours.
   To prepare Orcein-Verhoeoff working solution:
   Immediately before use, in the following order, combine the solutions below:
   
   - Orcein, 0.2% (F-385-3) 25.0 ml
   - Alcoholic Hematoxylin, 5% (F-385-4) 8.0 ml
   - Ferric Chloride, 10% (F-385-5) 5.0 ml
   - Lugol’s Iodine (F-385-6) 5.0 ml
7. Wash in running tap water for 3 minutes.
8. Stain in Woodstain Scarlet- Acid Fuchsin Working Solution (F-385-7) for 2 1/2 minutes.
9. Place in Acetic Acid, 0.5% (F-385-8) for 30 seconds.
10. Differentiate in Phosphotungstic Acid, 5% (F-385-9) for 5-10 minutes, well differentiated sections demonstrate colorless collagen and blue-green mucopolysaccharides.
11. Rinse in Acetic Acid, 0.5% (F-385-8) for 30 seconds.
12. Three changes of 100% ethyl alcohol, 1 minute each.
13. Stain in Alcoholic Saffron (F-385-10) for 8 minutes.
14. Dehydrate in 100% ethyl alcohol, two changes.
15. Clear in xylene, three changes.

Stain Results:

<table>
<thead>
<tr>
<th>Tissue Type</th>
<th>Stain Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclei</td>
<td>Black</td>
</tr>
<tr>
<td>Cytoplasm</td>
<td>Red</td>
</tr>
<tr>
<td>Elastic Fibers</td>
<td>Purple to Black</td>
</tr>
<tr>
<td>Collagen and Bone</td>
<td>Yellow</td>
</tr>
<tr>
<td>Mucopolysaccharides</td>
<td>Blue-Green</td>
</tr>
<tr>
<td>Muscle</td>
<td>Red</td>
</tr>
</tbody>
</table>

References:

Movat, H.Z.: Demonstration of all Connective Tissue Elements in a Single Section.


Silverman Jeffrey., A Modified Movat Pentachrome Stain.
Histologic, p. 33, 1972