

Alcian Blue Stain

PRODUCT INFORMATION:

SSP007 100ml Ready to use
 SSP007 250ml Ready to use
 SSP007 500ml Ready to use

PERFORMANCE CHARACTERISTICS:

Staining Interpretation:
Nuclei : Pink to Red
Acid Mucins: Blue
Cytoplasm : Pale Pink

SUMMARY AND EXPLANATION

For laboratory use only

Alcian blue is intended for use in the histological visualization of sulfated and carboxylated acid mucopolysaccharides and sulfated and carboxylated sialomucins (glycoprotein) which can be secreted by various connective and epithelial tissue tumors. The tissue parts that specifically stain by this dye become blue to bluish-green after staining and are called "**Alcianophilic**" and can be combined H&E staining, PAS staining and van Gieson staining methods.

Acid mucosubstances such as glycosaminoglycans in cartilages and other body structures, some types of mucopolysaccharides, sialylated glycocalyx of cells are stained turquoise-blue. Excessive amounts of non-sulfated acidic mucosubstances are seen in mesotheliomas, certain amounts occur normally in blood vessel walls but increase in early lesions of atherosclerosis. Strongly acidic mucosubstances will be stained blue, nuclei will be stained pink to red, and cytoplasm will be stained pale pink.

PRINCIPLE OF THE PROCEDURE

Alcian blue is any member of a family of polyvalent basic dyes that are water soluble. Alcian blue is a large planar phthalocyanine molecule with a copper atom in the center. The molecule also contains four basic isothiuronium groups which carry a positive charge. The positive charge imparted by these groups' results in the attraction of the alcian blue dye molecules to the anionic sites in mucin molecules. The blue color is due to the presence of copper in the molecule. The 3% acetic acid solution (pH 2.5) with Alcian Blue is believed to form salt linkages with the acid groups of acid mucopolysaccharides.

Nuclear fast red solution is an acid dye which is used as nuclear counter stain. It has to be combined with a mordant like aluminium-sulfate. Then the overall ionization is positive and it stains nuclei.

REAGENTS PROVIDED

Kit Contents	Product Code	Storage Conditions	Pack Sizes		
			100ml	250ml	500ml
Alcian Blue Solution (Reagent A)	SS005	RT	100ml	250ml	500ml
Nuclear Fast Red Solution (Reagent B)	SS006	RT	100ml	250ml	500ml

STORAGE AND HANDLING

Storage Recommendations: Store at Room Temperature. When stored at the appropriate conditions, the reagents are stable until expiry. **Do not use the reagents after expiration date provided on the vial.**

To ensure proper reagent delivery and stability, replace the dispenser cap after every use and immediately place the vials at room temperature away from sunlight in an upright position.

SPECIMEN PREPARATION

Recommended positive controls:

Formalin-fixed paraffin-embedded as well as frozen tissue sections of Colon, Appendix, Small Intestine

Sample preparation:

- Frozen Tissue Sections of 3-5 µm thickness
- Formalin-fixed, paraffin-embedded tissue sections of 3-5 µm thickness

PRECAUTIONS

1. Normal precautions exercised in handling laboratory reagents should be followed
2. This product should be used by qualified and trained professional users only
3. The product contains alcohol and is classified as highly-flammable, must be kept away from ignition sources
4. It can cause serious eye and skin irritation. Refer to Material Safety Datasheet for any updated risk, hazard or safety information
5. Dispose of waste observing all local, state, provincial or national regulations
6. Do not use reagents after expiration date
7. Use protective clothing and gloves, while handling reagents
8. Avoid microbial contamination of reagents as it may lead to incorrect results

MATERIALS REQUIRED, BUT NOT PROVIDED

- Xylenes
- Graded alcohols (50%, 70%, 95%, Absolute)
- Tap water
- Distilled water
- DPX Mountant
- Microscopic slides (Positively charged)
- Slide holder
- Cover slips
- Microwave oven
- Coplin jars
- Drying Oven

STAINING PROCEDURE

1. Bake the tissue sections in drying oven at 70°C for 20 minutes.
2. Deparaffinize and rehydrate the tissue sections.
3. Stain with Alcian Blue solution (Reagent A) for 30 minutes.
4. Wash in running tap water for 2 minutes.
5. Rinse in distilled water.
6. Counter stain with Nuclear Fast Red solution (Reagent B) for 5 minutes.
7. Wash in running tap water for 1 minute.
8. Dehydrate using graded alcohols (70%,95%,100%) for 2 minutes each.
9. Clear in xylenes and mount with DPX mountant.

QUALITY CONTROL

The recommended positive tissue control for Alcian Blue stain is tissue sections of Colon, Appendix and Small Intestine.

PERFORMANCE CHARACTERISTICS

Alcian Blue for Acidic Mucosubstances stains Blue color, Nuclei stains Pink to Red color and Cytoplasm stains Pale Pink color.

TROUBLESHOOTING

1. Follow the specific protocol recommendations according to data sheet provided
2. Tissue staining is dependent on the handling and processing of the tissue prior to staining. Improper fixation, tissue processing, freezing, thawing, washing, drying, heating, sectioning or contamination with other tissues or fluids may produce artifacts, reagent trapping or inaccurate results
3. Do not allow the section to dry out during the entire staining process
4. Excessive or incomplete counterstaining may compromise the interpretation of the results
5. If unusual results occur, contact PathnSitu Technical Support at +91-40-2701 5544 or E-mail: techsupport@pathnsitu.com

LIMITATIONS AND WARRANTY

Authorized and skilled personnel only may use the product. The clinical interpretation of any test results should be evaluated within the context of the patient's medical history and other diagnostic test results. A qualified pathologist

must perform the evaluation of the test results. There are no warranties, expressed or implied, which extend beyond the description. PathnSitu is not liable for property damage, personal injury, time or effort on economic loss caused by this product.

BIBLIOGRAPHY

1. Schenk, Eric (January 1981). "Notes on Technique: Note from the Biological Stain Commission a Newly Certified Dye—Alcian Blue 8GX". *Stain Technology*. 56 (2): 129–131.
2. "Alcian Blue". *The I.C.I. Journal*: 59–60. March 1948.
3. Kuo YR et al. Recipient Adipose-Derived Stem Cells Enhance Recipient Cell Engraftment and Prolong Allograft Survival in a Miniature Swine Hind-Limb Model. *Cell Transplant* 26:1418-1427 (2017).

EXPLANATION OF SYMBOLS

 Lot number / Batch number



Expiry

RT- Room Temperature

Laboratory Use Only