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F. CONNECTIVE TISSUE STAINS

VAN GIESON STAINS AND VARIANTS

PRODUCT NO.	STAINING METHOD/REAGENTS	
	VAN GIESON'S METHOD FOR COLLAGEN FIBERS (1889)	
		Collagen, muscle and cornified epithelium
F - 350 - 3	Van Gieson's Solution	
* F - 350 - 4	Weigert's Iron Hematoxylin A &	
F - 350 - 5	Weigert's Iron Hematoxylin B	
	BIEBRICH SCARLET/PICRIC ANILINE BLUE STAIN <i>Lillie (1965)</i>	
		Collagen, reticulum, muscle, plasma
F - 352 - 1	Biebrich Scarlet, 0.2% in 1% Acetic Acid	
F - 352 - 2	Aniline Blue, 0.1% in Sat. Picric Acid	
F - 352 - 3	Weigert's Iron Hematoxylin B &	
* F - 352 - 4	Weigert's Iron Hematoxylin A	
F - 352 - 7	Acetic Acid, 1%, Aqueous	
	LILLIE'S ALLOCHROME METHOD (1951)	
		Distinction between basement membrane and reticulum fibers, etc.
F - 355 - 1	Schiff's Reagent <i>Refrigerate!</i>	
F - 355 - 2	Aniline Blue, 0.04% in Sat. Picric Acid	
* F - 355 - 3A	Weigert's Iron Hematoxylin A &	
F - 355 - 3B	Weigert's Iron Hematoxylin B	
F - 355 - 4	Periodic Acid, 0.5%, Aqueous	
F - 355 - 5	Sodium Metabisulfite, 0.5%, Aqueous	
	PUCHTLER-SWEAT METHOD FOR BASEMENT MEMBRANES (1964)	
		Basement membranes
* F - 356 - 1	Resorcin-Fuchsin Solution	
F - 356 - 2	Nuclear Fast Red (Kernechtrot) Solution	
F - 356 - 3	Periodic Acid, 0.5%, Aqueous	
F - 356 - 4	Sodium Bisulfite Solution	
	PICROSIRIUS RED STAINING OF CARDIAC MUSCLE FOLLOWING PHOSPHOMOLYBDIC ACID TREATMENT <i>Dolber (1987)</i>	
		Reveals thin septa and collagen fibers clearly
F - 357 - 1	Phosphomoybdic Acid, 0.2%, Aqueous	
F - 357 - 2	Sirius Red, 0.1% in Sat'd Picric Acid	
F - 357 - 3	0.01N Hydrochloric Acid	

*denotes extra hazard charge

STAINS WITH A POLY-ACID STEP

PRODUCT NO.	STAINING METHOD/REAGENTS	
	MALLORY'S ANILINE BLUE COLLAGEN STAIN (1938, 1900)	
		Collagenous and reticular fibers
F - 360 - 1	Acid Fuchsin, 0.5%, Aqueous	
F - 360 - 2	Aniline Blue - Orange G	
F - 360 - 3	Lugol's Iodine	
F - 360 - 4	Sodium Thiosulfate, 5%, Aqueous	
	MASSON'S TRICHOME STAIN (1929)	
		Nuclei, collagen, keratin, negative image of Golgi apparatus, etc.
F - 362 - 1	Regaud's Hematoxylin Solution OR F - 362 - 5 and F - 362 - 6	
* F - 362 - 2	Picric Alcohol Solution II	
F - 362 - 3	Ponceau-Acid-Fuchsin Solution	
F - 362 - 4	Aniline Blue Solution	
* F - 362 - 5	Weigert's Iron Hematoxylin A &	
F - 362 - 6	Weigert's Iron Hematoxylin B	
F - 362 - 7	Phosphomolybdic Acid, 1%, Aqueous	
F - 362 - 8	Acetic Acid, 1%, Aqueous	
F - 362 - 9	Ferric Ammonium Sulfate 5% (Aq) OR	
* F - 362 - 9A	Bouin's Fluid	
	LILLIE MODIFICATION OF MASSON'S TRICHOME <i>Lillie (1940)</i>	
		Cells, cytoplasm muscle and collagen of mammalian tissue
F - 364 - 1	Phosphomolybdic-Phosphotungstic Acid Sol'n	
F - 364 - 2	Weigert's Iron Hematoxylin B &	
* F - 364 - 3	Weigert's Iron Hematoxylin A	
F - 364 - 6	Biebrich Scarlet Solution, 1%	
F - 364 - 7	Fast Green FCF Solution, 2.5%	
F - 364 - 8	Acetic Acid, 1%, Aqueous	
F - 364 - 9	Lugol's Iodine OR	
F - 364 - 9A	Gram's Iodine	
F - 364 - 10	Sodium Thiosulfate, 5%, Aqueous	
	MASSON'S TRICHOME FOR CONNECTIVE TISSUE <i>Sheehan and Hrapchak (1980)</i>	
		Nuclei, argentaffin granules, collagen, cytoplasm, keratin, etc.
* F - 367 - 1	Bouin's Fixative	
* F - 367 - 2A	Weigert's Iron Hematoxylin A	
F - 367 - 2B	Weigert's Iron Hematoxylin B	
F - 367 - 3	Biebrich-Scarlet-Acid Fuchsin Solution	
F - 367 - 4	Phosphomolybdic-Phosphotungstic Acid Sol'n	
F - 367 - 5	Aniline Blue Solution	
F - 367 - 6	Acetic Acid, 1%	

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ELASTIC TISSUE STAINS

PRODUCT NO.	STAINING METHOD/REAGENTS
	A MODIFIED VERHOEFF ELASTIC-VAN GIESON <i>Garvey (1991)</i>
* F - 369 - 1	Alcoholic Hematoxylin 3%
F - 369 - 2	Ferric Chloride, 2%
F - 369 - 3	Lugol's Iodine
F - 369 - 4	Ferric Chloride, 0.4%
F - 369 - 5	Van Gieson's Solution
	Nuclei, elastic fibers, collagen fibers and muscle
	WEIGERT'S RESORCIN FUCHSIN <i>Lillie (1965); Mallory (1938); Weigert (1898)</i>
* F - 370 - 1	Resorcin-Fuchsin Solution
F - 370 - 3B	Van Gieson's Solution
* F - 370 - 4A	Weigert's Iron Hematoxylin A (optional)
F - 370 - 4B	Weigert's Iron Hematoxylin B (optional)
* F - 370 - 5	Acid Alcohol, 1%
	Elastic fibers in blood vessel walls, nuclei and collagen
	VERHOEFF'S ELASTIC TISSUE STAIN <i>Oglive and Clark (1971); Verhoeff (1908)</i>
F - 371 - 1	Iron Solution
F - 371 - 2	Potassium Iodide, 3%, Aqueous
* F - 371 - 3	Alcoholic Hematoxylin, 10%
F - 371 - 4	Van Gieson Solution
	Elastic fibers and nuclei
	VERHOEFF'S VAN GIESON'S (VVG) <i>Sheehan and Hrapchak (1980)</i>
* F - 374 - 1	Alcoholic Hematoxylin, 5%
* F - 374 - 2	Ferric Chloride, 10%
F - 374 - 3	Weigert's Iodine
F - 374 - 4	Ferric Chloride, 2%
F - 374 - 5	Sodium Thiosulfate, 5%, Aqueous
F - 374 - 6	Van Gieson's Solution
	Elastic fibers, nuclei, collagen and other tissue elements
	MOLLIER'S QUADRUPLE STAIN (1938)
* F - 375 - 1	Orcein, 1% In Acid Alcohol
F - 375 - 2	Azocarmine G Solution, 0.1%
F - 375 - 3	Naphthol Green B, 1%
F - 375 - 4	Weigert's Iron Hematoxylin B &
* F - 375 - 5	Weigert's Iron Hematoxylin A
* F - 375 - 9	Acid Alcohol, 1%
F - 375 - 10	Phosphotungstic Acid, 5%, Aqueous
	Elastic fibers, collagen fibers, skeletal and smooth muscle, etc.

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PRODUCT NO.	STAINING METHOD/REAGENTS
	GOMORI'S ALDEHYDE FUCHSIN METHOD (1946)
* F - 378 - 1	Aldehyde Fuchsin Solution Elastic fibers and mucin
F - 378 - 2	Van Gieson's Solution, OR
F - 378 - 2A	Metanil Yellow Solution, 0.25% OR
F - 378 - 2B	Gomori's Trichrome Stain Refrigerate!
	HART'S METHOD FOR ELASTIC FIBERS <i>Mallory (1961)</i>
	Elastic fibers, collagen and nuclei
* F - 379 - 1	Resorcin-Fuchsin Stock Solution
F - 379 - 2	Van Gieson's Solution
F - 379 - 3	Potassium Permanganate, 0.25%, Aqueous
F - 379 - 4	Oxalic Acid, 5%, Aqueous
	FRASER-LENDRUM METHOD FOR FIBRIN <i>Lendrum, Fraser, Slidders, and Henderson (1962)</i>
	Fibrin, keratin, collagen, some granules and erythrocytes
F - 380 - 1	Celestine Blue Solution
F - 380 - 2	Mayer's Hematoxylin
F - 380 - 3	Orange G - Picric Acid Solution
F - 380 - 4	Acid Fuchsin Solution, 1%
* F - 380 - 5	Orange G - Picric Acid Differentiating Solution
F - 380 - 6	MacFarlane's Stock Solution OR
F - 380 - 6A	MacFarlane's Working Solution
F - 380 - 7	Light Green Solution, 2% in 1% GAA
F - 380 - 8	Lugol's Iodine OR
F - 380 - 8A	Gram's Iodine
F - 380 - 9	Sodium Thiosulfate, 5%, Aqueous
	CARSTAIRS METHOD FOR FIBRIN AND PLATELETS (1965)
	Fibrin and platelets
F - 381 - 1	Ferric Ammonium Sulfate, 5%, Aq.
F - 381 - 2	Mayer's Hematoxylin
F - 381 - 3	Picric Acid-Orange G Soln
F - 381 - 4	Ponceau Acid Fuchsin Soln
F - 381 - 5	Phosphotungstic Acid, 1%
F - 381 - 6	Aniline Blue Soln
	MALLORY'S PHOSPHOTUNGSTIC ACID HEMATOXYLIN METHOD (PTAH) <i>Cherukian 1977</i>
	Muscle, collagen, nuclei and fibrin
F - 382 - 1	Phosphotungstic Acid Hematoxylin Solution
* F - 382 - 5	Eosin Y, 1% Alcoholic
F - 382 - 6	Periodic Acid, 1%
	GOMORI'S ONE-STEP TRICHROME <i>Gomori (1950)</i>
	Muscle fibers, collagen and nuclei
F - 383 - 1A	Gomori's Trichrome w / Aniline Blue OR
F - 383 - 1	Gomori's Trichrome w / Light Green
* F - 383 - 2A	Weigert's Iron Hematoxylin A ...and
F - 383 - 2B	Weigert's Iron Hematoxylin B OR
F - 383 - 3	Gomori's Chromium Hematoxylin (2 months shelf-life!)
* F - 383 - 4	Bouin's Solution
F - 383 - 5	Acetic Acid, 0.5%, Aqueous
F - 383 - 6	Acetic Acid - Phosphotungstic Acid Solution

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PRODUCT NO.	STAINING METHOD/REAGENTS
	MOVAT'S PENTACHROME METHOD (1955) Elastic, collagen and reticulum fibers; fibrinoid, muscle, etc.
* F - 384 - 1A	Weigert's Iron Hematoxylin A &
F - 384 - 1B	Weigert's Iron Hematoxylin B
F - 384 - 2	Alcian Blue Solution, 1%
* F - 384 - 3	Resorcin-Fuchsin Solution
F - 384 - 4	Woodstain Scarlet-Acid Fuchsin Soln
* F - 384 - 5	Alcoholic Saffron Solution
* F - 384 - 6	Alkaline Alcohol
F - 384 - 8	Acetic Acid, 0.5%, Aqueous
* F - 384 - 9	Phosphotungstic Acid, 5%, Aqueous
	MODIFIED MOVAT'S <i>Silverman (1972)</i> Nuclei, cytoplasm, elastic fibers, collagen and bone, muscle, etc.
* F - 385 - 1	Alcian Blue, 1%
* F - 385 - 2	Alkaline Alcohol
* F - 385 - 3	Orcein, 0.2%
* F - 385 - 4	Hematoxylin Alcoholic, 5%
* F - 385 - 5	Ferric Chloride, 10%
F - 385 - 6	Lugol's Iodine
F - 385 - 7	Woodstain Scarlet-Acid Fuchsin Working
F - 385 - 8	Acetic Acid, 0.5%
F - 385 - 9	Phosphotungstic Acid, 5%
* F - 385 - 10	Alcoholic Saffron, 6%
	GOLDNER'S TRICHROME METHOD <i>Luna (1992)</i> Nuclear chromatin, cytoplasm, erythrocytes, muscle and collagen
* F - 386 - 1	Bouin's Fluid
* F - 386 - 2A	Weigert's Iron Hematoxylin A
F - 386 - 2B	Weigert's Iron Hematoxylin B
F - 386 - 3	Ponceau Acid Fuchsin
F - 386 - 4	Acetic Acid, 1%
* F - 386 - 5	Phosphomolybdic Acid-Orange G Solution
F - 386 - 6	Light Green Stock, 0.2%

SILVER METHODS

PRODUCT NO.	STAINING METHOD/REAGENTS
	BIELSCHOWSKY'S METHOD <i>Mallory (1938); Foot (1924); Foot and Menard (1927)</i>
* F - 390 - 1	Silver Nitrate, 10%, Aqueous Collagenous fibrils, muscle fibers, nuclei and reticulum
* F - 390 - 2	Sodium Hydroxide, 40%, Aqueous
* F - 390 - 3	Ammonium Hydroxide, Conc.
F - 390 - 4A	Delafield's Hematoxylin OR
F - 390 - 4B	Harris Hematoxylin w/o Mercury OR
* F - 390 - 4C	Weigert's Iron Hematoxylin A...and
F - 390 - 4D	Weigert's Iron Hematoxylin B
F - 390 - 5	Van Gieson's Solution
* F - 390 - 6	Alcoholic Iodine, 0.5%
F - 390 - 7	Sodium Thiosulfate, 0.5%, Aqueous
F - 390 - 8	Potassium Permanganate, 0.25%, Aqueous
F - 390 - 9	Oxalic Acid, 5%, Aqueous
F - 390 - 10	Silver Nitrate, 2%, Aqueous
* F - 390 - 11	Neutral Formalin, 5%
F - 390 - 12	Gold Chloride, 1%, Aqueous
F - 390 - 13	Sodium Thiosulfate, 5%, Aqueous

*denotes extra hazard charge

PRODUCT NO.	STAINING METHOD/REAGENTS	
	WILDER MODIFICATION OF BIELSCHOWSKY'S METHOD <i>Wilder (1935)</i>	Collagen and reticulum
* F - 392 - 1A	Silver Nitrate, 10.2%, Aqueous	
* F - 392 - 1B	Ammonium Hydroxide, Conc.	
F - 392 - 1C	Sodium Hydroxide, 3.1%, Aqueous	
* F - 392 - 2	Formalin, 40%, Neutralized	
F - 392 - 3A	Harris' Hematoxylin w/o Mercury OR	
F - 392 - 3B	Van Gieson's Stain	
F - 392 - 4	Nuclear Fast Red (Kernechtrot)	
F - 392 - 5	Phosphomolybdic Acid, 10%, Aqueous	
F - 392 - 11	Zinc Formalin w/Zinc Sulfate	
F - 392 - 9	Gold Chloride, 0.2%, Aqueous	
F - 392 - 10	Sodium Thiosulfate, 5%, Aqueous	
	GOMORI'S METHOD FOR RETICULUM (1937)	Reticulum fibers, especially in the central nervous system
* F - 393 - 1A	Silver Nitrate, 10%, Aqueous	
* F - 393 - 1B	Potassium Hydroxide, 10%, Aqueous	
* F - 393 - 1C	Ammonium Hydroxide, Concentrate	
F - 393 - 2	Potassium Permanganate, 0.5%, Aqueous	
F - 393 - 3	Potassium Metabisulfite, 2%, Aqueous	
F - 393 - 4	Ferric Ammonium Sulfate, 2%, Aqueous	
F - 393 - 5	Gold Chloride, 0.2%, Aqueous	
F - 393 - 6	Formalin, 20%	
F - 393 - 7	Sodium Thiosulfate, 2%, Aqueous	
	MANUEL'S METHOD FOR RETICULUM	
* F - 394 - 1A	Silver Nitrate, 10%, Aqueous	
* F - 394 - 1B	Ammonium Hydroxide, Conc.	
F - 394 - 2	Gold Chloride Solution, 1%, Aqueous	
F - 394 - 3	Nuclear Fast Red (Kernechtrot) Solution	
F - 394 - 7	Zinc Formalin w/ Zinc Sulfate	
F - 394 - 5	Formalin, 1%	
F - 394 - 6	Sodium Thiosulfate, 5%, Aqueous	
	SNOOK'S METHOD FOR RETICULUM (1944)	
* F - 395 - 1A	Silver Nitrate, 5%, Aqueous	
* F - 395 - 1B	Sodium Hydroxide, 10%, Aqueous	
* F - 395 - 1C	Ammonium Hydroxide, Conc.	
F - 395 - 2	Potassium Permanganate, 0.25%, Aqueous	
F - 395 - 9	Zinc Formalin W/Zinc Sulfate	
F - 395 - 4	Gold Chloride, 1% Aqueous	
F - 395 - 5	Nuclear Fast Red (Kernechtrot) Solution	
F - 395 - 6	Oxalic Acid, 5%, Aqueous	
F - 395 - 7	Formalin, 1%	
F - 395 - 8	Sodium Thiosulfate, 5%, Aqueous	
	JONES METHOD FOR KIDNEY (1951)	Basement membranes, reticulum fibers, collagen and nuclei
F - 396 - 1	Periodic Acid, 0.5%, Aqueous	
F - 396 - 2	Methenamine Solution, 3%, Aqueous	
* F - 396 - 3	Silver Nitrate, 5%, Aqueous	
F - 396 - 4	Borate Buffer Working Solution	
F - 396 - 5	Gold Chloride, 0.2%, Aqueous	
F - 396 - 6	Harris' Hematoxylin w/o Mercury	
* F - 396 - 7	Alcoholic Eosin Y Staining Solution	
F - 396 - 9	Sodium Thiosulfate, 3%, Aqueous	
F - 396 - 11	Potassium Ferricyanide, 0.5%, Aqueous	
F - 396 - 12	Sodium Metabisulfite, 3%, Aqueous	
* F - 396 - 13	Acid Alcohol, 1%	
F - 396 - 14	Ammonia Water, 0.3%	

*denotes extra hazard charge

KERATIN STAINS

PRODUCT NO.	STAINING METHOD/REAGENTS	
	AYOUB-SHKLAR METHOD FOR KERATIN AND PREKERATIN (1963)	
F - 400 - 1	Acid Fuchsin Solution, 5%, Aqueous	Keratin, stratified squamous epithelium, stratum spinosum, etc.
F - 400 - 2	Aniline Blue - Orange G Solution	
	DANE'S METHOD FOR PREKERATIN, KERATIN, AND MUCIN (1963)	
F - 401 - 1	Phloxine Solution, 1%, Aqueous	Keratin, prekeratin, acid mucopolysacharides and nuclei
F - 401 - 2	Alcian Blue Solution, 0.5%	
F - 401 - 3	Orange G Solution	
F - 401 - 4	Mayer's Hematoxylin	