

## Mucicarmine Stain Kit

### PRODUCT INFORMATION: PERFORMANCE CHARACTERISTICS:

REF		
SSP010	100ml	Staining Interpretation:
SSP010	250ml	Cell Nuclei : Grey/Black
SSP010	500ml	Mucin : Rose Pink
		Other tissue elements : Yellow

### SUMMARY AND EXPLANATION

#### For laboratory use only

Mucicarmine Stain kit is typically used to identify epithelial mucins. These mucins are a family of polysaccharides covalently linked to proteins in epithelial cells. Tumors of epithelial origin can produce excess mucin and its presence is utilized to identify them. This product is not intended for diagnostic or therapeutic use. The results are to be interpreted by qualified personnel in conjunction with other clinical and laboratory findings.

### PRINCIPLE OF THE PROCEDURE

The principle of Mucicarmine staining is based on the presence of aluminum that forms a chelating complex with carmine. This changes the charge of the carmine molecule to a positive charge which allows it to bind to low density acidic substrates such as Mucins. (Positively charged carmine-aluminum complex binds with negatively charged acid Mucins). A nuclear staining solution containing alcoholic hematoxylin and acidified ferric-chloride is used to stain the cell nuclei. Ferric Chloride is a strong oxidizer, so it serves both as a mordant and oxidizer for Weigert's Iron Hematoxylin. It resists decolorization in acidic staining solutions.

### REAGENTS PROVIDED

Kit Contents	Product Code	Storage Conditions	Pack Sizes		
			100ml	250ml	500ml
Carmine Stock Solution (Reagent A)	IPS041	2 - 8° C	25ml	60ml	120ml
Weigert's Iron Hematoxylin Solution -1 (Reagent B)	IPS029	RT	50ml	125ml	250ml
Weigert's Iron Hematoxylin Solution -3 (Reagent C)	IPS042	RT	50ml	125ml	250ml
Metanil Yellow Solution (Reagent D)	IPS043	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 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 recommended storage conditions away from sunlight in an upright position.

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

### SPECIMEN PREPARATION

**Sample preparation and fixation:** Formalin-fixed, Paraffin-embedded human tissue sections of 3- 5 µm thickness on microscopic slides.

### 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 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
- Jars
- Hot air oven
- Cover slips
- Coplin jars
- Distilled water

### PREPARATION OF WORKING SOLUTION

**Mucicarmine working solution:** Dilute Carmine Stock Solution (Reagent A) 1 part to 4 parts of distilled water.

**Weigert's Iron Hematoxylin Working Solution:** Measure equal volume of Weigert's Iron Hematoxylin Solution - 1 (Reagent B) and Weigert's Iron Hematoxylin Solution - 3 (Reagent C) and mix. Prepare the working solution just before staining and discard once it is used.

### STAINING PROCEDURE

#### Protocol (I):

1. Deparaffinize and rehydrate the tissue sections.
2. Stain for 8 minutes in Weigert's Iron Hematoxylin Working solution (Refer to the preparation of working solution above).
3. Wash in tap water for 5 minutes.
4. Stain the sections with Mucicarmine working solution (Refer to the preparation of working solution above) for 30 minutes or longer.
5. Check the control slide under the microscope after 30 minutes. Prolong the incubation time if necessary for intense staining.
6. Rinse quickly in distilled water.
7. Counter stain with Metanil Yellow Solution (Reagent D) for 15 seconds.
8. Rinse quickly in distilled water.
9. Dehydrate quickly through graded alcohols.
10. Clear in 2-3 changes of Xylene and mount with DPX Mountant.

#### Protocol (II): Microwave Protocol

1. Deparaffinize and rehydrate the tissue sections.  
Stain for 8 minutes in Weigert's Hematoxylin Working solution. (Refer to the preparation of working solution above)
2. Wash in tap water for 5 minutes.  
Place the control slides in 40ml of Mucicarmine working solution (Refer to the preparation of working solution above) in a glass coplin jar with lid applied loosely.
3. Microwave on High power for 30 seconds; use caution not to boil.
4. Allow the slides to stand for 5-7 minutes at room temperature.
5. Rinse the sections in distilled water.
6. Counter stain the sections with Metanil Yellow Solution (Reagent D) for 15 seconds.
7. Rinse quickly in distilled water.
8. Dehydrate quickly through graded alcohols.
9. Clear in 2-3 changes of xylene and mount with DPX mountant.

### QUALITY CONTROL

The recommended positive tissue controls for Mucicarmine Stain Kit is Colon, Small Intestine and Appendix.

### PERFORMANCE CHARACTERISTICS

Mucicarmine Stain Kit stains **Cell Nuclei** in **Grey / Black** color, **Mucin** in **Rose Pink** color, and **Other Tissue Elements** in **yellow color**.

### TROUBLESHOOTING

1. Follow the specific protocol recommendations according to data sheet provided
2. Tissue staining depends 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](mailto: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. Mucicarmine working solution is unstable with limited shelf life, prone to precipitation and variable staining if not prepared and stored correctly.
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. Hand book of histologic and special staining techniques of the Armed Forces Institute of Pathology
2. A modification of Southgate's Mucicarmine Method: Calvin G. Payne, B.S, Chesapeake, Virginia 23323

### EXPLANATION OF SYMBOLS



Lot number / Batch number



Expiry



Storage limitation

RT

Room Temperature



Date of manufacture



Catalogue number



Manufacturer address