

Alcian Blue PAS (ABPAS) Stain Kit

PRODUCT INFORMATION:

REF

SSP008 100ml Ready to use
SSP008 250ml Ready to use
SSP008 500ml Ready to use

PERFORMANCE CHARACTERISTICS:

Staining Interpretation:
Acid Epithelial Mucins : Blue
Neutral Epithelial Mucins : Magenta
Mixed (Acid & Neutral) Mucins : Purple

SUMMARY AND EXPLANATION

For laboratory use only

Alcian Blue PAS (ABPAS) Stain Kit is intended for laboratory use to identify mucins by light microscopy in tissue samples. This is a combined method utilizing the properties of both PAS and Alcian blue methods to demonstrate the full complement of tissue proteoglycans. It is used to differentiate between acidic epithelial mucins (sialomucin, sulfomucin), which are stained with Alcian Blue, and neutral epithelial mucin and glycogen, which are stained by the PAS reaction.

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 colour is due to the presence of copper in the molecule. The 3% acetic acid solution (pH2.5) with alcian blue is believed to form salt linkages with the acid groups of acid mucopolysaccharides.

The periodic acid acts as oxidizing agent which oxidizes compounds having free hydroxyl groups or amino/alkyl amine groups. The tissue sections are first oxidized using periodic acid which oxidizes the vicinal bonds in these sugars, breaking the carbon-carbon bonds resulting in the pair of aldehydes. The oxidation step has to be regulated as to not further oxidize the aldehyde groups.

The aldehyde groups are detected by Schiff's reagent when exposed to it. The Schiff's reagent reacts with the aldehyde groups, forming a colourless, unstable dialdehyde compound, which transforms to an insoluble magenta colored complex by restoration of quinoid chromophoric grouping.

REAGENTS PROVIDED

Kit Contents	Product Code	Storage Conditions	Pack Sizes		
			100ml	250ml	500ml
Alcian Blue Solution (Reagent A)	SS005	RT	100ml	250ml	500ml
Periodic Acid Solution - A (Reagent B)	IPS018	2-8°C	100ml	250ml	500ml
Schiff's Reagent (Reagent C)	SS003	2-8°C	100ml	250ml	500ml
Modified Mayer's Hematoxylin (Reagent D)	PS020	RT	100ml	250ml	500ml

STORAGE AND HANDLING

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

To ensure proper reagent performance, delivery, and stability, replace the dispenser cap after each use and immediately store the vials at the recommended conditions, away from sunlight, in an upright position.

During transport, short-term exposure to 2-8°C does not affect product performance.

DS-SSP008-C

Laboratory Use Only

SPECIMEN PREPARATION

Recommended positive controls: Intestine, Appendix, Colon, Stomach

Sample preparation and fixation: 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. It can cause serious eye and skin irritation. Refer to Material Safety Datasheet for any updated risk, hazard or safety information.
4. Dispose of waste observing all local, state, provincial or national regulations.
5. Do not use reagents after the expiration date
6. Use protective clothing and gloves while handling reagents
7. Avoid contamination of reagents, as it may lead to incorrect results

MATERIALS REQUIRED, BUT NOT PROVIDED

- Xylenes
- Graded alcohols (50%, 70%, 95%, Absolute)
- Bluing solution
- DPX Mountant
- Microscopic slides (Positively charged)
- Slide holder
- Jars
- Cover slips
- Coplin jars
- Distilled water

STAINING PROCEDURE

1. Bake the sections at 70° C for 20 minutes.
2. Deparaffinize and hydrate to distilled water.
3. Incubate the tissue with Alcian Blue Solution (Reagent A), pH 2.5, for 30 minutes.
4. Wash in running tap water for 5 minutes; rinse in distilled water.
5. Incubate the slides with Periodic Acid Solution - A (Reagent B) for 5 minutes.
6. Rinse in distilled water.
7. Add Schiff's Reagent (Reagent C) to the slides in the dark chamber and keep it for 30 minutes.
8. Wash in running tap water for 5 minutes; rinse in distilled water.
9. Add Modified Mayer's Hematoxylin (Reagent D) for 1-2 minutes.
10. Wash in running tap water for 5 minutes.
11. Dehydrate, clear, and cover slip with the DPX Mountant.

QUALITY CONTROL

The recommended positive controls for the Alcian Blue-PAS (ABPAS) Stain Kit are tissue sections of: Intestine, Appendix, Colon, Stomach

PERFORMANCE CHARACTERISTICS

Alcian Blue PAS (ABPAS) Stain Kit stains **Acid Epithelial Mucins** in blue, **Neutral Epithelial Mucins & Glycogen** in **Magenta** colour, and **Mixed (Acid & Neutral) Mucins** in **Purple** colour.

TROUBLESHOOTING

1. Follow the specific protocol recommendations according to the 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. Gently mix all the reagents prior to use.
5. Excessive or incomplete counterstaining may compromise the interpretation of the results
6. If unusual results occur, contact PathnSitu Technical Support at +91-40-2701 5544 or E-mail: techsupport@pathnsitu.com

LIMITATIONS AND WARRANTY

1. This product is intended for use only by authorised, trained, and qualified personnel.
2. A qualified and trained pathologist/personnel must interpret the results of the test.
3. Interpretation of test results must be made in conjunction with relevant background information and additional laboratory findings.
4. Always use the recommended volume and concentration of reagents to ensure complete coverage of the tissue section and to minimise the risk of false-positive or false-negative results.
5. Use appropriate buffers, instruments, consumables, and incubation conditions as recommended to achieve optimal staining performance.
6. It is strongly recommended to include known positive and negative controls when performing the test to ensure the validity of results.
7. The product has been validated on formalin-fixed, paraffin-embedded (FFPE) tissues. The end user must establish performance on other tissue types.
8. Unexpected results may occur in untested tissues due to inherent variability in tissue components.
9. False-positive reactions may occur due to insufficient washing, inappropriate protocol conditions, or other contributing factors.
10. In instances where the staining pattern or localisation differs from the specifications outlined in this datasheet, please get in touch with technical support for guidance.
11. Maintain the product under the recommended storage conditions to preserve reagent stability and performance.
12. Do not use reagents that appear cloudy, discoloured, or show signs of contamination. Discard any components showing signs of deterioration.
13. Alcian blue may also bind to acidic structures such as nucleic acids, mast cell granules, or cartilage matrix, reducing specificity.
14. This product is intended for single-use application only. Once applied to a tissue section, reagents should not be recovered or reused, as this may compromise test integrity and specificity.
15. PathnSitu makes no warranties beyond those expressly stated in the product description.
16. PathnSitu shall not be liable for property damage, personal injury, time or effort, or economic loss arising from the use of this product.
17. Please refer to the complete datasheet for all instructions, precautions, and additional product limitations.
18. For detailed information and specifications on individual components, please refer to Product Material Safety Data Sheet (MSDS)

BIBLIOGRAPHY

1. Bancroft, John D., and Marilyn Gamble. *Theory and Practice of Histological Techniques*. 6th ed. Oxford: Churchill Livingstone Elsevier, 2008. 173-174.
2. Carson, Freida L., and Christa Hladik Cappellano. *Histotechnology: A Self-instructional Text*. 4th ed. Chicago: ASCP Press, 2015. 150-151.
3. Romeis - Mikroskopische Technik, Editors: Mulisch, Maria, Welsch, Ulrich, 2015, Springer-Verlag Berlin Heidelberg.
4. Conn's Biological Stains: A Handbook of Dyes, Stains and Fluorochromes for Use in Biology and Medicine, 10th Edition, (ed. Horobin, R.W. and Kiernan, J.A). Bios, 2002.

EXPLANATION OF SYMBOLS

LOT

Lot number / Batch number



Expiry



Storage limitation

RT

Room Temperature



Date of manufacture

REF

Catalogue number



Manufacturer address