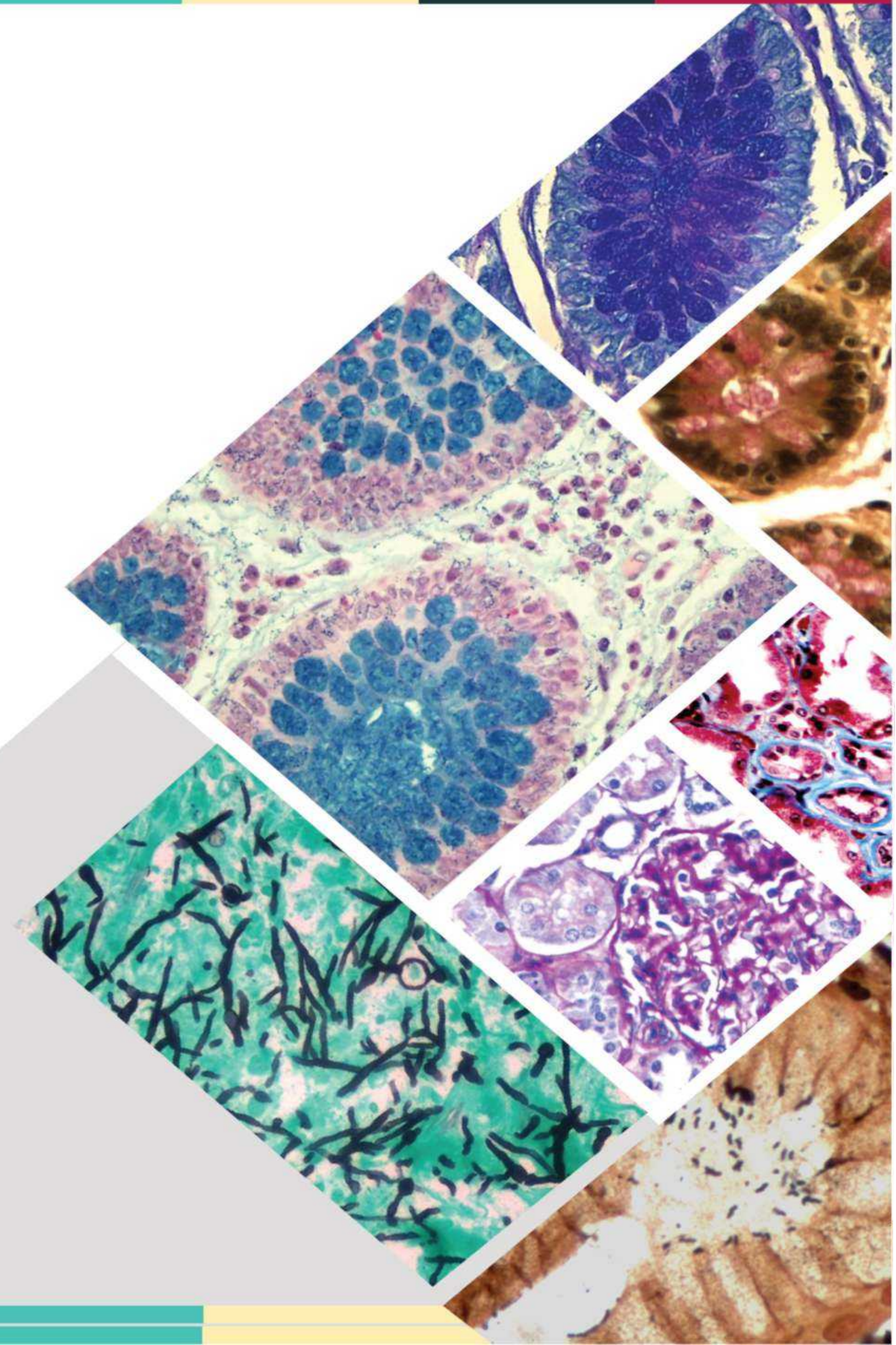


# SPECIAL STAINS



# Contents:

Gomori Methenamine Silver Nitrate (GMS)	1
Alcian Blue	2
Warthin Starry	3
Mucicarmine	4
Papanicolaou (PAP)	5
Periodic Acid Schiff (PAS)	6
Congo Red	7
Masson's trichrome	8
PAS Alcian Blue	9
Reticulin	10
PAS-Diastase	11
Oil Red O	12
Acid Fast Bacteria (Green)	13
Summary	14

# GOMORI METHENAMINE SILVER NITRATE



***Pneumocystis carinii*** - Black

Gomori Methenamine-Silver Nitrate (GMS) is the best known staining for fungal organisms. Fungi are generally relatively large and morphologically diverse, and can occur in tissues in various forms: hyphae, endosporulating spores, budding yeasts, or a combination of these forms. It is intended for use in the histologic visualization of fungi, basement membrane and some opportunistic organisms such as *Pneumocystis carinii*. *Pneumocystis carinii* is an opportunistic pathogen that causes severe pulmonary diseases.

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP011	25 Reactions - Ready to use
SSP011	50 Reactions - Ready to use

**Kit Contents :** Chromic acid (Reagent A), Sodium Metabisulphite (Reagent B), Methenamine (Reagent C), Silver Nitrate (Reagent D), Borax (Reagent E), Gold Chloride (Reagent F), Sodium Thiosulphate (Reagent G), Light Green (Reagent H)

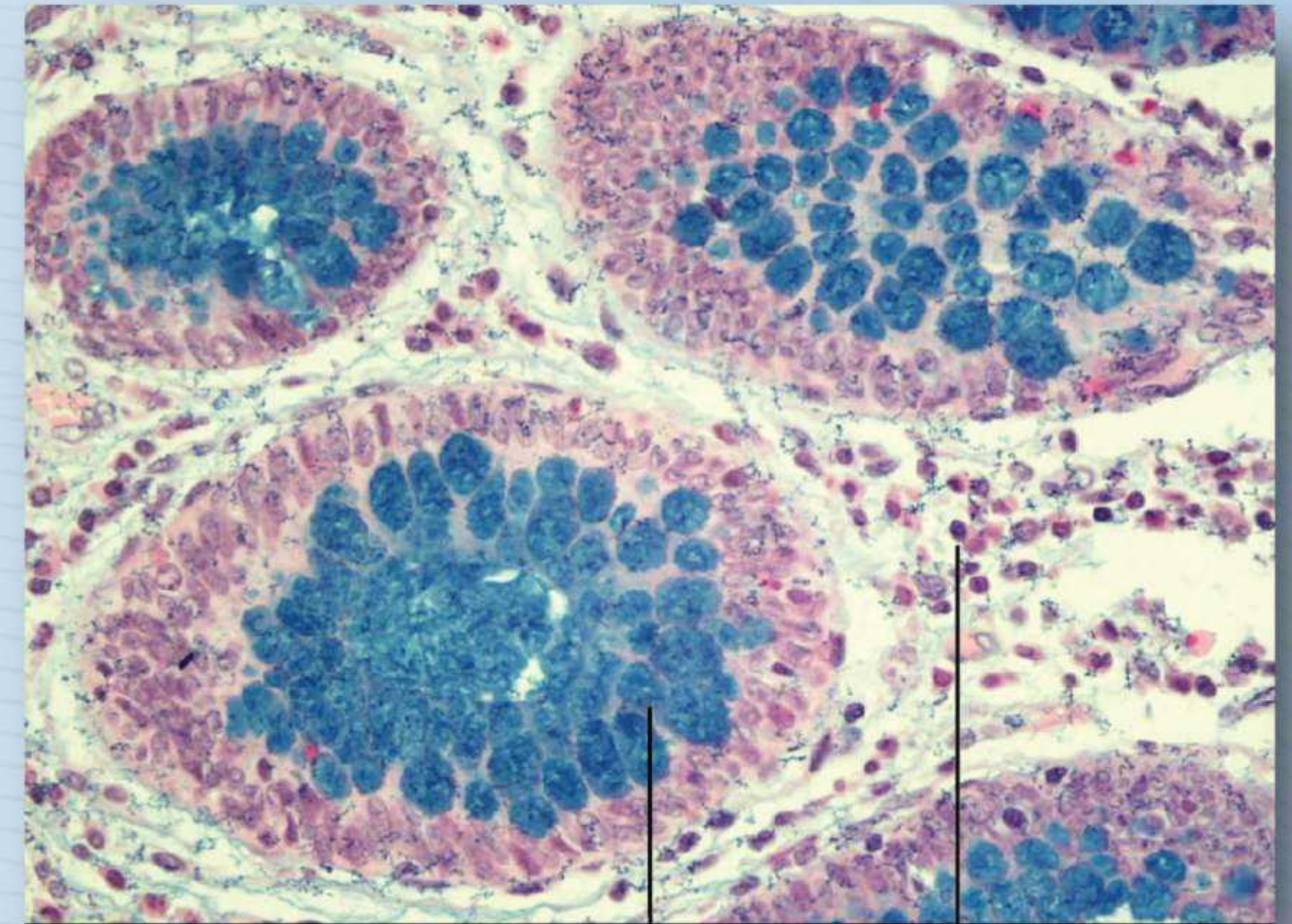
# ALCIAN BLUE

Alcian Blue (pH 2.5) stains acid mucosubstances and acidic mucins is intended for use in the histological visualization of sulfated and carboxylated acid mucopolysaccharides and sulfated and carboxylated sialomucins (glycoproteins). Strongly acidic mucosubstances will be stained blue, nuclei will be stained pink to red, and cytoplasm will be stained pale pink. Alcian blue can be used to quantitate acidic glycans both in microspectrophotometric quantitation in solution or for staining glycoproteins in polyacrylamide gels or on western blots.

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP007	100ml Ready to use
SSP007	250ml Ready to use
SSP007	500ml Ready to use

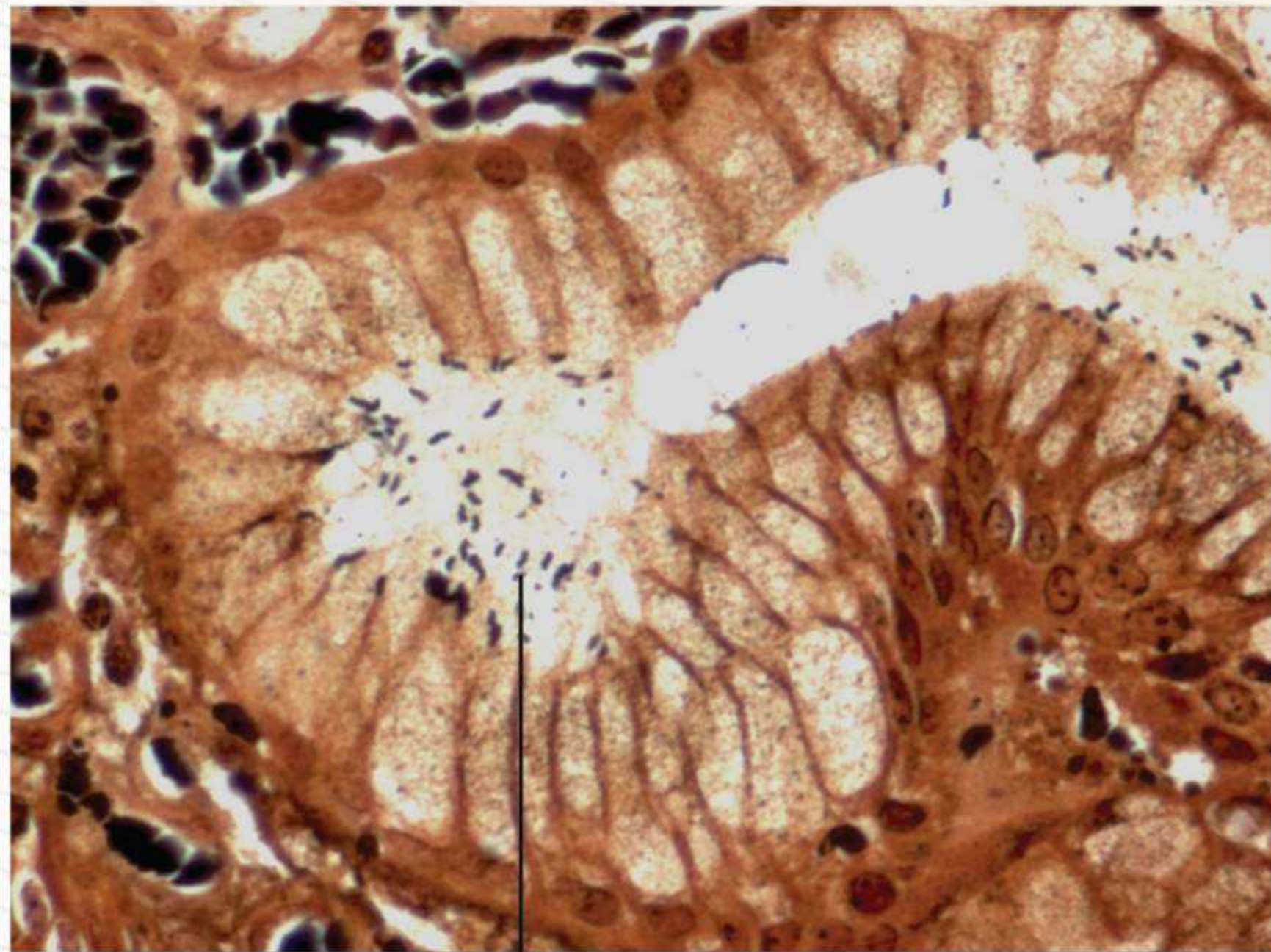
**Kit Contents :** Alcian Blue Solution (Reagent A), Nuclear Fast Red Solution (Reagent B)



**Acidic mucins, Sulphated & Carboxylated Sialomucins, Sulphated & Carboxylated Mucopolysaccharides - Blue**

**Nuclei - Red to Pink**

# WARTHIN STARRY



***Helicobacter pylori*** - Black

Warthin Starry stain is the best staining technique to detect spirochetes (such as *Helicobacter*, *Leptospira*, *Borrelia*, and *Treponema* species), as well as small bacilli (including *Campylobacter*, *Bartonella*, and *Legionella* species). Numerous staining techniques have been concocted to identify *H.pylori* in histological sections but their sensitivity and specificity vary significantly. To enhance the detection of the presence of low density organisms, special staining techniques like Warthin-Starry is required. The identification is relatively much easier with the Warthin-Starry method because the silver coating makes the organism appear larger.

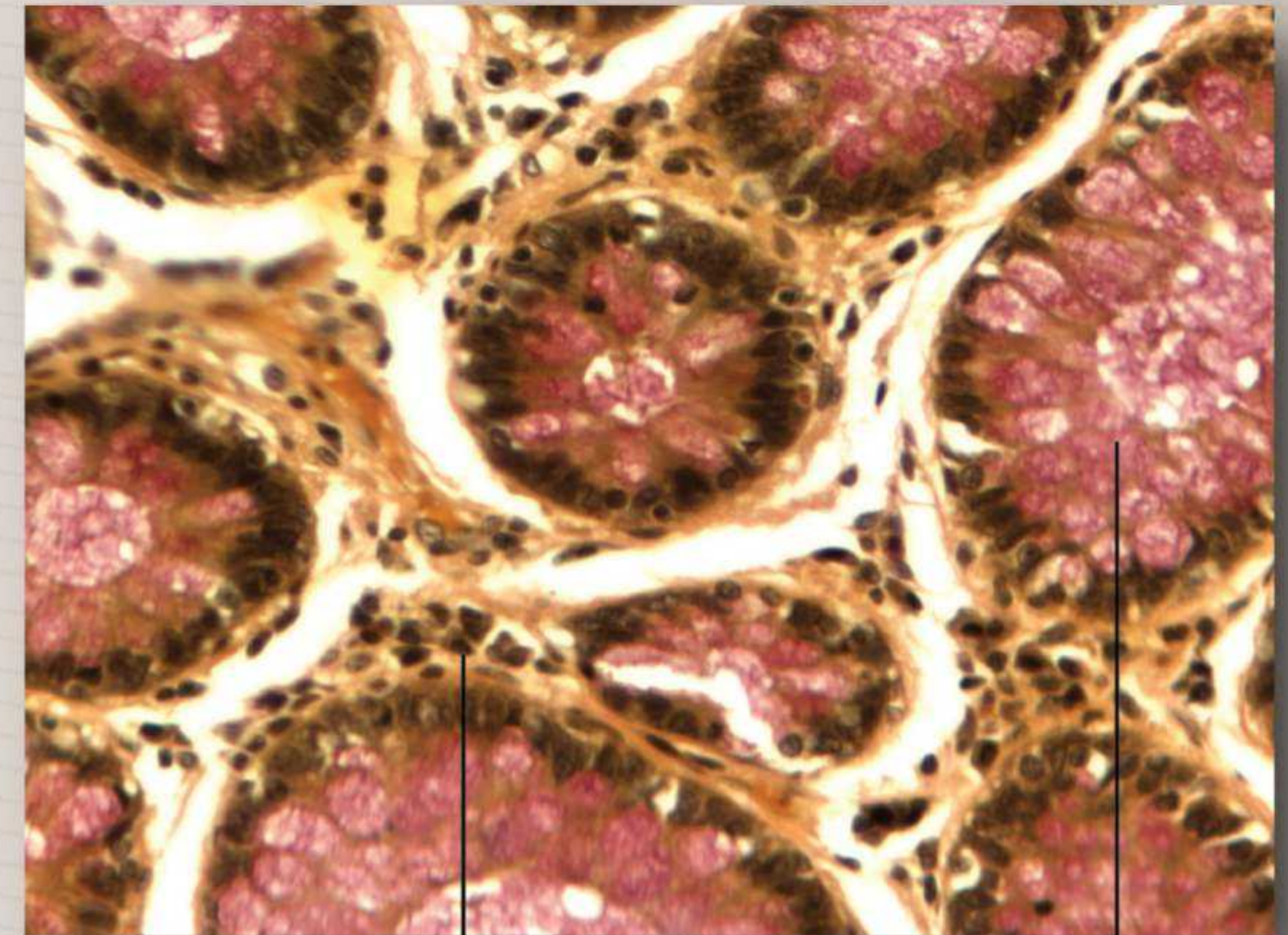
## PRODUCT INFORMATION :

Product Code	Pack Size
SSP014	100ml Ready to use
SSP014	250ml Ready to use
SSP014	500ml Ready to use

**Kit Contents :** 0.25 % Silver Nitrate (Reagent A), 2% Silver Nitrate (Reagent B), Gelatin (Reagent C), Hydroquinone (Reagent D), Tartrazine ( Reagent E)

# MUCICARMINE

Mucicarmine staining is intended for use in the histological visualization of acid mucopolysaccharides in tissue sections. Mucin is a secretion produced by a variety of epithelial cells and connective tissue. Mucicarmine is a valuable technique for the evaluation of acid mucins particularly those of the gastrointestinal tract. In addition, this technique is also useful for staining the capsule of the fungus *Cryptococcus neoformans*. The mucicarmine staining technique is also useful for determining the site of a primary tumor by visualizing tumor cells producing mucin in an area not containing mucin-producing cells.



**Nuclei - Black**

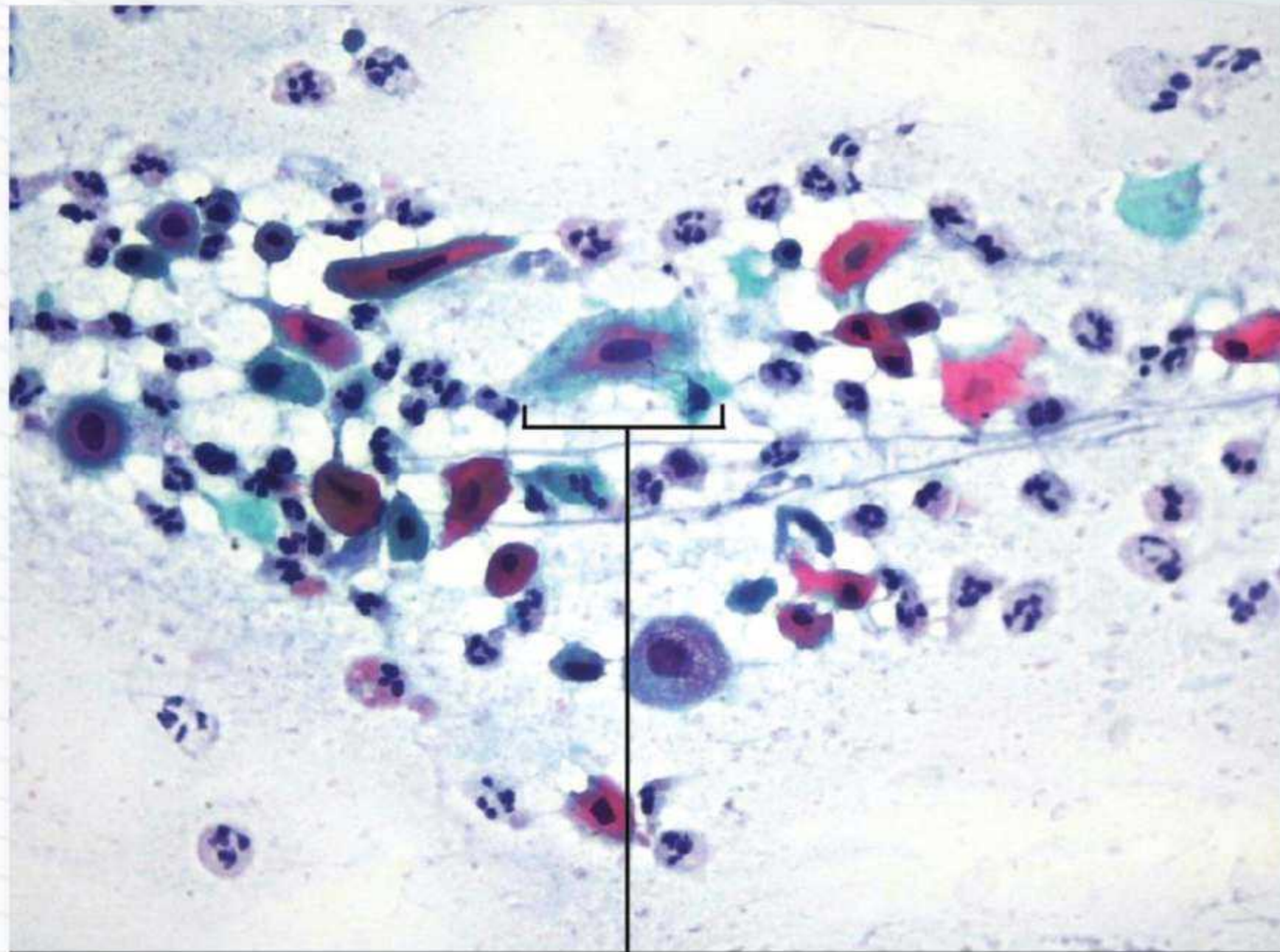
**Mucin - Pink**

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP010	100ml Ready to use
SSP010	250ml Ready to use
SSP010	500ml Ready to use

**Kit Contents :** Carmine Stock Solution, Weigert's Iron Hematoxylin Solution -1, Weigert's Iron Hematoxylin Solution -2, Metanil Yellow

# PAPANICOLAOU (PAP)



**Superficial Squamous Cell** - Orange to Pink

**Cytoplasm** - Green

**Cell Nuclei** - Blue

Papanicolaou's stain contains multiple dyes to differentiate cells in smears of various bodily secretions and specimens from fine needle aspirations. It is a polychrome staining method which depends on degree of cellular maturity and cellular metabolic activity. The stain is designed to differentiate variety of cells in vaginal smear to detect vaginal, uterine and cervical cancers.

## PRODUCT INFORMATION :

Product Code (with Modified Mayer's Hematoxylin)	Pack Size
SSP001	1000ml Ready to use
SSP001	250ml Ready to use
SSP001	500ml Ready to use

## PRODUCT INFORMATION :

Product Code (with Harris Hematoxylin)	Pack Size
SSP005	100ml Ready to use
SSP005	250ml Ready to use
SSP005	500ml Ready to use

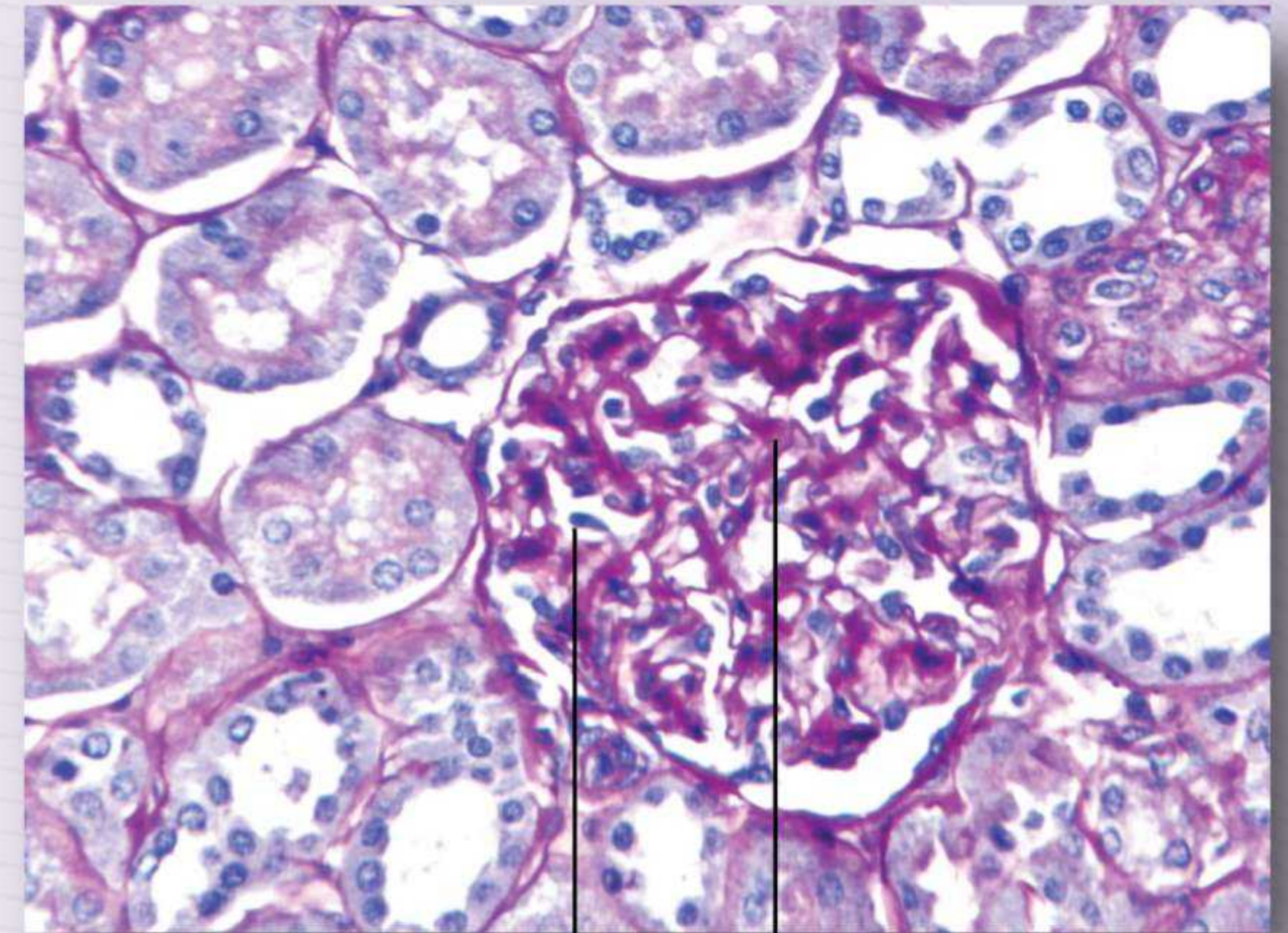
**Kit Contents :** Modified Mayer's Hematoxylin (Reagent A), Orange G6 (Reagent B), EA50 (Reagent C)

# PERIODIC ACID SCHIFF (PAS)

Periodic acid Schiff's (PAS) staining is one of the most commonly performed special staining technique in histology to detect the polysaccharides or molecules with high percentage of carbohydrate content such as glycogen and mucosubstances such as glycoproteins, glycolipids and mucins in tissues. Additionally, it is intended to demonstrate lymphocytes in tissues. The PAS stain is also used for the detection of fungal organisms in tissue sections.

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP003	100ml Ready to use
SSP003	250ml Ready to use
SSP003	500ml Ready to use



**Nuclei - Blue**

**Glycoprotein, Glycolipid,  
Mucins - Magenta**

**Kit Contents :** Periodic Acid (Reagent A), Schiff's Reagent (Reagent B), Modified Mayer's Hematoxylin (Reagent C)



# CONGO RED

**Amyloid,  
Elastin**

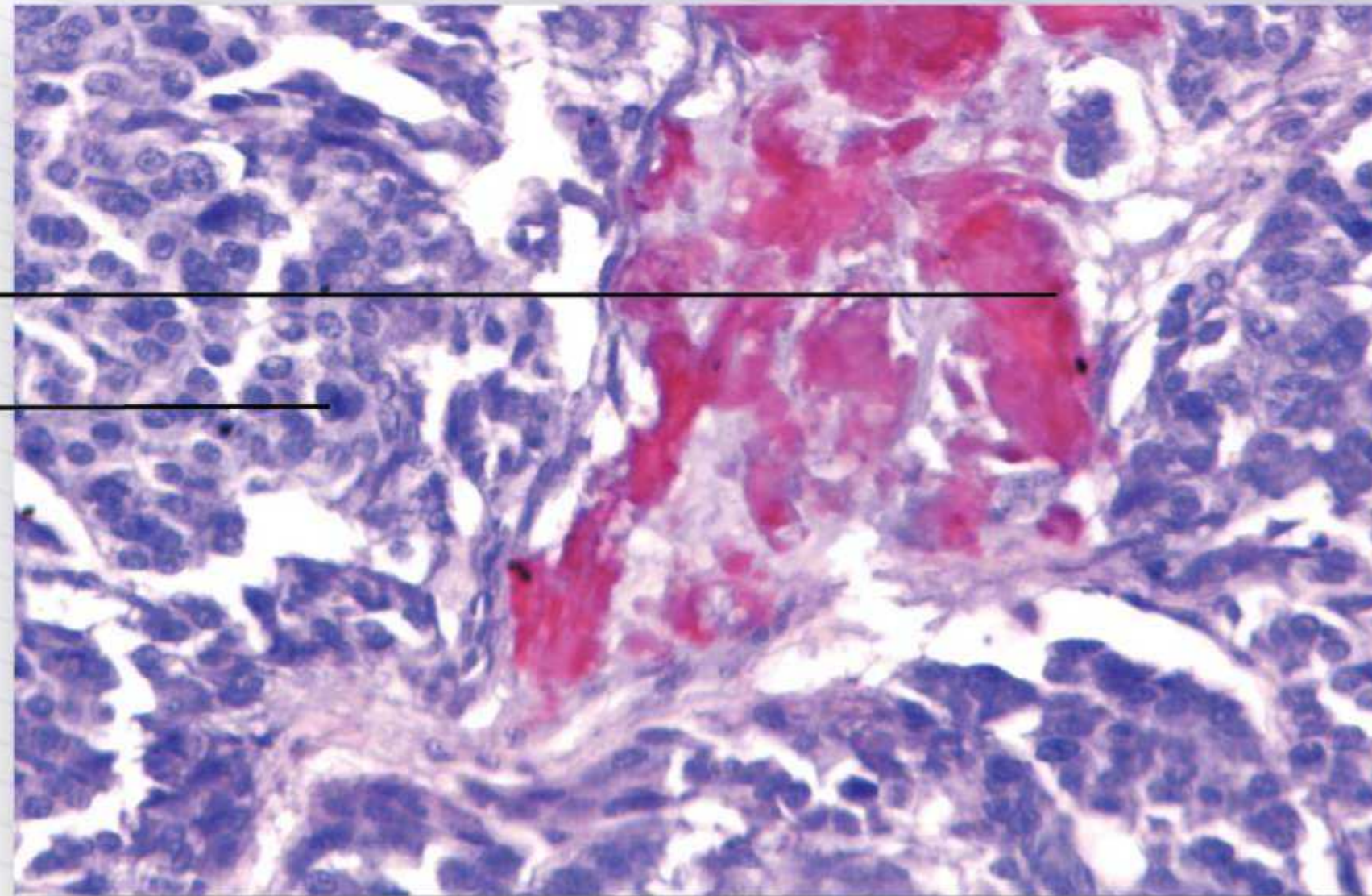
**Fibres -**

Dark

Pink to Red

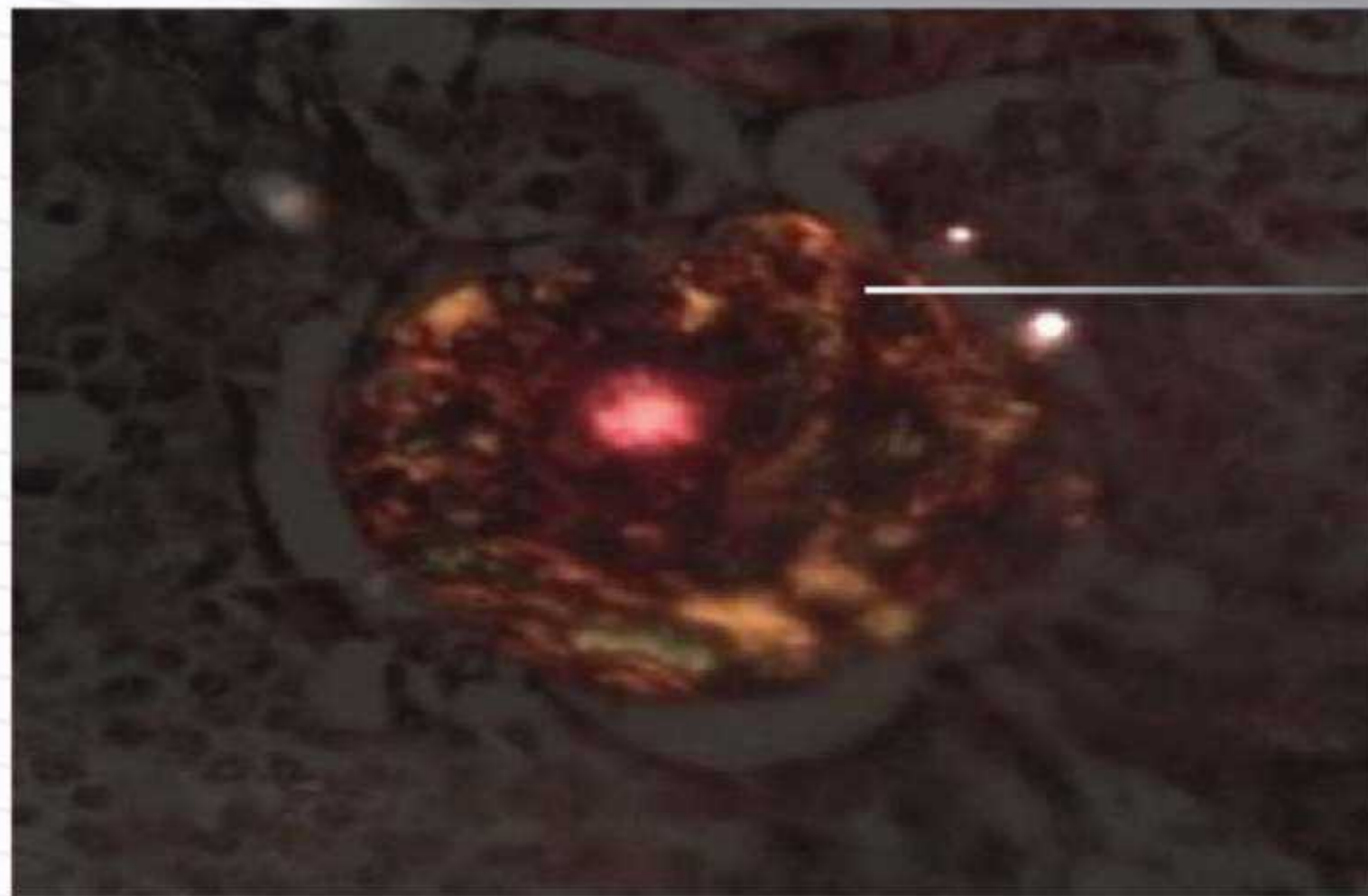
**Nuclei-**

Blue



Congo red is a synthetic dye, used for the differential staining of elastic fibers. Congo red histological staining is the gold standard technique for the detection of amyloidosis. It is a dye belongs to a group of azo dyes derived from benzidine and it does not require the application of mordant. Amyloid refers to the abnormal, fibrous extracellular proteinaceous deposits found in organs such as kidney, spleen, liver etc. the deposition of amyloids in the tissue is known as Amyloidosis. In histology, the Congo red is used for staining amyloidosis, other amyloids in cell wall of plants, fungi and outer membrane of Gram Negative bacteria.

**Amyloidosis shown in  
Polarised Lens**



## PRODUCT INFORMATION :

**Product Code**

**Pack Size**

SSP002

100ml Ready to use

SSP002

250ml Ready to use

SSP002

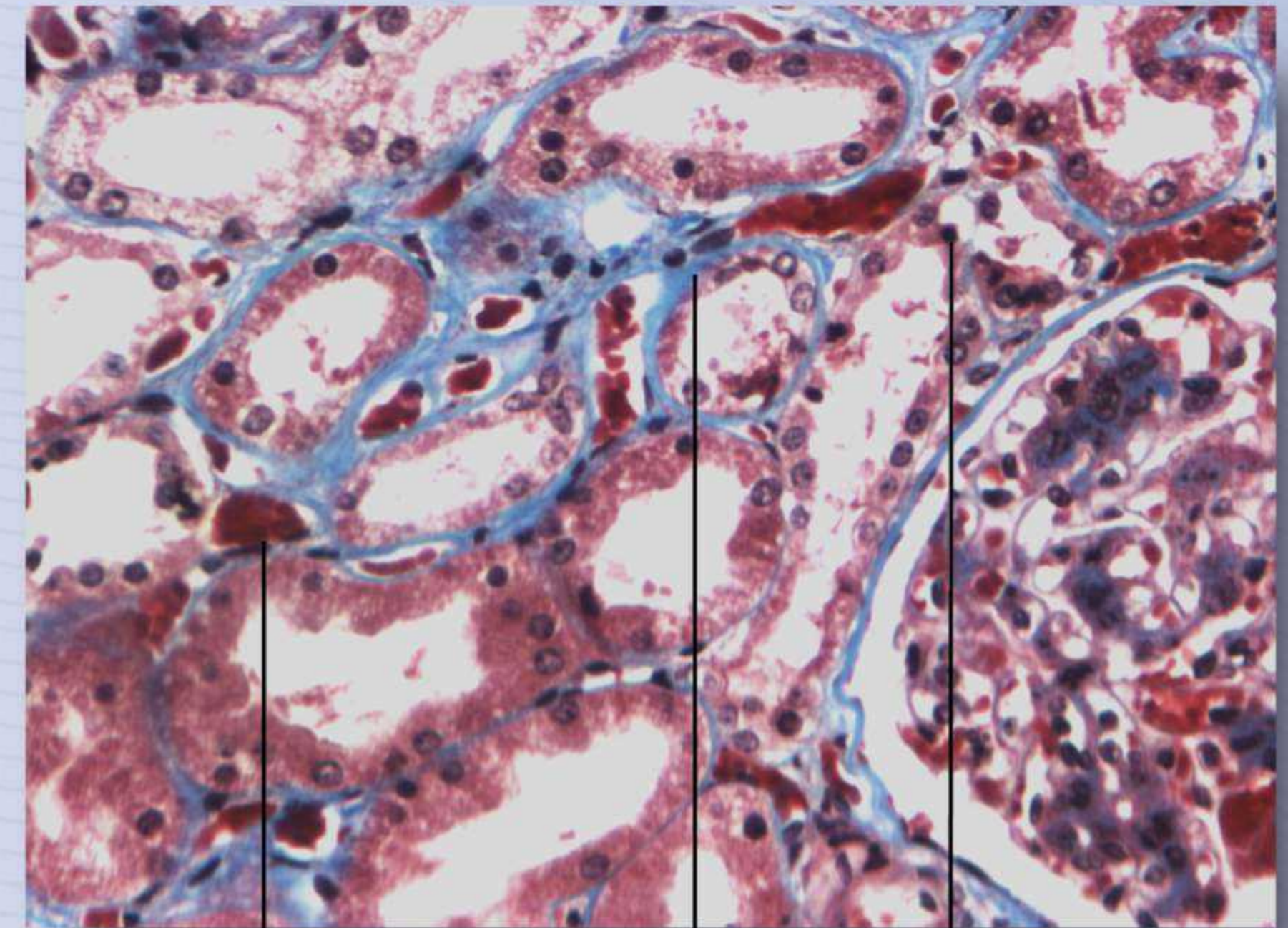
500ml Ready to use

**Kit Contents :** Congo Red Stock Solution (Reagent A), 1% NaOH (Reagent B), Alkaline Alcohol Solution (Reagent C), Modified Mayer's Hematoxylin (Reagent D)

# MASSON'S TRICHROME

Masson's trichrome staining is widely used to study muscular pathologies (muscular dystrophy), cardiac pathologies (infarct), hepatic pathologies (cirrhosis) or kidney pathologies (glomerular fibrosis). It can also be used to detect and analyze tumors on hepatic and kidney biopsies. In Trichrome staining, three dyes are employed to selectively stain muscle, collagen fibers, fibrin, and erythrocytes.

PRODUCT INFORMATION :	
Product Code	Pack Size
SSP009	100ml Ready to use
SSP009	250ml Ready to use
SSP009	500ml Ready to use



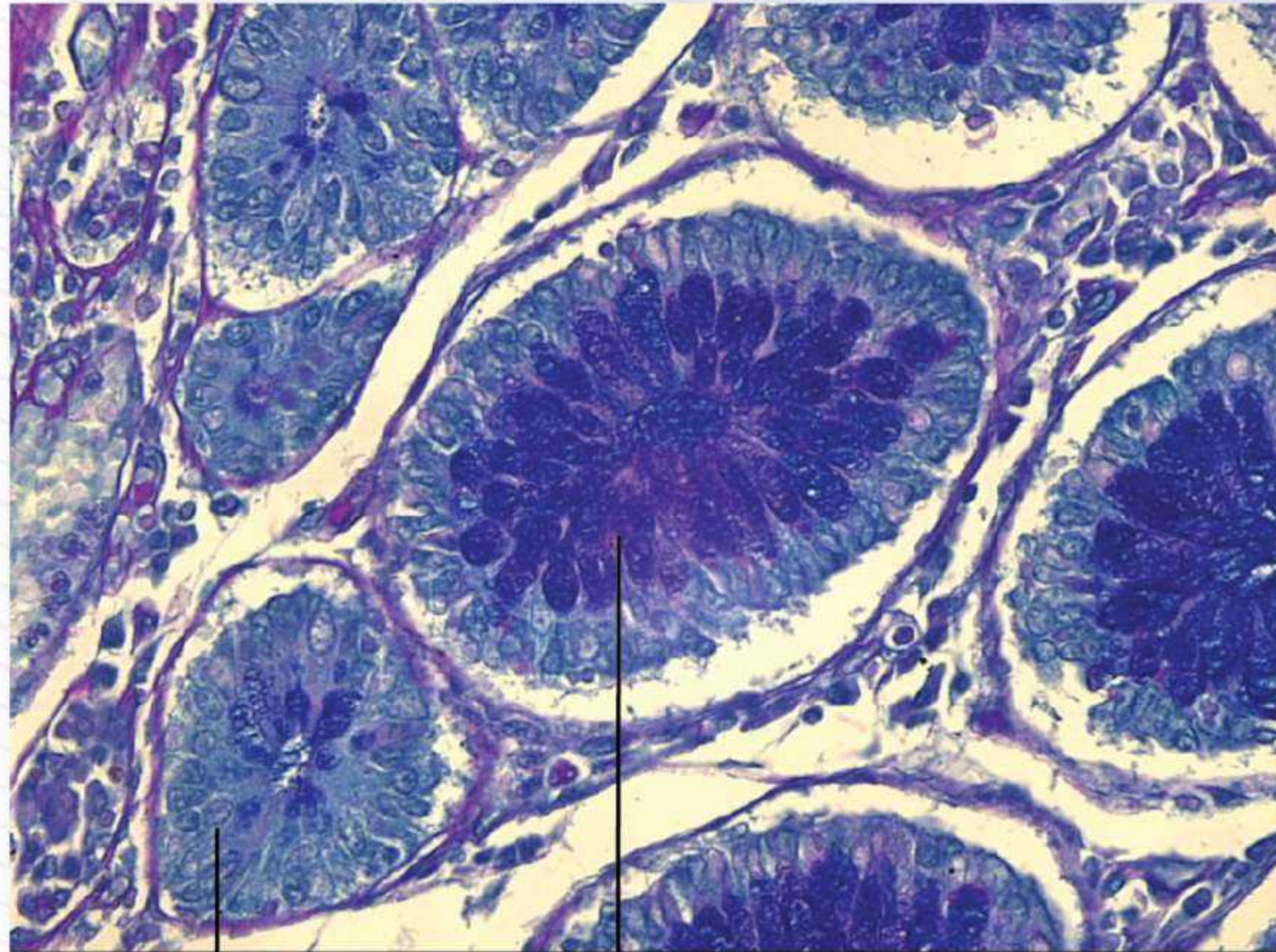
**Keratin & Muscle Fibers - Red**

**Collagen - Blue**

**Cell Nuclei - Black**

**Kit Contents :** Bouin's Fixative (Reagent A), Weigert's Iron Hematoxylin Solution 1 (Reagent B), Weigert's Iron Hematoxylin Solution 2 (Reagent C), Biebrich Scarlet Acid Fuchsin solution (Reagent D), Phosphomolybdic and Phosphotungstic Acid Solution (Reagent E), Aniline Blue solution (Reagent F), 1% Glacial Acetic Acid Solution (Reagent G)

# PAS ALCIAN BLUE



**Neutral & Acid Mucins - Purple**

**Acid Epithelial Mucins - Blue**

The Alcian Blue/PAS Stain kit is used to identify acidic and neutral mucins. This procedure clearly separates the acidic and neutral mucins by color and can be used to distinguish all mucins in tissue sections. The 3% acetic acid solution (pH 2.5) with alcian blue is believed to form salt linkages with the acid groups of acid mucopolysaccharides. The tissue sections are first oxidized using periodic acid which oxidises the vicinal bonds in these sugars, breaking the carbon-carbon bonds resulting in the pair of aldehydes. The Schiff's reagent reacts with the aldehyde groups forming colorless, unstable dialdehyde compound which transforms to insoluble magenta colored complex by restoration of quinoid chromophoric grouping.

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP008	100ml Ready to use
SSP008	250ml Ready to use
SSP008	500ml Ready to use

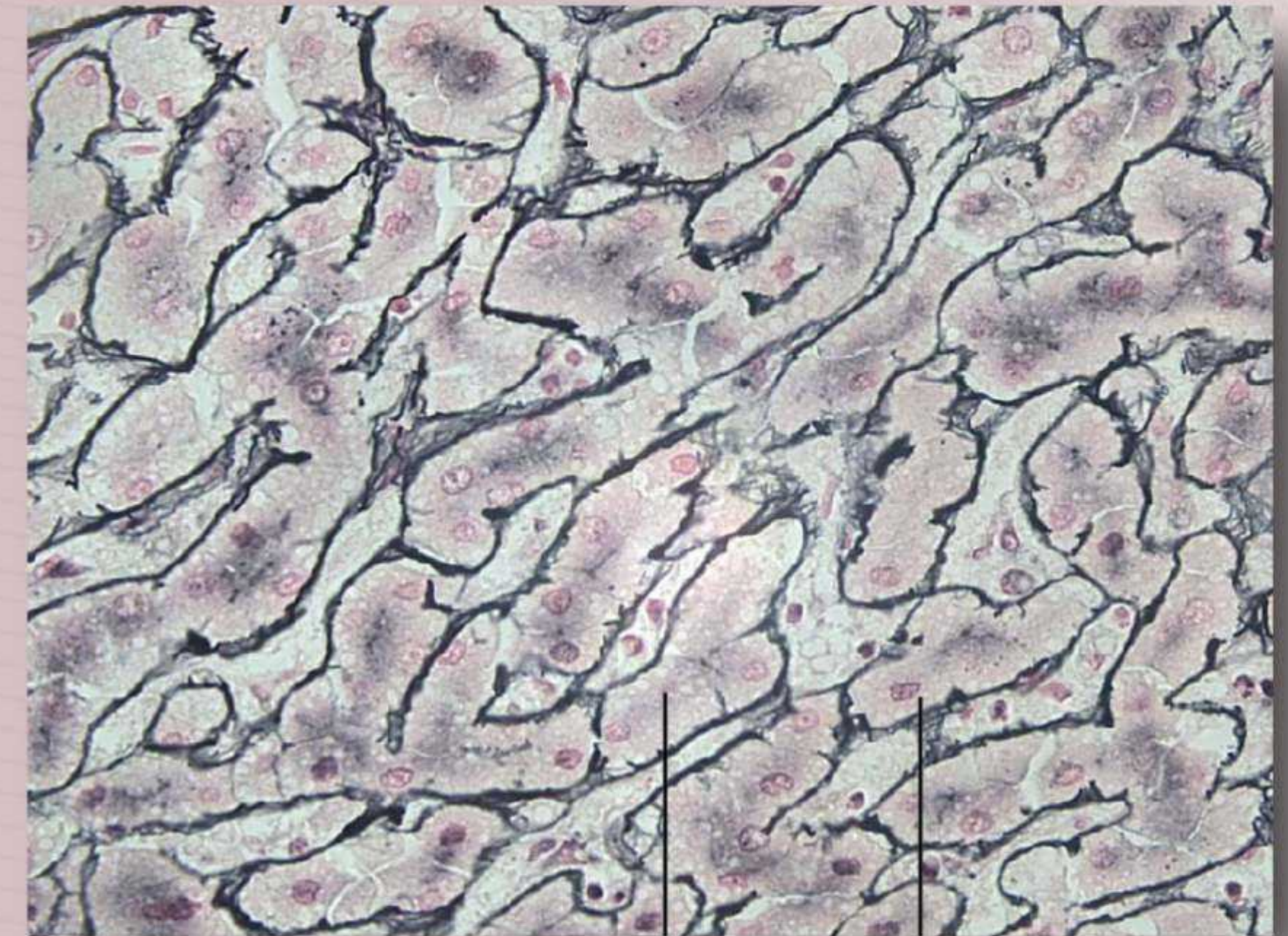
**Kit Contents :** Alcian Blue Solution (Reagent A), Periodic Acid Solution (Reagent B), Schiff's Reagent (Reagent C), Modified Mayer's Hematoxylin (Reagent D)

# RETICULIN

Reticular tissue is a special type of connective tissue that predominates in various locations that have a high cellular content. to the arrangement of reticular fibers (reticulin). These fibers are actually type III collagen fibrils. Reticulin stain is a commonly used special stain to demonstrate reticulin fibers. Reticulin is a type III collagen found in the basement membrane of many organs and provides structural integrity. It is found commonly in the liver, kidneys and the spleen.

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP013	100ml Ready to use
SSP013	250ml Ready to use
SSP013	500ml Ready to use

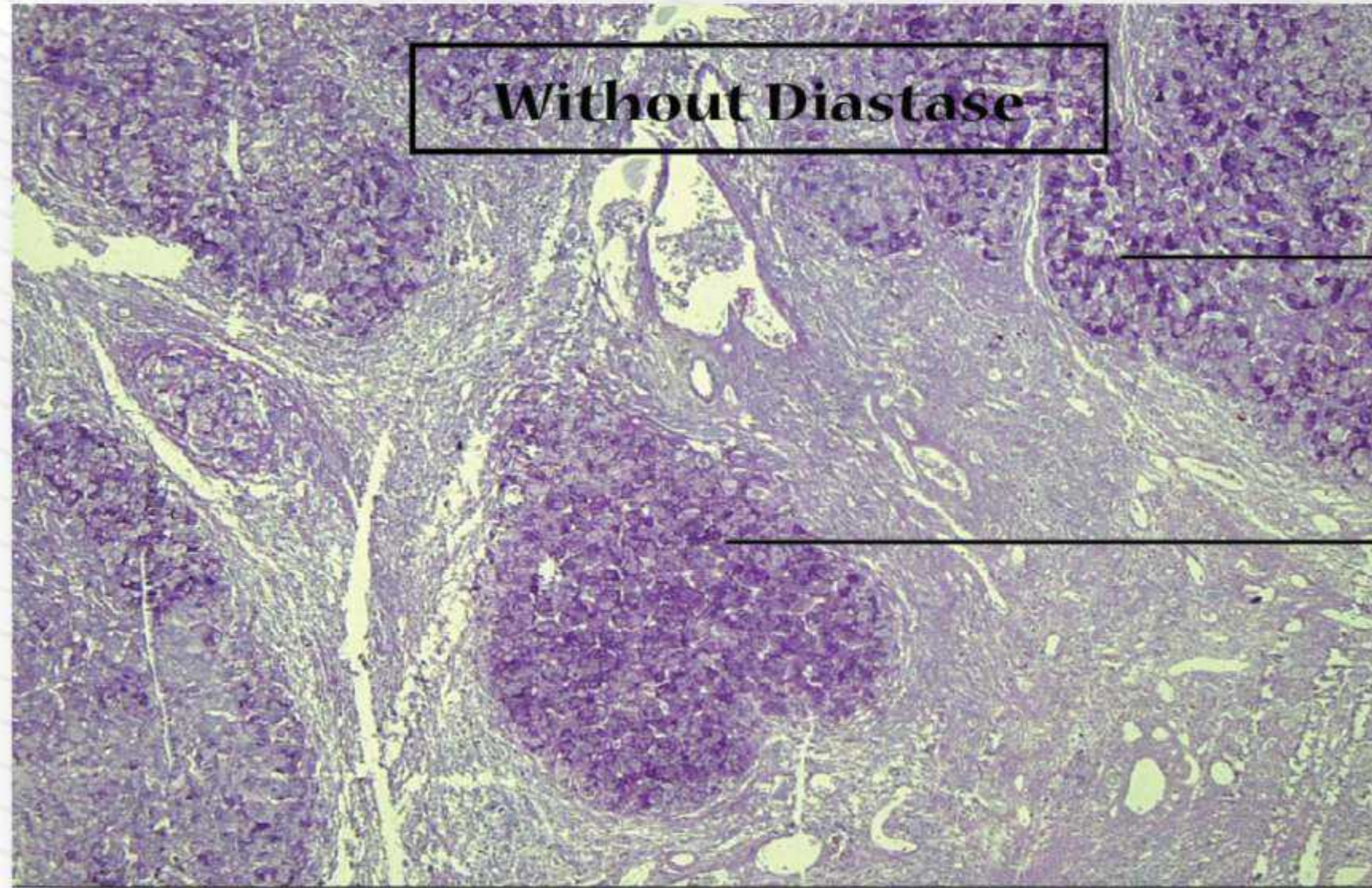


**Reticulin Fibers - Black**

**Nuclei - Red**

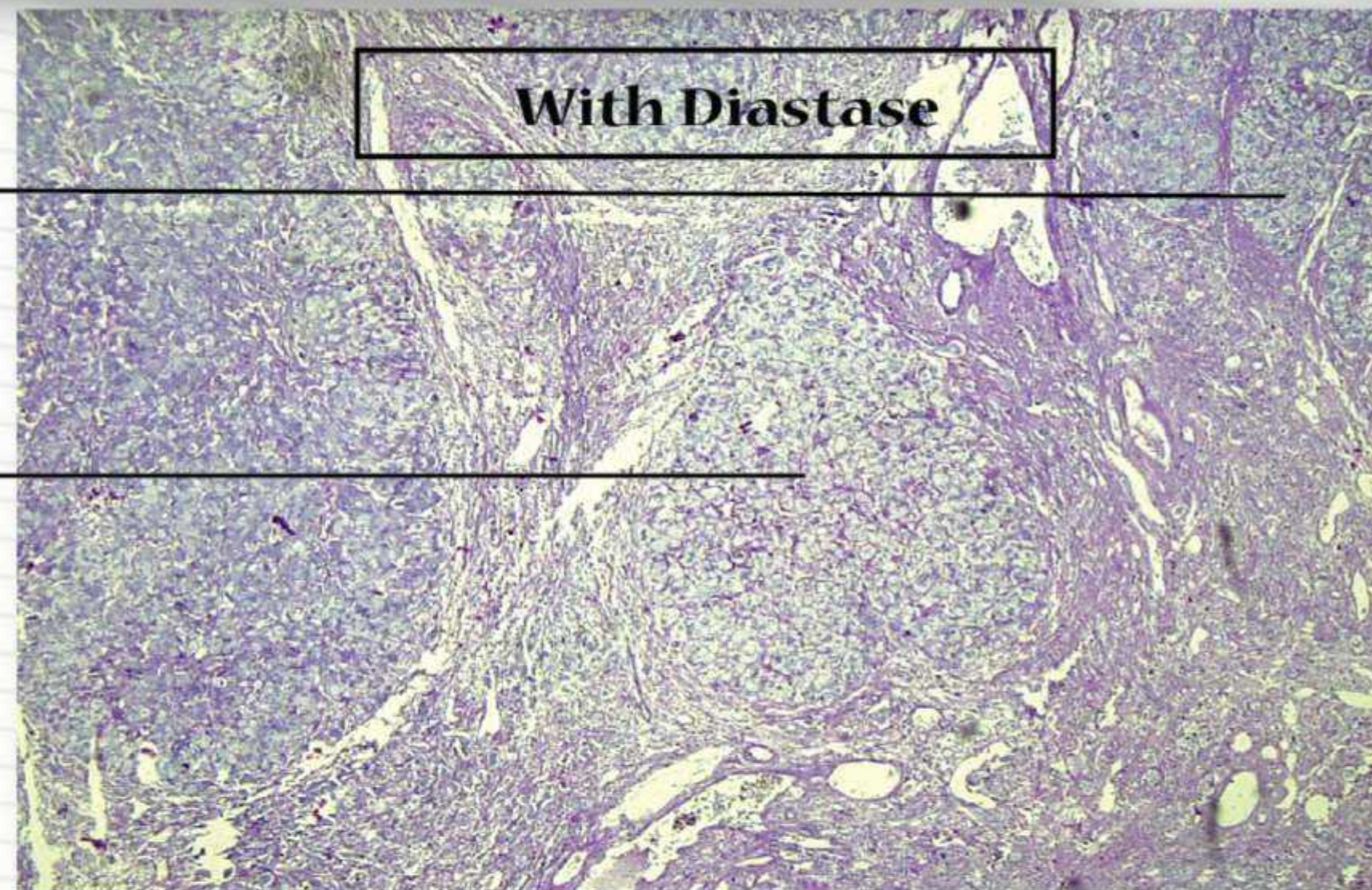
**Kit Contents :** Potassium Permanganate (Reagent A) Oxalic Acid (Reagent B), Iron Alum (Reagent C), Silver nitrate (Reagent D), Sodium Hydroxide (Reagent E), Formalin (Reagent F), Gold Chloride (Reagent G), Sodium thiosulphate (Reagent H), Nuclear Fast Red (Reagent I)

# PAS-DIASTASE



**Glycoprotein,  
Glycolipid,  
Mucin with  
undigested  
Glycogen**

PAS-Diastase stain refers to the Pas stain used in combination with diastase enzyme to differentiate glycogen from PAS positive elements in tissue samples. The PAS with Diastase staining procedure can also be used to differentiate glycogen granules from other granules in various tumor types. Mucin can be specifically identified in certain tissue samples using the PAS staining procedure only if the glycogen (which is also PAS positive) is digested with diastase and washed out. In cirrhosis,  $\alpha$ 1-AT globules characteristically occur at the periphery of the nodules in multiple sizes within the hepatocyte gives a dark, reddish-purple when stained with PAS-diastase as glycogen is digested by diastase.



**Glycoprotein,  
Glycolipid,  
Mucin with  
digested  
Glycogen**

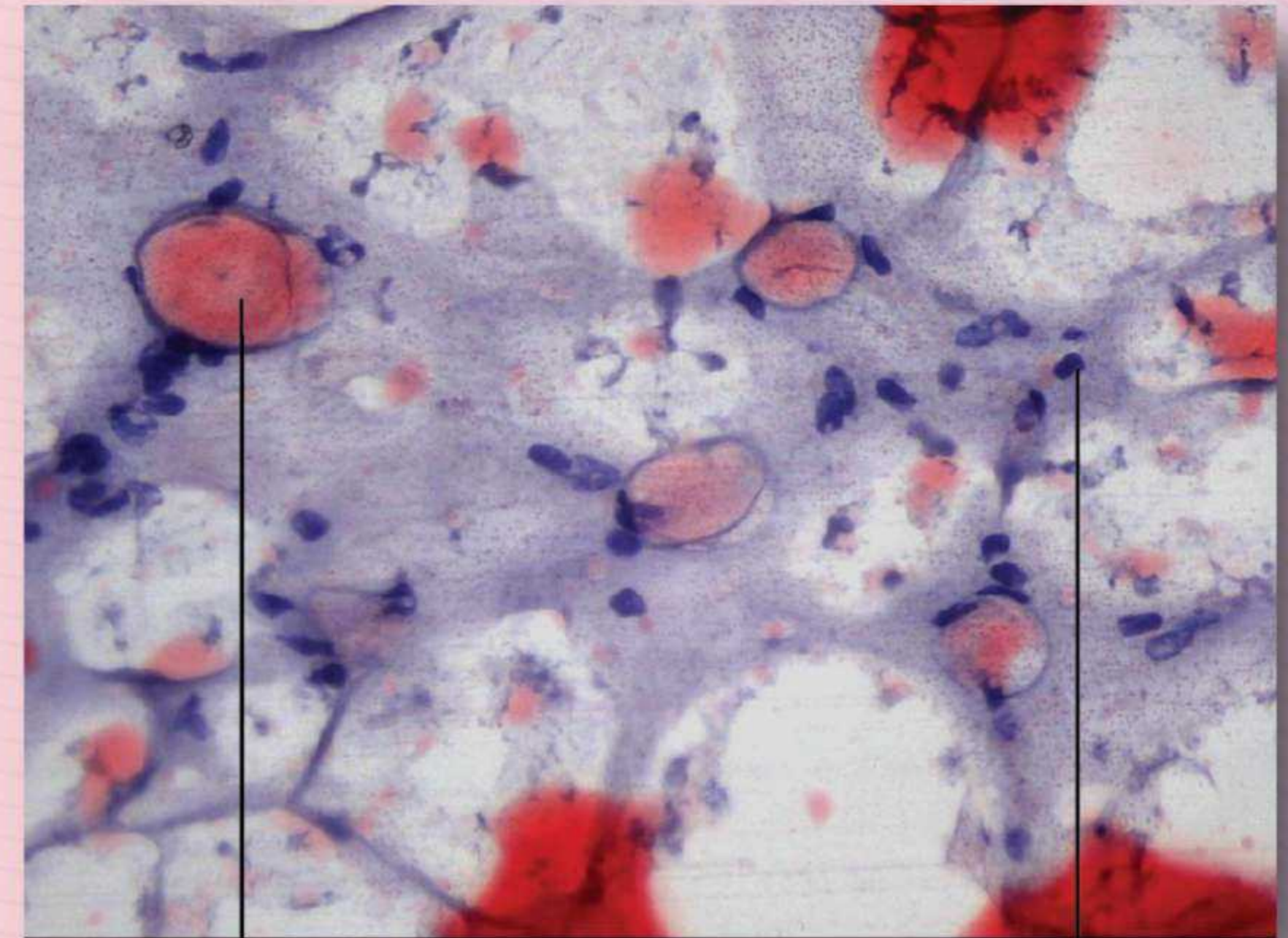
## PRODUCT INFORMATION :

Product Code	Pack Size
SSP006	100ml Ready to use
SSP006	250ml Ready to use
SSP006	500ml Ready to use

**Kit Contents:** Periodic Acid (Reagent A), Schiff's Reagent (Reagent B)  
Modified Mayer's Hematoxylin (Reagent C)

# OIL RED O

Oil Red is used to demonstrate neutral fats in liver tissue. It is used to assess the presence and extent of neutral fat. The Red O stain is based on the greater solubility of the dye in neutral fats than in the solvent in which it is dissolved. In tissues containing fat, the Oil Red O moves from the staining solution to the tissues fat because of its greater solubility in the latter than in alcohol. Oil Red O staining can only be performed on frozen sections since tissue fat is removed fat is removed by the alcoholscounterstained with hematoxylin and mounted in compatible medium that will not dissolve the tissue fat.



**Neutral Fat - Red**

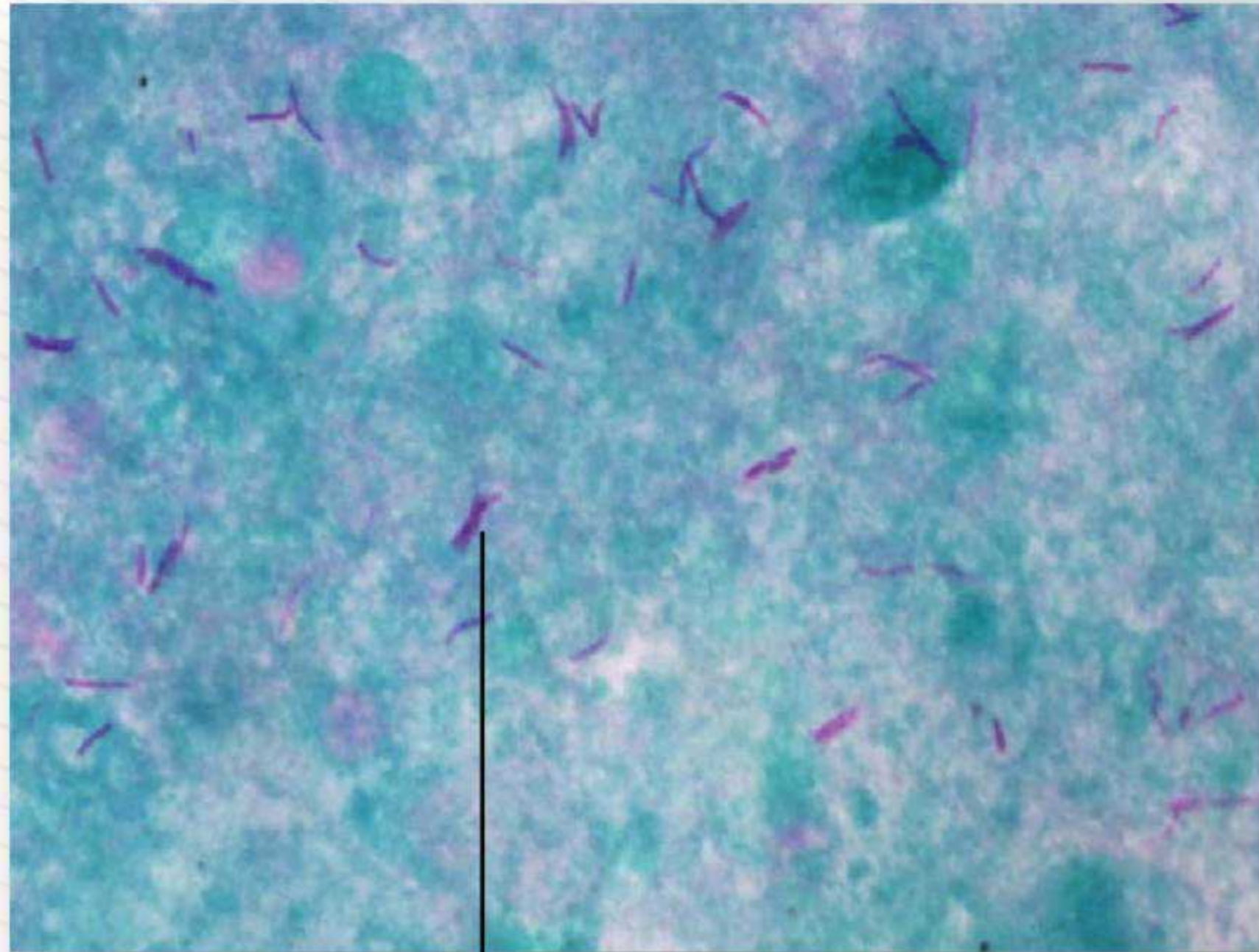
**Nuclei - Blue**

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP015	100ml Ready to use
SSP015	250ml Ready to use
SSP015	500ml Ready to use

**Kit Contents:** Oil-Red-O (Reagent-A), Harris Hematoxylin (Reagent B)

# ACID FAST BACTERIA



AFB stain is a differential bacteriological stain used to identify acid-fast organisms, mainly *Mycobacterium* species including *M. tuberculosis*, *M. ulcerans*, and *M. leprae* and non tuberculous *Mycobacteria* (NTM). The staining method for acid fast bacilli is similar to that of classical bacteriological procedure for smears. The Acid Fast Stain kit when used in the appropriate histological procedures may be used for the detection of *Mycobacterium tuberculosis* in tissue sections and smears. The term “acid fast” refers to the capacity of specific bacterial types to bind cationic dyes and to retain these dyes following differentiation in an acidic solution/decolorizer.

**Acid Fast Bacteria -**  
Magenta

**Kit Contents :** Carbol Fuchsin (Reagent -A), Decolorizer (Reagent B),  
Light Green (Reagent C)

## PRODUCT INFORMATION :

Product Code	Pack Size
SSP012	100ml Ready to use
SSP012	250ml Ready to use
SSP012	500ml Ready to use

**AFB****Staining Interpretation:**

Acid Fast Bacilli: Bright Red  
Other tissue elements: Pale green

**ALCIAN BLUE****Staining Interpretation:**

Nuclei: Pink to Red  
Acid Mucins: Blue

**CONGO RED****Staining Interpretation:**

Nuclei: Dark Blue  
Amyloid:  
In Transmitted light: Pink to Red  
In Polarized light: Apple green birefringence  
Connective tissue, collagen: Light Red

**GMS****Staining interpretation:**

Fungi: sharply delineated in Black  
Mucin and glycogen: Black  
Melanin: Black  
Background: Green

**MASSON'S TRICHROME****Staining Interpretation:**

Nuclei: Black  
Cytoplasm: Red  
Muscle Fibers: Red  
Collagen Fibers: Blue

**MUCICARMINE****Staining interpretation:**

Mucin: Deep rose  
Nuclei: Black  
Other tissue elements: Yellow

**OIL RED O****Staining Interpretation:**

Fat : Orange - Bright Red  
Nuclei : Blue

**PAS****Staining Interpretation:**

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

**PAS ALCIAN BLUE****Staining Interpretation:**

Acid Epithelial mucins: Blue  
Neutral Epithelial mucins: Magenta  
Mixture (Acid & Neutral) Mucins: Purple

**PAS-DIASTASE****Staining Interpretation:**

Mucins: Magenta  
Nucleus: Purple or Dark Blue  
Glycogen: Digested and not stained

**PAP****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

**RETICULIN****Staining Interpretation:**

Nuclei: Black  
Cytoplasm: Red  
Muscle Fibers: Red  
Collagen Fibers: Blue

**WARTHIN-STARRY****Staining Interpretation:**

Helicobacter pylori : Black  
Legionella pneumophila : Black  
Spirochetes: Black  
Cat Scratch Fever Bacteria : Black  
Klebsiella : Brown/Black  
Nuclei : Brown-Black  
Background: Yellow



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