

Routine & Silver Stains with description (Listed Alphabetically)

AFB Purpose: Acid Fast organisms
Control: AFB
Results: Acid Fast Bacilli: red
Nocardi filaments: red
Lepra bacilli: red
Background: pale blue

Fite's AFB Purpose: Acid Fast organisms
Control: AFB
Results: Acid Fast Bacilli: red
Nocardia filaments: red
Lepra bacilli: red
Background: pale blue

Alcian Blue 0.4 Purpose: Mucins
Control: Mucin
Results: Carboxylated and Sulfated
Mucosubstances and Acidic
Mucins: blue
Nuclei: pink-red
Cytoplasm: pale pink

Alcian Blue 1.0 Purpose: Demonstration of sulfated mucosubstances
Control: Mucin
Results: Sulfated mucosubstances: pale blue
Nuclei: red
Background: pink to red

Alcian Blue 2.5 Purpose: Carboxylated and Sulfated Mucosubstances
Control: Mucin
Results: Carboxylated and Sulfated
Mucosubstance: blue
Nuclei: pink to red
Cytoplasm and background:
pale pink

Aldehyde Fuchsin Purpose: Demonstration of pathologic changes in elastic fibers
Control: Normal skin
Results: Elastic fibers: deep blue to purple
Other tissue: green

Bleached

Purpose: Remove Melanin Pigments

Colloidal Iron
(Coll. Fe)

Purpose: To demonstrate carboxylated and sulfated mucopolysaccharides and glycoproteins

Control: Mucin

Results: Acid mucopolysaccharides and acidic epithelial mucins:
deep prussian blue
Nuclei: pink to red
Cytoplasm: pink

Coll.Fe /Van Gieson**Congo Red**

Purpose: Amyloid

Control: Amyloid

Results: Amyloid: pink
Nuclei: blue

Crystal Violet

Purpose: Amyloid

Control: Amyloid

Results: Amyloid: purplish violet
Tissue elements: blue

Fontana Masson
(Silver Stain)

Purpose: To demonstrate nonspecific silver-reducing substances such as melanin, argentaffin granules of carcinoid tumors and formalin pigment.

Control: Melanin

Results: Silver-reducing substances: black
Tissue elements: green

Giemsa

Purpose: To demonstrate mast cell granules and bacteria

Control: Normal skin with mast cell granules

Results: Nuclei: blue
Basophile leucocyte, mast cell granules: purple to violet
Erythrocytes, eosinophile granules: pink
Cytoplasm: blue to pink

Gram

Purpose: Gram (-) & (+) Bacteria

Control: Gram (-) & (+)

Results: Gram positive: purple
Gram negative: red
Background: yellow

Grocott's
(Silver Stain)

Purpose: Demonstration of fungal organisms
Control: Fungi
Results: Fungi: cell walls in black
Mucin: taupe to dark grey
Background: pale green
Nuclei: pink-red
Cytoplasm: pale pink

Hirano/Zimmerman

Purpose: Nerve cells and fibers
Results: Nucleolus & Nuclear membrane: black
Neurofibrils, dendrites, and axis cylinders: black
Cytoplasm of astrocytes and cytoplasmic membranes of macrophages: grey
Senile plaques: black
Lipid granules: unstained but clearly outlined

Iron

Purpose: Ferric Iron
Control: Iron
Results: Ferric iron: bright blue
Nuclei: red
Cytoplasm: light pink

Mucicarmine

Purpose: Epithelial Mucin
Control: Mucin
Results: Epithelial mucin: pink to red
Nuclei: blue

Orcein/Giemsa

Purpose: For Connective tissue
Control: Normal Skin
Results: Nuclei: deep blue
Cytoplasm of epidermis and smooth muscle: light blue
Collagen: rose pink
Elastic fibers: dark brown
Mast cell granules and many Mucoïd substances: purple
Eosinophilic granules and erythrocytes: bright red

Pas

Purpose: Carbohydrate, Mucins, Fungi
Control: Small intestine
Results: Positive reaction: rose to purplish red
Nuclei: blue
Fungi: red
Background: pale green

PAS/Alcian Blue Purpose: Muco-substances and polysaccharides
Control: Mucin
Results: polysaccharides and mucosubstances containing hexoes/deoxyhexoxes with vicinal glycol: magenta to red
Hyaluronic acid, sialomucin: blue

Pas-Diastase Purpose: Demonstration of glycogen
Control: Mucin, small intestine
Results: Glycogen, mucin, reticulin, fibrin: purple-red
Nuclei: blue
Fungi: red
Background: pale green

Pas-H Purpose: Carbohydrate, Mucins, Fungi, Cellular elements
Control: Mucin, small intestine
Results: Positive reaction: rose to purplish red
Nuclei: blue
Fungi: rose

Reticulin Purpose: Reticular fibers
(Silver Stain) Results: Reticulum: black
Nuclei & background: red

Steiner Purpose: Spirochetes, *Helicobacter* and *Legionella* organisms
(Silver Stain) Results: Legionella pneumophilla,
Spirochetes, donovan bodies,
fungi, & most bacteria: dark
brown to black
Background: light yellow

Toluidine Blue Purpose: Mast cells and other tissue
components by
metachromatic properties
Control: Mast cells
Results: Mast cell granules: brilliant
red-purple
Nuclei: shades of blue
Erythrocytes: green to yellow

Trichrome Purpose: Collagen, Muscle fibers
Control: Muscle
Results: Muscle fibers: red
Collagen: blue
Nuclei: blue to black

Verhoeff's Purpose: Elastic fibers
Results: Elastic fibers: black
Collagen: red
Other tissue: yellow

Von Kossa
(Silver Stain) Purpose: Calcium
Control: Tissues with Calcium salts
Results: Calcium salts: black
Nuclei: red
Cytoplasm: light pink

Warthin- Starry
(Silver Stain) Purpose: Spirochetes and other bacteria
Results: Legionella pneumophila,
Spirochetes, donovan bodies,
fungi, & most bacteria: dark
brown to black
Background: pale yellow to light brown