PAP (Papanicolaou) Stain Kit

(Modified Mayer's Hematoxylin)

PRODUCT INFORMATION:

REF

SSP001	**100ml Ready to use**
SSP001	**250ml Ready to use**
SSP001	**500ml Ready to use**
SSP001	**1L Ready to use**

PERFORMANCE CHARACTERISTICS:

Staining Interpretation:

Nuclei	: Blue
Keratinized cells	: Orange
Superficial cells	: Pink
Erythrocytes	: Dark pink
Parabasal cells	: Greenish blue
Intermediate cells	: Greenish blue
Metaplastic cells	: May be greenish blue and pink

SUMMARY AND EXPLANATION

For *laboratory* use only

The PAP (Papanicolaou) stain is intended for use in the cytological examination of exfoliated or aspirated cells. It is commonly used in the study of the morphology of squamous epithelial cells in cervical smears (Pap tests) and other cytology specimens (e.g., body fluids, FNA samples) to detect cellular abnormalities. 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

This technique uses a number of dyes in three solutions.

- **Hematoxylin:** The basic dye Hematoxylin is the nuclear stain which stains cell nuclei blue. It has the affinity for the negatively charged sulphate groups of chromatin on the DNA in the nuclei.
- **Orange G6 (OG-6) Solution**: It is the first acid counterstain containing two sulphonic groups due to the phosphotungstic acid-orange G compound. This binds to basic proteins, such as prekeratin, present in the cytoplasm of keratinised cells. Thus, the cytoplasm of keratinized cells stains orange color in different intensities.
- **EA 50 Solution**: It is the second acid counter stain with two dyes, Eosin Y and Light Green SF.
  Eosin Y is a fluorescent acidic dye that binds to basic compounds like proteins, and stains them dark red to pink as a result of the action of bromine on fluorescein. It also stains collagen, muscle fibers, and erythrocytes to pink.
  Light Green SF is an atmospheric triarylmethane dye with a C2H5N+ reactive group, possessing an affinity for ribonucleic acid of ribosomes, which are abundantly present in prekeratinized cells. It stains prekeratinized or non-keratinized squamous cells, columnar cells into greenish blue.

REAGENTS PROVIDED

Kit Contents	Product Code	Storage Conditions	Pack Sizes			
			100ml	250ml	500ml	1L
Modified Mayer's Hematoxylin (Reagent A)	PS020	RT	100ml	250ml	500ml	1L
Orange G6 (OG-6) Solution (Reagent B)	SS001	RT	100ml	250ml	500ml	1L
EA50 Solution (Reagent C)	SS002	RT	100ml	250ml	500ml	1L

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 the expiration date provided on the vial.**

To ensure proper regent delivery and stability, replace the dispenser cap after each use and immediately place the vials at room temperature, 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:

- Gynaecological smears
- Any superficial cell smears

Sample preparation and fixation:

- A thin layer of cells smeared on the microscopic glass slides
- Fix the cell smears in 95% alcohol for 20 minutes

PRECAUTIONS

1. Normal precautions carried out 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; it 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 the 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:

- Xylene
- Graded alcohols (50%, 70%, 80%, 95%, Absolute)
- Bluing solution
- DPX Mountant
- Microscopic slides (positively charged)
- Slide holder
- Jars
- Cover slips
- Coplin jars
- Distilled water

STAINING PROCEDURE

1. Place the smears in 95% alcohol for 20 minutes as part of fixation.
2. Rehydrate the slides in graded alcohols - 80%, 70%, 50% and distilled water for 2 minutes each.
3. Apply an adequate amount of Modified Mayer's Hematoxylin (Reagent A) to cover the smear completely for 5 minutes.
4. Rinse the slide in tap water for 2 minutes.
5. Rinse the slide in distilled water for two changes.
6. Place the slide in 95% alcohol for two changes and 2 minutes each.
7. Cover the smear with an adequate amount of Orange G6 (OG-6) Solution (Reagent B) for 3 minutes.
8. Rinse the slide in two changes of 95% alcohol for 30 seconds each.
9. Stain the slide with EA 50 Solution (Reagent C) for 10 minutes.
10. Rinse the slide in 95% alcohol for two changes and 2 minutes each.
11. Quickly dehydrate the slide in 3 changes of absolute alcohol for 30 seconds.
12. Clear the slide in 2-3 changes of xylenes, 20 dips in each.
13. Cover slips with compatible mounting medium (e.g DPX mountant).

QUALITY CONTROL

The recommended positive tissue control for the PAP (Papanicolaou) Stain kit (Modified Mayer's Hematoxylin) is gynaecological or any superficial cell smears.

PERFORMANCE CHARACTERISTICS

PAP (Papanicolaou) Stain kit (Modified Mayer's Hematoxylin) stains **Cell Nuclei** in **Blue** colour, **Keratinized cells** in **Orange** colour, **Superficial cells** in **Pink** colour, **Erythrocytes** in **Dark pink**, **Para basal cells** in **greenish blue, Intermediate cells** in **Greenish blue** and **Metaplastic cells** may stain in **greenish blue and pink colour**.

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Laboratory Use Only

PathnSitu Biotechnologies

Laboratory Use Only

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. Gently mix and filter 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 buccal smear. The end user must establish performance on other smear types.
8. Unexpected results may occur in an untested smear due to inherent variability in smear 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. 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.
14. PathnSitu makes no warranties beyond those expressly stated in the product description.
15. PathnSitu shall not be liable for property damage, personal injury, time or effort, or economic loss arising from the use of this product.
16. Please refer to the complete datasheet for all instructions, precautions, and additional product limitations.
17. For detailed information and specifications on individual components, please refer to the Product Material Safety Data Sheet (MSDS)

BIBLIOGRAPHY

1. Papanicolaou, G.N. Atlas of Exfoliative Cytology, Harvard University Press, Cambridge, 1954.
2. Bancroft, John D., and Marilyn Gamble. Theory and Practice of Histological Techniques. 6th ed. Oxford: Churchill Livingstone Elsevier, 2008.127-128.
3. Carson, Freida L., and Christa Hladik. Histotechnology: A Self-Instructional Text. 3rd edition. Chicago, Ill.: American Society of Clinical Pathologists, 2009. 361-363.

EXPLANATION OF SYMBOLS

LOT	Lot number / Batch number		Expiry
°C	Storage limitation	RT	Room Temperature
	Date of manufacture	REF	Catalogue number
	Manufacturer address		

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