

Alcian Blue/PAS Stain - Technical Memo

SOLUTIONS:	125 ml	250 ml	500 ml	1 Liter	1 Gallon
Acetic Acid, 3% Aqueous Solution		Part 10017A	Part 10017B		
Alcian Blue Stain Solution, 1%, pH 2.5		Part 1003A	Part 1003B		
Periodic Acid 0.5% Aqueous Solution		Part 13308A	Part 13308B		
Schiff Reagent, McManus	Part 1371A		Part 1371B	Part 1371C	Part 1371D
Additionally Needed:					
Alcian Blue/PAS Control Slides	Part 4022				
Xylene, ACS	Part 1445				
Alcohol, Ethyl Denatured, 100%	Part 10841				
Alcohol, Ethyl Denatured, 95%	Part 10842				

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

APPLICATION:

Newcomer Supply Alcian Blue/PAS Stain is used to differentiate between acidic epithelial mucins (sialomucin, sulfomucin) and neutral epithelial mucin and is a means of detecting the overall presence of mucins. Acidic mucins are stained with the Alcian Blue technique while neutral mucins and glycogen are stained by the PAS reaction.

METHOD:

Fixation: 10% Phosphate Buffered Formalin (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:

- 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.
- Place slides in Acetic Acid, 3% Aqueous Solution for 3 minutes.
- Place slides directly into Alcian Blue Stain Solution, 1%, pH 2.5 for 30 minutes.
- Wash slides in gently running tap water for 10 minutes; rinse in distilled water.
- Place slides in Periodic Acid, 0.5% Aqueous Solution for 10 minutes.
- Wash slides in running tap water for 5 minutes; rinse in distilled water.
- Place slides in Schiff Reagent, McManus for 20 minutes.
- Wash in lukewarm tap water for 5-10 minutes.
- 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:

Acid epithelial mucin	Violet
Neutral epithelial mucin	Magenta
Glycogen	Magenta
Stromal (mesenchymal) mucin	Blue

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.
- Newcomer Supply Schiff Reagent, McManus is stored at room temperature. There is no benefit to store this product at 4°C.
- If using a xylene substitute, closely follow the manufacturer's recommendations for deparaffinization and clearing steps.

REFERENCES:

- Bancroft, John D., and Marilyn Gamble. *Theory and Practice of Histological Techniques*. 6th ed. Oxford: Churchill Livingstone Elsevier, 2008. 173-174.
- Carson, Freida. *Histotechnology: A Self-Instructional Text*. 2nd ed. Chicago: ASCP Press, 1997. 91-102, 121-123.
- Modifications developed by Newcomer Supply Laboratory.