

Alcian Blue/PAS Stain Kit - Technical Memo

KIT INCLUDES:

	Part 91022A	Part 91022B
Solution A: Acetic Acid 3%, Aqueous	250 ml	500 ml
Solution B: Alcian Blue Stain 1%, pH 2.5, Aqueous	250 ml	500 ml
Solution C: Periodic Acid 0.5%, Aqueous	250 ml	500 ml
Solution D: Schiff Reagent, McManus	250 ml	500 ml
Solution E: Hematoxylin Stain, Mayer Modified	250 ml	500 ml

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

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

APPLICATION:

Newcomer Supply Alcian Blue/PAS Stain Kit procedure 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: 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 Kits are designed to be used with Coplin jars filled to 40 ml following the staining procedure provided below. Some solutions in the kit may contain extra volumes.

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 Solution A: Acetic Acid 3%, Aqueous for 3 minutes.
- Place slides directly into Solution B: Alcian Blue Stain 1%, pH 2.5 Aqueous for 15 minutes.
- Wash slides in gently running tap water 1-2 minutes; rinse in distilled water.
- Place in Solution C: Periodic Acid 0.5%, Aqueous for 5 minutes.
- Wash in running tap water for 1-2 minutes; rinse in distilled water.
- Place in Solution D: Schiff Reagent, McManus for 10 minutes.
- Wash in lukewarm tap water for 5-10 minutes.
- Stain lightly in Solution E: Hematoxylin Stain, Mayer Modified for 1 minute.
- Rinse in running tap water for 1-2 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
Nuclei	Pale 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 L., and Christa Hladik Cappellano. *Histotechnology: A Self-instructional Text*. 4th ed. Chicago: ASCP Press, 2015. 150-151
- Modifications developed by Newcomer Supply Laboratory.