

Periodic Acid- Schiff (PAS) Stain Kit

PRODUCT INFORMATION:

REF

SSP003 100ml Ready to use
SSP003 250ml Ready to use
SSP003 500ml Ready to use

PERFORMANCE CHARACTERISTICS:

Staining Interpretation:

Nuclei : Dark Blue
Mucin : Magenta
Glycogen : Magenta
Fungi : Magenta
Basement membrane : Magenta

SUMMARY AND EXPLANATION

For laboratory use only

Periodic Acid – Schiff (PAS) staining is one of the most commonly performed special staining techniques in the histopathology laboratory used to detect the polysaccharides or molecules with a high percentage of carbohydrate content, such as glycogen and mucosubstances, such as glycoproteins, glycolipids and mucins, in tissues. The results should be verified with appropriate positive and negative controls and interpreted by qualified laboratory personnel.

PRINCIPLE OF THE PROCEDURE

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

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, magnetically colored complex by the restoration of quinoid chromophoric grouping.

REAGENTS PROVIDED

| Kit Contents | Product Code | Storage Conditions | Pack Sizes | | |
|--|--------------|--------------------|------------|-------|-------|
| | | | 100ml | 250ml | 500ml |
| Periodic Acid Solution - A (Reagent A) | IPS018 | 2-8°C | 100ml | 250ml | 500ml |
| Schiff's Reagent (Reagent B) | SS003 | 2-8°C | 100ml | 250ml | 500ml |
| Modified Mayer's Hematoxylin (Reagent C) | 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 every use and immediately place the vials at recommended storage conditions and keep away from sunlight in an upright position.

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

SPECIMEN PREPARATION

Recommended positive controls:

Formalin-Fixed Paraffin-Embedded as well as frozen tissue sections of Liver, Kidney, and Colon

Sample preparation:

- Frozen Tissue Sections of 3-5 µm thickness

- Formalin-fixed, Paraffin-embedded tissue sections of 3-5 µm thickness

PRECAUTIONS

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

MATERIALS REQUIRED. BUT NOT PROVIDED

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

STAINING PROCEDURE

Standard Procedure:

- Bake and deparaffinize the sections.
- Treat with Periodic Acid Solution - A (Reagent A) for 5 minutes.
- Rinse well in distilled water.
- Cover the sections with Schiff's Reagent (Reagent B) in a dark staining chamber for 5-15 minutes.
Note: Schiff's Reagent is photosensitive, and it should be used and stored away from light.
- Wash in running tap water for 5-10 minutes.
- Counterstain with the Modified Mayer's Hematoxylin (Reagent C) for approximately 15 seconds.
- Wash in tap water.
- Dehydrate in increasing concentrations of alcohol (70%, 80%, 95% and 100%) for 2 minutes each.
- Clear in xylene and mount the slides using DPX mountant.

Microwave procedure:

- Bake and deparaffinize the sections.
- Place sections in a Coplin jar containing Periodic Acid Solution - A (Reagent A).
- Microwave at 800 Watts for 10 seconds.
- Rinse well in several changes of distilled water.
- Place sections in Coplin jar containing Schiff's Reagent (Reagent B).
- Microwave at 800 Watts for 15 seconds. Mix the solution using the applicator stick and let it incubate for 1 minute.
- Rinse gently in running tap water for 5 minutes.
- Place sections in Coplin contain Modified Mayer's Hematoxylin (Reagent C).
- Microwave the sections at 800 watts for 10 seconds.
- Rinse in running tap water for 1-2 minutes.
- Dehydrate in increasing concentrations of alcohols (70%, 90%, 100%) for 2 minutes each.
- Clear in xylenes and mount the slides using DPX mountant.

QUALITY CONTROL

The recommended positive tissue controls for Periodic Acid – Schiff (PAS) Stain Kit are tissue sections of Liver, Kidney and Colon.

Laboratory Use Only

PERFORMANCE CHARACTERISTICS

Periodic Acid – Schiff (PAS) Stain Kit positive substances for **mucin, glycogen, fungi, and basement membrane stains in magenta colour and nuclei stains blue in 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 tissues 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. Schiff's reagent is light sensitive. Avoid exposure to bright light, including direct sunlight, as it can cause the chemical to break down.
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 the Product Material Safety Data Sheet (MSDS)

BIBLIOGRAPHY

1. Hotchkiss RD: A microchemical reaction resulting in the staining of polysaccharide structures in fixed tissue preparations. Arch Biochem 16:131, 1948.
2. Sheehan DC, Hrapchak BB: Theory and Practice Histotechnology, 2nd ed. CV Mosby, St. Louis, (MO), pp 52, 164–167, 1980.
3. Culling CFA, Allison RT, Barr WT: Cellular Pathology Technique, 4th ed. Butterworths, pp 216–220, 1985.

4. Davey FR, Nelson DA: Periodic Acid Schiff (PAS) Stain. IN Hematology, 2nd ed. WJ Williams, E Buetler, AJ Erslev, RW Rundles, McGraw-Hill, New York, pp 1630–1632, 1977.
5. Thompson SW: Selected Histochemical and Histopathological Methods, CC Thomas, Springfield, (IL), pp 520–539, and 1966.
6. Leong AS-Y, Milios J: Rapid immunoperoxidase staining of lymphocyte antigens using microwave irradiation. J Pathol 148:183, 1986.
7. Brinn NT: Rapid metallic histologic staining using the microwave oven. J Histotechnol 6:125, 1983.

EXPLANATION OF SYMBOLS



Lot number / Batch number



Expiry



Storage limitation

RT

Room Temperature



Date of manufacture



Catalogue number



Manufacturer address