WARD'S Natural Science

Microscope Slide Preparation and Stain Guide

MOUNT PREPARATION TECHNIQUE

(WM) = Wholemount
(SM) = Smear
(SECT) = Section
(CS) = Cross Section
(TLS) = Tangential – Longitudinal Section
(RLS) = Radial – Longitudinal Section
(LS) = Longitudinal Section
(MLS) = Median – Longitudinal Section
(SQ) = Squash
(VS) = Vertical Section

STAIN		STRUCTURE/COLOR
a	Azan	Nuclei, nucleoli, and erythrocytes – red; muscle – orange; gliafibrils – reddish; connective tissue – blue.
ab	Azure B	DNA of chromatin – blue-green; RNA in nucleolus and cytoplasm – purple.
ac	Aceto-Carmine	Chromosome banding – reddish brown.
af	Acid-Fuchsin	Nuclei – red; mitochondria (plant) – red.
as	Albert's	Volutin granules – black; cytoplasm – light green.
b	Bielschowsky silver method	Intracellular neurofibrils, axis cylinders, dendrites – black; collagenous connective tissue – purple.
bc	Best's Carmine	Glycogen – red.
c	Carmine	Nuclei – red.
cv	Cresyl Violet	Nissl substance – purple.
d	Dyar	Cell walls – red; cytoplasm – blue.
daf	DaFano silver method	Golgi substance – black.
ds	Differential Spore	Spores – green/blue; vegetative bodies – red.
e	Eosin	General cytoplasmic structure – various shades of red.
f	Feulgen Reaction	Nuclei, DNA of chromatin – reddish violet.
fg	Fast Green	Animal: Collagen and mucus – green. Plant: Cytoplasm and cellulose cell walls – green.
fls	Flagella Stain	Flagella – reddish brown.
fs	Fuchsin	Nuclei of plant and animal cells – red; bacteria – red.
g(+)	Gram's	Positive reaction – cells violet.
g(-)	Gram's	Negative reaction – cells red.
g(+/-)	Gram's	Both color staining reactions evident.
gs	Giemsa	Nuclei of leucocytes – reddish purple; rest of leucocytes – similar to Wright's stain; cytoplasmodia – blue; chromatin – red.
h	Hematoxylin	Nuclear substances – deep blue.
h & e	Hematoxylin & Eosin	General cytoplasmic structures – shades of pink; nuclear material – deep blue.
h & t	Hematoxylin & Triosin	Nuclear substances – deep blue; cytoplasmic structure – red or orange.
hae	Hematoxylin, Azure II, Eosin	Cytoplasm of lymphocytes and blastocytes – blue; nuclei – deep blue; mast cell granules – violet to reddish purple.
ho	Holmes silver method	Axis cylinders – blue to black; nerves and nerve endings – black; background – gray to rose.
hps	Hematoxylin, Phloxine & Saffron	Nuclei – blue; cytoplasm, muscle, myelin – shades of red; connective tissue – yellow.
ih	Iron Hematoxylin	Nuclear substances, chromosomes, mitochondria, centrioles, muscle striations – blue-black to black.
lfb	Luxol Fast Blue	Myelin – blue-green.
m	Manuel silver method	Reticulum – black.
mas	Mason	Chromatin – brown-black; nuclei – red; zymogen granules – purple; cytoplasmic elements – red to mauve; collagen, mucus, and connective tissue – green.
mal	Mallory triple	Nuclei – red; muscle and some cytoplasmic elements – red to orange; collagen – dark blue; connective tissue and hyaline substance – blue; dense cellular tissue – pink.
mb	Methylene Blue	Nuclear structure, Nissl substance – blue.
mc	Mucicarmine	Mucin – red.
mgp	Methyl Green and Pyronine	DNA – blue; RNA – red.
n	Nigrosin	Negative background stain.
nfr	Nuclear Fast Red	Nuclei – red.
o	Orcein	Elastin – dark brown.
og	Orange-G	Animal: Connective tissue – orange. Plant: Acidophilic cytoplasm and cell walls – orange.
ost & h	Osmium Tetroxide & Hematoxylin	Lipids, fats – black; nuclear material – deep blue.
p	Phloxine	Collagen and other non-nuclear tissue elements – bright rose.
pt	Phloxine/ Tartrazine	Inclusion bodies – red; nuclei – blue; background – yellow.
pb	Prussian Blue	Hemosiderin – blue or green.
pas	Periodic Acid Schiff Reaction	Nuclei and other tissue elements – color of counter stain. Glycogen, starch, cellulose – red.
qs	Quadruple	Plant tissue: Safranin O stains nuclei, chromosomes, lignified and cutinized cell walls red. Fast Green stains cytoplasm and cellulose cell walls green. Crystal Violet stains starch grains purple. Orange G stains acidophilic cytoplasm and cell walls yellow to green.
rs	Robinow's	Nuclear matter – pink; cytoplasm – blue.
s	Saffron	Connective tissue – yellow.
sb	Sudan Black	Fat bodies – black; cell walls – pink.
so	Safranin O	Nuclei, chromosomes, lignified and cutinized cell walls – red.
si	Silver impreg. (Cajal, Golgi)	Neurons – yellow to black; neurofibrils, axis cylinders – brown to black; neuroglia – black.
sls	Silver Line System	Shows Kinety lines.
sr	Sudan Red	Fat tissue – red.
t	Triosin	General cytoplasmic structure – red or orange.
tb	Trypan Blue	Vital dye engulfed by phagocytotic cells – blue.
tlb	Toluidine Blue	Mucin – reddish violet.
v	Verhoeff	Elastic fibers – blue to black; nuclei – blue to brownish-black.
w	Woelke's Myelin Sheath	Myelin sheath – blue; background – clear; glial cells, nucleoli of neurons – black.
wr	Wright's	Erythrocytes – yellowish red. Polymorphonuclears: nuclei – dark purple; granules – reddish lilac; cytoplasm – pale pink. Eosinophiles: nuclei – blue; granules – orange-red; cytoplasm – blue. Basophiles: nucleus – purple to dark blue; granules – dark blue. Lymphocytes: nuclei – dark purple; cytoplasm – blue. Platelets: granules – violet to purple.