The Quest for the Ultimate Special Stain... Revealed!

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88312**Billing Codes**88313

- Acid Fast
- Helicobacter
- Giemsa
- GMS
- Gram
- Gridley
- Methenamine Silver
- PAS for fungus

- Alcian blue
- Argentaffin
- Argyrophil
- Congo Red
- Elastic
- Iron
- Mucicarmine
- PAS
- Pneumocystis
- Spirochetes
- Fite
- Warthin-Starry
- PAS with diastase for fungus

- PAS with diastase
- Reticulin
- Sudan Black
- Trichrome
- Amyloid (Congo Red)
- Fontana
- Colloidal Iron
- Rhodanin
Common Microbiological Stains

- Fungus
- Bacteria
- Mycobacteria
- Other
Dermatophyte Infection

(GMS and PAS Positive)
Cryptococcosis

Mucicarmine and India Ink Stain*
Gridley Stain
Secondary Syphilis

Warthin-Starry Stain for Spirochetes
Steiner Stain
Bacterial Stains

- Gram (Brown-Brenn, Brown-Hopps)
- Giemsa
Tuberculoid Leprosy
Fite Stain Positive
Mycobacterial Stains

- Acid-Fast (Ziehl-Neelson)
- Fite-Faraco stain
1. Cover smear with carbol fuchsin. Steam over boiling water for 8 minutes. Add additional stain if stain boils off.

2. After slide has cooled decolorize with acid-alcohol for 15 to 20 seconds.

3. Stop decolorization action of acid-rinsing briefly with water.

4. Counterstain with methylene blue for 30 seconds.

5. Rinse briefly with water to remove excess methylene blue.

6. Blot dry with bibulous paper. Examine directly under oil immersion.

Ziehl-Neelsen acid-fast staining procedure
Stasis Dermatitis

Iron Stain
(Perl’s Stain with Prussian Blue Reaction)
Calciphylaxis

Von Kossa/Alizarin Red Positive
Fontana Stain
Dermal Deposits-Pigmented

- Iron (Perl’s, Prussian Blue)
- Alizarin Red/Von Kossa
- Fontana
Soft Tissue Amyloidoma

Congo Red Stain with Apple-Green Birefringence
Anetoderma

VVG Stain for Elastic Fibers
Elastic (Vierhoff-Van Gieson, VVG)
Reticulin
Trichrome (Masson-Trichrome)
Sudan Black*
Oil-Red-O*
Dermal Deposits-Connective Tissue

- Amyloid (Congo Red)
- Trichrome
- Elastic
- Reticulin
- Sudan Black*
Tumid Lupus

Colloidal Iron Stain
<table>
<thead>
<tr>
<th>Stain</th>
<th>Neutral</th>
<th>Acid NS</th>
<th>Acid Stroma</th>
<th>Acid S</th>
<th>Acid S-Stroma</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>AB</td>
<td>-</td>
<td>+ pH2.5</td>
<td>+ pH2.5</td>
<td>+ pH 1</td>
<td>+ pH0.5</td>
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<tr>
<td>Co Fe</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Meta</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
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</tbody>
</table>

Neutral-GI and prostate
Acid NS-Epithelial, hyaluronidase resistant
Acid Stroma-Tissue stroma, hyaluronidase sensitive
Acid Complex Sulfated Epithelial-AdenoCA, hyaluronidase resistant
Acid Complex Sulfated Stroma-Stroma, cartilage, bone
<table>
<thead>
<tr>
<th>Stain</th>
<th>Pros</th>
<th>Cons</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>PAS</td>
<td>Generally positive, most sensitive</td>
<td>Difficult to interpret</td>
<td>Glycogen by diastase digestion</td>
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<tr>
<td>Colloidal Fe</td>
<td>Overall good</td>
<td>Unpredictable staining</td>
<td>Predigest with Hyaluronidase</td>
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<tr>
<td>Alcian Blue</td>
<td>Simple</td>
<td>Bkgnd staining high</td>
<td>May vary pH</td>
</tr>
<tr>
<td>Mucicarmine</td>
<td>Most specific</td>
<td>Poor sensitivity</td>
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</tr>
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</table>
Alcian Blue/PAS
PAS Stain
Mucicarmine
The Ultimate Special Stain!
The Ultimate Special Stain!
The Ultimate Special Stain!

An H&E Deeper Section!