JONES METHENAMINE SILVER (JMS) STAIN

PRODUCT INFORMATION: **PERFORMANCE CHARACTERISTICS**

REF

SSP022 25 Reactions
SSP022 50 Reactions

Staining Interpretation:
Basement membrane: Black
Cell Nuclei : Blue
Cytoplasm : Pink-Orange

SUMMARY AND EXPLANATION

For *Invitro diagnostic* use only
The reagents in this kit are intended for *Invitro diagnostic use* only. The JMS Stain Kit is used as a qualitative histologic stain to demonstrate basement membranes, specifically glomerular basement membranes in the renal Formalin fixed paraffin embedded (FFPE) tissue by light microscopy.

PRINCIPLE OF THE PROCEDURE

The Jones methenamine silver method relies on the production of aldehyde groups from the carbohydrate components of the reticular fibers and basement membranes after their exposure to a periodic acid solution. The released aldehydes then reduce the silver of the methenamine silver complex to visible metallic silver. The gold chloride solution functions to tone the tissue section, and sodium thiosulfate functions to remove excess unreacted silver and gold chloride.

Kit Contents	Product Code	Storage Conditions	Pack Sizes	
			25 Tests	50 tests
Periodic acid 0.5% (Reagent A)	IPS093	2-8°C	25ml	50ml
Methenamine,30% (Reagent B)	IPS079	2-8°C	100ml	200ml
Silver Nitrate 5% (Reagent C)	IPS048	2-8°C	50ml	100ml
Borate 5% (Reagent D)	IPS049	RT	75ml	150ml
Gold Chloride, 0.2% (Reagent E)	IPS050	2-8°C	25ml	50ml
Sodium Thiosulphate solution, 3% (Reagent F)	IPS094	RT	25ml	50ml

STORAGE AND HANDLING

Storage Recommendations: Store at recommended temperatures. 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 regent delivery and stability, replace the dispenser cap after every use and immediately place the vials at recommended temperatures away from sunlight in an upright position.

SPECIMEN PREPARATION

RECOMMENDED POSITIVE CONTROLS:
1. Normal Kidney

SAMPLE PREPARATION AND FIXATION:
- Formalin-fixed, Paraffin-embedded 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. 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 expiration date
6. Use protective clothing and gloves, while handling reagents
7. Avoid microbial contamination of reagents as it may lead to incorrect results

MATERIALS REQUIRED, BUT NOT PROVIDED

- Harris Hematoxylin
- Ammonia water
- 1% Acid alcohol
- Eosin Y
- Xylenes
- Graded alcohols (50%, 70%, 95%, absolute)
- DPX Mountant
- Microscopic slides (positively charged)
- Slide holder
- Jars
- Hot air oven
- Cover slips

REAGENT PREPARATION

Working Methenamine solution:
Prepare working methenamine solution by mixing the reagents in the order below:

- Distilled water ---------- 36ml
- Methenamine (Reagent B) ---------- 4ml
- Silver nitrate (Reagent C) ---------- 2ml
- Borate solution (Reagent D) ---------- 3ml

Note: Do not expose the solution to light. The solution cannot be reused. Discard after use.

STAINING PROCEDURE

1. Deparaffinize and hydrate the slides to distilled water.
2. Incubate the slides in Periodic acid 0.5% (Reagent A) for 15mins for oxidation.
3. Wash in distilled water
4. Place the slides in the working Methenamine solution (Refer to the reagent preparation above) at 70°C for about 20-30 mins in water bath.
   (Note: Check the slides under microscope when the slides appear medium brown every 10mins. Rinse again in hot water and return to hot staining solution. As the staining time approaches the endpoint, check the slides as above, every

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1-2 mins. The entire procedure must be performed quickly to prevent an uneven staining of the tissues.)

5. Rinse well in distilled water
6. Incubate the slides in 0.2% Gold chloride (Reagent E) for 2-3 mins for toning
7. Rinse the slides well in distilled water
8. Incubate the sections with 3% Sodium thiosulphate (Reagent F) for 2 mins
9. Wash in running tap water for 3-5 mins
10. Rinse the slides in distilled water
11. Stain the slides in Harris hematoxylin for 2-3 mins,
12. Rinse the slides in distilled water
13. Differentiate in 1% acid alcohol until sections turn red.
14. Place the slides in ammonia water, 0.3% for 2 mins for bluing.
15. Wash thoroughly in distilled water
16. Counterstain in Eosin Y, 1% solution for 2-3 mins.
17. Quickly dehydrate in graded alcohols.
18. Clear in xylene, three or four changes for 2 mins each
19. Mount with the compatible medium.

QUALITY CONTROL

The recommended positive tissue control for JMS stain is Normal kidney.

PERFORMANCE CHARACTERISTICS

The JMS stain highlights **the basement membrane of Glomeruli in black** color, the **Cell nuclei in blue** color and the **Cytoplasm in Pink-Orange** color

TROUBLESHOOTING

1. Follow the specific protocol recommendations according to the datasheet provided
2. Tissue staining depends on the tissue's handling and processing before staining.
3. 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
4. Do not allow the section to dry out during the entire staining process
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. Authorized and skilled/trained personnel only may use the product.
2. The clinical interpretation of any test results should be evaluated within the context of the patient's medical history and other diagnostic test results.
3. A qualified trained pathologist must perform the evaluation of the test results.
4. The product comes with no warranties beyond the provided description
5. Use appropriate volume/concentration to cover entire tissue sections and optimum conditions to avoid false positive and negative results.
6. Use appropriate/recommended buffer/instruments/all consumables with appropriate incubation timings to obtain optimal results.
7. Always recommend using known positive and negative controls to evaluate the test result.
8. Unexpected reactions may occur in untested tissues due to tissue component variability.
9. False positive results can arise from no stringent washing practices and other contributing factors.
10. In instances where localization differs from the specifications outlined in the datasheet, clinical coordination or prompt technical support is advised.
11. Maintain recommended storage conditions.
12. Refer entire data sheet to know any further limitations about the product.
13. No warranties whether expressed or implied, extend beyond the description.
14. PathnSitu is not liable for property damage, personal injury, time or effort or economic loss caused by this product.

BIBLIOGRAPHY

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- Histochemical staining reactions of the normally Functioning and abnormal kidney. WACHSTEIN, Department of pathology St. catherine's Hospital, Brooklyn, New York
- Role of special stains as a useful complementary tool in the diagnosis of renal diseases: a case series study. Veenaa Venkatesh, Vinuta Malaichamy

EXPLANATION OF SYMBOLS

Lot number / Batch number


Expiry

***In vitro* diagnostic use**

Storage limitation


Date of manufacture

Catalogue number


Manufacturer address


- CE marking

RT- Room temperature

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