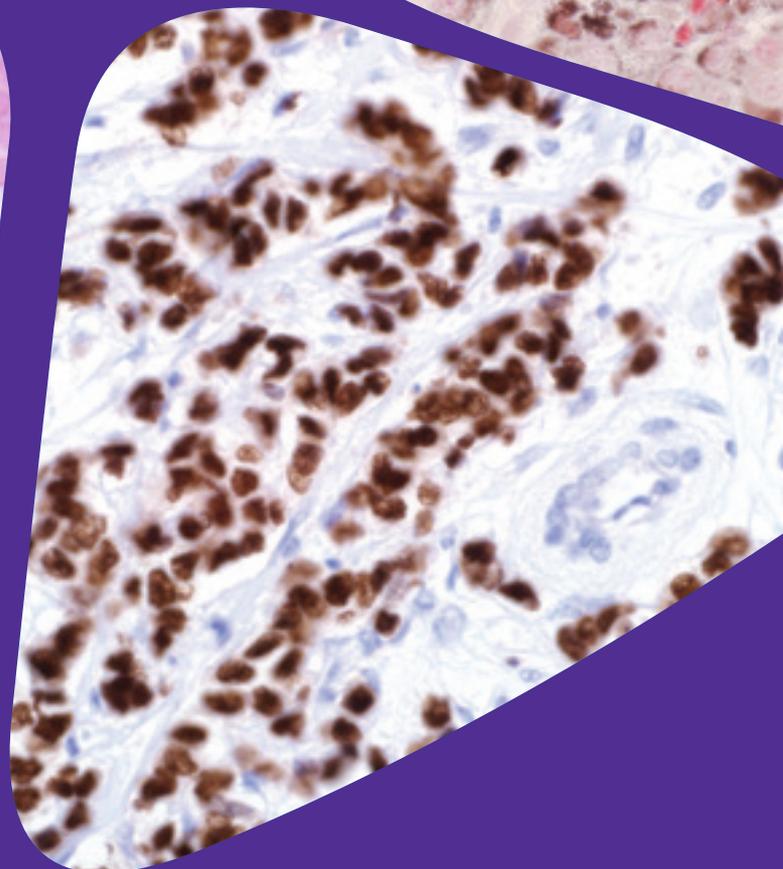
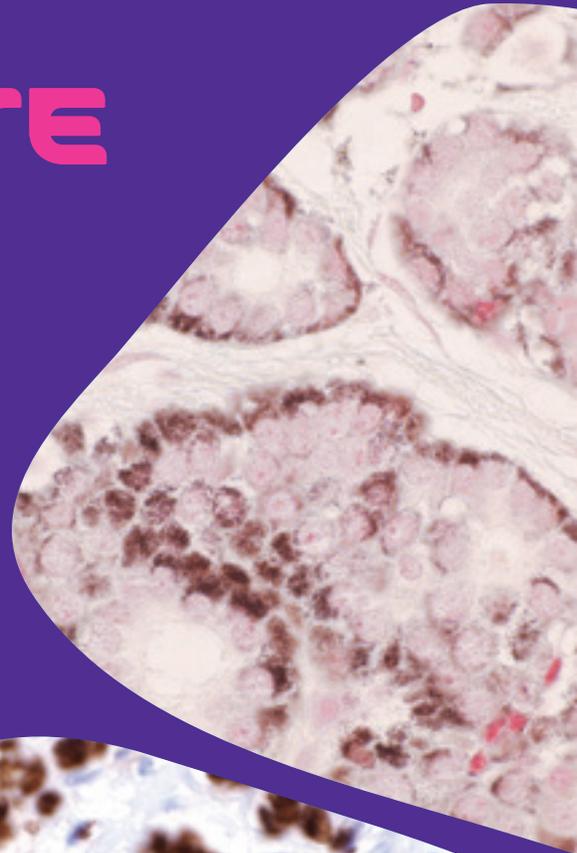
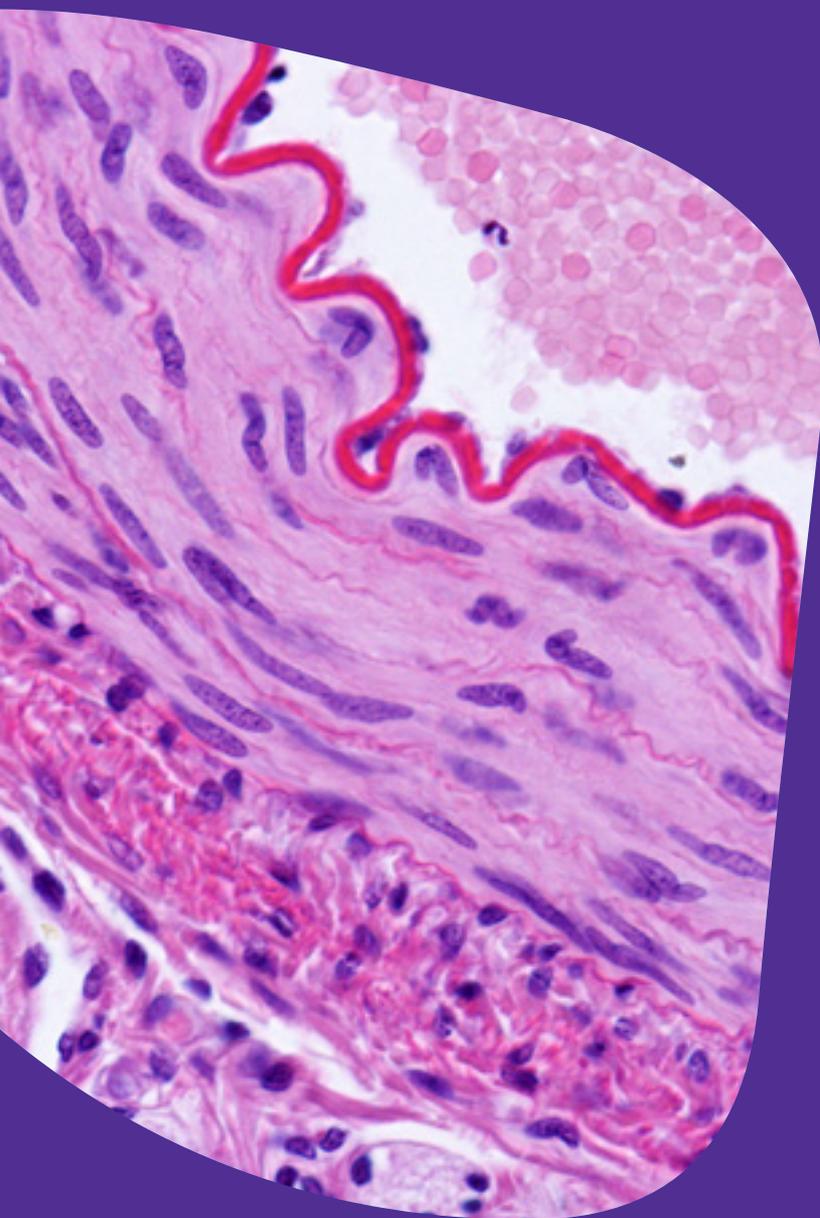


MERCK

MAKE EVERY MINUTE COUNT

COMPLETE PATHOLOGY SOLUTIONS



The life science business of Merck operates as MilliporeSigma in the U.S. and Canada.

all the
right tools.

always ready
for you.

Discover the next breakthrough — and see the impact you can make on the world.

With our complete pathology solution, you get the right tools, products and superior customer support throughout your entire workflow. Now you can have confidence in the quality of every result and look boldly toward tomorrow.

**With our one-stop pathology solution, there's
no limit to what you can do:**

find the diagnosis faster, save a life, change the world.



Sample Collection and Handling

- Dissection Tools
- Ancillary Components (slides, coverslips, etc.)



Immunohistochemistry

- SNAP i.d.[®] Protein Detection System
- Chromogenic Substrates
- Antigen Retrieval
- Research Use Antibodies
- Cell Marque™ IVD Antibodies



Fixation and Processing

- Fixatives
- Solvents
- Mounting Media
- Embedding Media



Water Purification Solutions



Tissue Staining

- Routine Stains
- Special Stains
- TISSUE-TROL™ Control Slides

Single products used as Fixatives, Tissue processing agents, Mounting Media and Embedding Media and many Stains belong to the group of *In Vitro* Diagnostic (IVD) medical devices. According to US FDA regulation they are classified being Class I, exempt IVD's. Most of them comply with the EU IVD Directive, bearing the CE logo on the label.

Products included in this brochure are not available in all countries.
Contact your local sales representative or dealer for details.

Sample Collection and Handling

Dissection Tools

A selection of dissection instruments with consistent product quality you can trust.

- **Scissors** – Selection of stainless steel Micro-dissection, Mayo and Sharp forms all available with straight or curved blades
- **Scalpels** – Choose the system that suits you best, disposable with plastic handles or disposable stainless steel blades for use with reusable handles.
- **Forceps and Tweezers** – There is a wide variety of point styles and designs including Dumont, hemostatic and mosquito.



| Cat. No. | Product Description |
|----------|---|
| Z162507 | All-purpose tweezer set, 5 tweezers in a vinyl pouch, pkg of 1 set |
| F2394 | Bayonet forceps, stainless steel |
| Z692395 | Disposable scalpel No 10, individually wrapped |
| Z675776 | DissecTable™ reversible dissecting board polyethylene, pkg of 1 ea |
| Z265993 | Dissecting scissors, Mayo, curved |
| Z265977 | Dissecting scissors, Sharp, straight |
| F6521 | Jewelers forceps, Dumont No. 5 |
| F3767 | Micro-dissecting forceps, very fine point |
| S3146 | Micro-dissecting scissors, stainless steel straight, sharp point |
| S2646 | Scalpel blades, No. 10 |
| S2771 | Scalpel blades, No. 11 |
| S2896 | Scalpel handles, No. 3, stainless steel |
| Z168866 | Scissor-handle forceps, Kelly hemostatic, straight |
| Z509140 | Scissor-handle forceps, straight, Occulating |
| Z225304 | Stainless steel forceps, High-precision |
| Z168793 | Stainless steel forceps, Dissecting |
| Z168785 | Stainless steel forceps, Fine tip, curved |
| Z168777 | Stainless steel forceps, Fine tip, straight |
| Z680214 | Titanium tweezers, Style 2A |
| T5415 | Tweezers, Style #00, sharp, anti-magnetic stainless steel |
| T5790 | Tweezers, Style #4, needle-sharp, anti-magnetic stainless steel |
| T4662 | Tweezers, Style #5, Fine needle-sharp, Inox alloy |
| T4537 | Tweezers, Style #5, Fine needle-sharp, non-magnetic stainless steel |
| T4412 | Tweezers, Style #5, Fine needle-sharp, non-magnetic alloy |

Successfully start your pathology research with our one-stop product resources at your side. Now you have even more support to discover the next breakthrough. Find new ways to identify, control and prevent disease—and ultimately, improve patient care.

Collection Vessels

To make sample collection as simple as possible we have a range of plain vessels in a wide variety of volumes and designs. To supplement this we have tamper evident cap options and a selection of specialist vessels prefilled with preservatives.

| Cat. No. | Product Description |
|---------------------|--|
| Z740425 | HistoTainer™ I prefilled specimen container, tamper evident, volume 20 mL |
| Z740427 | HistoTainer™ I prefilled specimen container, tamper evident, volume 60 mL |
| Z186821 | All-purpose sampling containers capacity 4 1/2 oz |
| Z186848 | All-purpose sampling containers capacity 8 oz |
| Z645346 | Bijou sample container plain label |
| BR61815 | BRAND® jar with push-on lid polypropylene, capacity 40 mL |
| BR61820 | BRAND® jar with push-on lid polypropylene, capacity 80 mL |
| BR61960 | BRAND® jar with screw cap low-density polyethylene, capacity 30 mL |
| BR61950 | BRAND® jar with screw cap low-density polyethylene, capacity 5 mL |
| BR61970 | BRAND® jar with screw cap low-density polyethylene, capacity 90 mL |
| BR62310 | BRAND® jar with screw cap polypropylene, capacity 30 mL |
| BR62315 | BRAND® jar with snap-on PE-LD lid polystyrene, capacity 25 mL |
| BR62020 | BRAND® PFA sample jar with screw cap volume 180 mL |
| BR62005 | BRAND® PFA sample jar with screw cap volume 30 mL |
| BR62015 | BRAND® PFA sample jar with screw cap volume 90 mL |
| Z740379 | Eco-Friendly SpecTainer™, tamper evident, biodegradable, size 120 mL, sterile |
| Z740376 | Eco-Friendly SpecTainer™, tamper evident, biodegradable, size 60 mL, non-sterile |
| BAF175750003 | Snap Cap Vials capacity 11 mL |
| BAF175750040 | Snap Cap Vials capacity 148 mL |
| BAF175750013 | Snap Cap Vials capacity 48 mL |
| Z740422 | Tamper proof specimen containers, size 1000 mL |
| Z740420 | Tamper proof specimen containers, size 300 mL |
| Z740424 | Tamper proof specimen containers, size 5700 mL |
| Z645362 | Universal sample container with flow seal cap plain label |



Discover our complete product listing at [SigmaAldrich.com/histolabware](https://www.sigmaaldrich.com/histolabware)

Slides/Coverslips

Explore our comprehensive range of simple slides and coverslips along with cavity slides and specialist coatings.

- **Microscope Slides** – 4 sizes, 7 end options, 3 colors and available with cut or ground edges
- **Coverslips** – 9 sizes in 2 thicknesses
- **Specialist Options** – Cell chamber slides, coated slides, stick on chambers for microscope slides are just a few examples



| Cat. No. | Product Description |
|---------------------|--|
| BR475505 | BRAND® cavity slides, 76 mm × 26 mm, with 1 concavity |
| BR470820 | BRAND® cover glass, 24 mm × 60 mm |
| BR474702 | BRAND® microscope slide, cut edges, twin frosted end |
| BR474743 | BRAND® microscope slide, ground edges |
| Z681164 | Colored Microscope slides, blue |
| CLS40042 | Corning® epoxide coated slides |
| CLS40004 | Corning® GAPSTM II coated slides |
| CLS294775X25 | Corning® microscope slides, plain, 75 mm × 25 mm |
| CLS294775X50 | Corning® microscope slides, plain, 75 mm × 50 mm |
| C9802 | Cover glass, 22 mm × 22 mm |
| C9056 | Cover glass, 24 mm × 60 mm |
| GBL622305 | Grace Bio-Labs CoverWell™ perfusion chambers, 8 chambers 9 mm diam. |
| GBL716022 | Grace Bio-Labs HybriSlip™ hybridization cover, 22 mm × 60 mm |
| GBL666504 | Grace Bio-Labs Press-To-Seal silicone isolator, 20 mm diam. |
| GBL654004 | Grace Bio-Labs SecureSeal™ imaging spacer, 1 well, 13 mm diam. |
| Z688533 | Microscope slide-grids, disposable |
| S8400 | Microscope slides, frosted one end, 25 mm × 75 mm |
| S8902 | Microscope slides, plain, 25 mm × 75 mm |
| C7057 | Nunc® Lab-Tek® II Chamber Slide™ system |
| Z734756 | Nunc® Lab-Tek® II chambered coverglass, 4 wells, 1.7 cm ² /well |
| Z734853 | Nunc® Lab-Tek® II chambered coverglass, 8 wells, 0.7 cm ² /well |
| Z692255 | Superfrost microscope slides, white end, 76 mm × 26 mm |

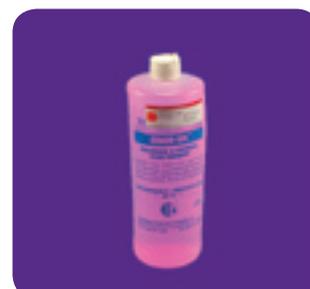
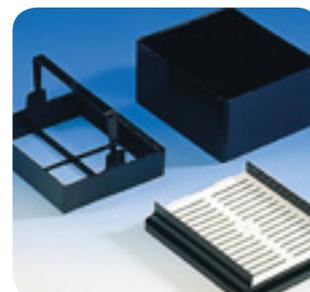
Staining Labware

We offer a variety of staining dishes and Coplin jars suitable for pathology, microscopy, microbiology and hematology. Dishes, covers and racks are manufactured from PMP, Black POM or soda-lime glass and resist stains from eosin or hematoxylin. Staining dishes are available in many configurations to accommodate up to 50 slides, with various plastic, glass and stainless steel racks.

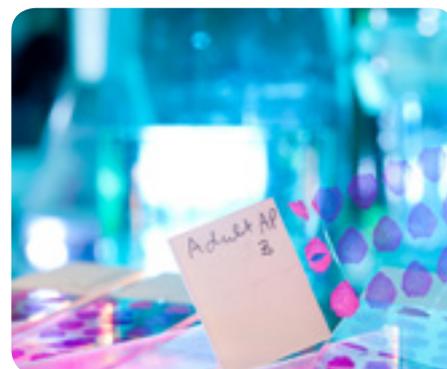
For immunostaining, we have a selection of staining trays that maintain humidity and reduce evaporation as well as PAP pens to ensure the minimum volume of precious reagent is used on each slide.

We can even help you if you end up staining your hands rather than your samples with a very effective stain remover.

| Cat. No. | Product Description |
|-----------------|---|
| BR472800 | BRAND® glass staining trough, Coplin pattern, soda-lime glass |
| BR472700 | BRAND® glass staining trough, Hellendahl extended, soda-lime glass |
| BR472500 | BRAND® glass staining trough, Schiefferdecker pattern, soda-lime glass |
| BR474400 | BRAND® plastic staining trough, Hellendahl pattern, with lid |
| BR472000 | BRAND® staining tray for glass staining trough, soda-lime glass |
| BR471400 | BRAND® staining tray, black, size 76 mm x 26 mm, for 25 slides, POM |
| BR471500 | BRAND® staining trough, black |
| BR471800 | BRAND® staining trough, complete with tray, black, for 25 slides |
| BR474305 | BRAND® transparent plastic staining tray, for 20 slides, use with transparent plastic staining trough |
| Z675776 | DissecTable™ reversible dissecting board polyethylene, pkg of 1 ea |
| Z151564 | Erado-Sol® liquid stain remover |
| Z358290 | Nalgene® staining box, L x W x H 12.5 cm x 12.5 cm x 5 cm |
| Z358304 | Nalgene® staining box, L x W x H 22.5 cm x 22.5 cm x 5 cm |
| Z377821 | PAP pen for immunostaining, 5 mm tip width |
| S5641 | Scienceware® Coplin staining jar with screw cap, high-density polyethylene |
| Z674664 | Slide spinner for slide drying |
| Z670146 | StainTray with black lid |
| Z670138 | StainTray with clear lid |
| S6141 | Wheaton Coplin staining jars, 20 slide staining dishes complete with covers, slide rack and handle |
| S5516 | Wheaton Coplin staining jars, 5 slide jar with ground glass cover |
| S5891 | Wheaton Coplin staining jars, 5 slide jar with plastic screw cap |
| S6016 | Wheaton Coplin staining jars, 8 slide jar with glass cover |
| Z103969 | Wheaton staining dishes includes: dish, rack, and handle |
| S5017 | Wheaton staining dishes, 20 slides, rack only |
| S4642 | Wheaton staining dishes, for 20 slides, dishes only |
| S4892 | Wheaton staining dishes, for 20 slides, dishes with covers only |



Fixation and Processing



Fixatives

Our fixatives are pre-formulated for direct use on tissue specimens allowing for efficient and safe protocols.

| Cat. No. | Product Description |
|--|---|
| HT101128-4L HT10132-1L | Bouin's solution – Prepared with saturated picric acid, formaldehyde and acetic acid. Excellent fixative for preserving soft and delicate structures. Used as a mordant in various trichrome procedures. |
| 252549-25ML 252549-500ML 252549-6X500ML 252549-1L 252549-4L 252549-4X100ML 252549-100ML | Formaldehyde solution, ACS reagent, 37 wt. % in H ₂ O – This product is a solution of approximately 37% by weight of formaldehyde gas in water. The product contains 10–15% methanol as a stabilizer to prevent polymerization. |
| HT5011-48X15ML HT5012-24X60ML HT5014-24X120ML HT501128-4L HT501320-9.5L HT501640-19L | Formalin solution, neutral buffered, 10% – Case containers are polypropylene with white leak-proof lids and are partially pre-filled with 10% NBF. Case sizes are 48×15 mL, 24×60 mL and 24×120 mL. Popular general purpose histological fixative. |
| A5472-1GA | Formalin Free Tissue Fixative 🌱 – A less toxic alternative to formalin. Performs well with PCR, <i>in situ</i> hybridization and immunohistological staining. |
| F5554-4L F5554-19L | Formalin, 10%, Neutral Buffered, Wintergreen Scented – Intended for use as a general purpose histological fixative. Wintergreen oil has been added to the standard formulation to provide a wintergreen scent. |
| F5304-4L | Formalin, 10%, Neutral Buffered with 0.03% Eosin – Intended for use as general histological fixative. The addition of the eosin to the formulation allows the user to more easily visualize small fragments of tissue during the transfer of the tissue from the fixative to the tissue cassette. |
| 103999 | Formaldehyde solution min. 37% free from acid stabilized with about 10% methanol and calcium carbonate for histology, 1L, 2.5L, 25L |
| H2904-100ML H2904-1L | HistoChoice® Tissue Fixative 🌱 – Designed for the molecular biologist. Specially formulated to preserve antigenic sites for antibody probes and nucleic acid sites for <i>in situ</i> hybridizations. Fixed sections do not require pre-digestion or other recovery procedures to make important sites available. |
| P6148-500G P6148-1KG P6148-5KG | Paraformaldehyde, reagent grade, crystalline – Recommended for use in the preparation of formalin fixatives for tissues or cells when the samples are to be used in fluorescence studies. |
| 101736 | OSTEOMOLL® fixation and decalcification in one step for bone and hard tissue: 1L, 2.5L |
| 100974 | Ethanol absolute, for analysis EMSURE® ACS, ISO, Reag. Ph Eur: 1L, 5L |
| P6744-1GA | Picric acid solution, 1.3% in H ₂ O (saturated) – For use as a colorimetric reagent in creatinine determination assay. For use as a general cytoplasmic stain, connective tissue fiber stain, and as a fixative for tissues. |
| Z2902-3.75L | Zinc Formalin Fixative – Excellent morphological preservation of nuclear and cytoplasmic components. Can replace neutral buffered formalin for routine tissue and immunohistochemical procedures. It is a non-precipitating fixative which can be used with automated and manual methods. |

New Line of Reagent Alcohol (RGA)

Merck is proud to introduce a new line of ethanol products. We now offer Tax-free Pure Ethanol and Reagent Alcohol (RGA) in a wide range of packaging options for your histology and pathology applications.

This new line of products is supported by a robust distribution network to ensure expedient delivery and low cost of delivery.

- Range of sizes and prices to suit any budget
- Dense distribution network – low shipping cost
- Not subject to federal excise tax
- Requires letterhead approval from the TTB for volumes greater than 4 liters

Reagent Alcohol (RGA)

| Cat. No. | Product Description |
|---------------|---|
| 793175 | 100% (200 proof), pkg sizes: 4x1GA, 5GA, 55GA, 270 GA |
| 793183 | 95% (190 proof), pkg sizes: 4x1GA, 5GA, 55GA, 270 GA |
| 793191 | 80% (160 proof), pkg sizes: 4x1GA |
| 793213 | 70% (140 proof), pkg sizes: 4x1GA |

Pure Ethanol

| Cat. No. | Product Description |
|---------------|--|
| 792799 | 190 proof, ACS reagent, meets USP testing specifications, pkg sizes: 24x1 PT, 20x1 GA, 120x1 PT, 4x1 GA, 55 GA, 5 GA |
| 792780 | 200 proof, ACS reagent, meets USP testing specifications, pkg sizes: 24x1PT, 4x1GA, 5GA, 55GA, 120 x 1Pt , 20 x 1 GA |

Alternative Tissue Clearing Agents

HistoChoice® Clearing Agent

HistoChoice® is a patented, complex mixture of agents that allow tissues to retain their structure, antigenic and nucleic acid binding sites. This formulation is non-citrus, and contains no mercury, formaldehyde or glutaraldehyde.

HistoChoice® Clearing Agent is suitable as an alternative to toluene and xylene for dewaxing paraffin tissue sections. Prepared slides are suitable for antibody probing applications and in situ hybridizations.

Features

- Non-toxic and odorless
- Preserves native antigenic and nucleic acid sites
- Tissues retain original structure
- Replaces common fixatives that are often toxic

| Cat. No. | Product Description |
|-----------------|-----------------------------|
| H2779-1L | HistoChoice® clearing agent |



Xylene Substitute

Non-toxic xylene replacement. Compatible with all tissue processors. May not be compatible with all permanent mounting medias.

| Cat. No. | Product Description |
|---------------------|---|
| A5597-1GAL | Xylene substitute |
| A5597-4X1GAL | |
| 109843 | Neo-Clear® is an aliphatic hydrocarbon clearing agent. A green substitute for xylene: 5L, 4 x 5L, 25L |

Classic Tissue Clearing Agents

| Cat. No. | Product Description |
|---------------|-------------------------------------|
| 534056 | Xylenes, histological grade |
| 472476 | Chloroform, ACS reagent, ≥99.8%(GC) |
| 179418 | Toluene, ACS reagent, ≥99.5%(GC) |
| M29908 | Methyl benzoate, ≥ 99% (GC) |
| M6752 | Methyl salicylate, ≥99% (GC) |
| 108298 | Xylene (isomeric mixture), 4 L |

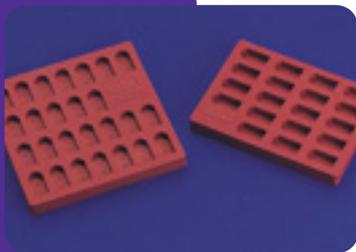
Discover our complete product listing at [SigmaAldrich.com/ethanol](https://www.sigmaaldrich.com/ethanol)

Tissue Processing

| Cat. No. | Product Description |
|---------------|---|
| 101736 | OSTEOMOLL® fixation and decalcification in one step for bone and hard tissue: 1L, 2.5L |
| 101728 | OSTEOSOFT® Decalcifying solution for sensitive hard material and bone marrow biopsies. Can be used for specimens in immunohistochemistry: 1L, 10L |

Mounting and Embedding Labware

Our reagent offering is supported by a wide range of assorted labware to aid in the embedding and mounting your samples.



| Cat. No. | Product Description |
|-----------------|--|
| BR112805 | BRAND® forcep with pointed ends PMP, L 115 mm |
| BR113105 | BRAND® forcep with pointed ends polyoxymethylene, L 100 mm |
| BR113125 | BRAND® forcep with rectangular ends PTFE, L 100 mm |
| E4140 | Embedding molds 19 Flat bullet-shaped unindexed cavities, clear |
| E4390 | Embedding molds 19 Flat bullet-shaped unindexed cavities, maroon |
| E4015 | Embedding molds 26 Flat bullet-shaped cavities double-indexed with numbers and letters, clear |
| E4265 | Embedding molds 26 Flat bullet-shaped cavities double-indexed with numbers and letters, maroon |
| G2528 | Glass strips for thick section (Histology) knives |
| G2403 | Glass strips for thin section (EM) knives |
| Z648183 | Grid coating pen provides a thin layer of adhesive |
| Z676225 | Micro-cutting tool set for microscopy scale applications |
| Z374415 | Scienceware® microscope slide dispenser Holds approximately 72 slides |
| Z374407 | Scienceware® microscope slide holder accepts up to 10 single or double slides standing on end |
| Z374385 | Scienceware® slide box, hinged provides the utmost protection for up to 100 - 1×3 in. slides |
| Z648205 | Securline lab marker II lab marker, for use on plastic embedding cassettes and frosted end of slides |
| Z674664 | Slide spinner for slide drying AC input 110 V |
| Z648191 | STATMARK permanent marker for cassette & slide marking |
| Z648175 | Tissue capture pen one pen for two applications |
| Z672122 | Tissue processing/embedding cassettes with lid |

Discover our complete product listing at
SigmaAldrich.com/histolabware

Mounting Media

We have a range of natural and synthetic mounting media that provide an ideal platform to mount your valuable samples.

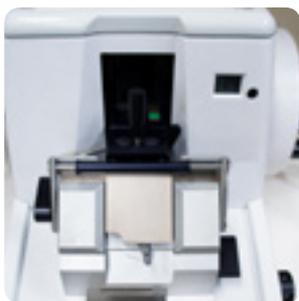
| Cat. No. | Product Description |
|---|--|
| I1161-30ML | ImmunoHistoMount™ - A permanent aqueous mounting medium designed for tissue sections and cell smears with peroxidase and alkaline phosphatase chromogens that cannot be dehydrated with organic solvents. |
| C1795-25ML C1795-100ML | Canada Balsam - A natural mounting medium obtained from balsam fir trees. The optical properties are nearly identical with those of glass. |
| C9368-30ML | CC/Mount™ - An aqueous based permanent mounting medium, similar to Crystal Mount™, for the permanent preservation of tissue sections stained with peroxidase and alkaline phosphatase based systems as well as with various fluorescent dyes. |
| GG1-15ML GG1-10X15ML | Glycerol Gelatin - Aqueous slide mounting media for histological use. Product must be warmed to 55-60 °C before use; at ~37 °C the product returns to semi-solid state. |
| O8015-30ML O8015-100ML | Organo/Limonene Mount™ 🌿 - This ready-to-use mounting medium is made with limonene, a natural product from orange peels. It is good for coverslipping stained tissues and cell smears that can be dehydrated with organic solvents. This mounting medium is suitable for organic solvent resistant immunohistochemistry (IHC) chromogens as well as an excellent choice for mounting H and E stained slides. |
| 109016 | Neo-Mount™ is a non-aqueous, user-friendly mounting medium designed to work with Neo-Clear® xylene substitute: 100mL, 500mL |
| 108635 | Kaiser's glycerol gelatine, phenol-free 100 g (dropper bottle) |



GO GREENER HISTOLOGY & HEMATOLOGY

Merck is committed to bringing safer greener alternatives to our customers.





Embedding Media

| Cat. No. | Product Description |
|------------------------|--|
| EM0100 | JB-4 Embedding Kit - JB-4 is a water-soluble, GMA based, plastic resin kit intended for use in the preparation of embedded samples for high resolution light microscopy. Yields 0.5µ-2µ sections |
| EM0200 | Osteo-Bed Bone Embedding Kit - Suitable for use with large and small mineralized (undecalcified) bone sections. Yields clear, hard blocks for cutting sections. Not water-soluble. |
| O8639 | Osteo-Bed Bone Embedding Solvent - For use with Osteo-Bed Bone Embedding Kit. Solvent for removal of plastic from sections prior to rehydration and staining. |
| P0091 | PolyFreeze - Water-soluble support matrix and a form of embedding medium for frozen sectioning. |
| EM0300 | Spurr Low Viscosity Embedding Kit - Low viscosity for exceptional penetration of tissue and other difficult matrices. |
| SHH0023-6X120ML | PolyFreeze Tissue Freezing Medium - A fast freezing support matrix for frozen tissue sectioning, Green |
| SHH0024-6X120ML | PolyFreeze Tissue Freezing Medium - A fast freezing support matrix for frozen tissue sectioning, Yellow |
| SHH0025-6X120ML | PolyFreeze Tissue Freezing Medium - A fast freezing support matrix for frozen tissue sectioning, Blue |
| SHH0026-6X120ML | PolyFreeze Tissue Freezing Medium - A fast freezing support matrix for frozen tissue sectioning, Clear |
| P3558-1KG | Paraplast® embedding media - Produces minimal tissue compression and wrinkle-free sections, and cuts to 4 µm thickness with excellent ribbon continuity. |
| P3683-1KG | Paraplast® Plus embedding media - Regular Paraplast with approx. 0.8% DMSO added for enhanced ease of infiltration and sectioning for tissues difficult to process with regular Paraplast. |
| P3808-1KG | Paraplast® Xtra embedding media - A unique blend of highly purified paraffin and low M.W. polymers for lower temperature infiltration and better compression resistance. |
| 111609 | Histosec® pastilles. Paraffin enriched with polymers: 1kg, 4 x 2.5kg, 25kg |
| 115161 | Histosec® pastilles without DMSO. Paraffin enriched with polymers: 4 x 2.5kg, 25 kg |
| 103693 | M-FREEZE™ cryo-embedding medium 100 mL |

Engineered Histology Bath Fluid

3M™ Novec™ Non-Flammable Bath Fluids

Environmentally Friendly and Non-Flammable Bath Fluid

Traditional fluids used for freezing histology samples (including isopentane) are highly flammable and toxic. This has implications for worker safety, operating procedures, building code compliance and liability. Today's laboratories demand a safer alternative without compromising performance. We are pleased to offer 3M™ Novec™ engineered fluids in convenient package sizes to meet your laboratory needs.

- Non-flammable, low toxicity
- High density = reduced frost
- Inert to embedding medium
- Inert to tissue sample
- Less volatile = lower evaporation
- Low global warming potential (GWP)
- Low odor

| Cat. No. | Product Description |
|----------------|---|
| SHH0001 | Description: 3M™ Novec™ 7000 Engineered Fluid, 1-methoxyheptafluoropropane, is a non-flammable, low global warming potential (GWP) heat transfer fluid capable of reaching -120°C. It is also useful as a direct expansion refrigerant |
| SHH0002 | 3M™ Novec™ 7100 Engineered Fluid, methoxy-nonafluorobutane (C4F9OCH3), is a clear, colorless and low-odor fluid intended to replace ozone-depleting substances (ODSs) and compounds with high global warming potential (GWP) in many applications |

Tissue Staining

Routine

Differential/Counter Stains

The combination of the nuclear stain hematoxylin and the plasma counterstain eosin Y is the most useful stain in the field of histotechnology. Various formulations of hematoxylin and eosin, prepared with dyes certified by the Biological Stain Commission, are supplied as ready-to-use solutions. Dyes, chemicals and general-purpose laboratory reagents are also available for customers wishing to prepare their own staining solutions. The histology product line includes reagents for *in vitro* diagnostic use for clinical laboratories.

Eosins

General purpose cytoplasmic stain highlighting in pink to red. Eosin Y stains protein in the cytoplasm due to its cell membrane permeability and attraction of the negatively charged dye to positively charge amino acid residues of proteins in the cytoplasm and in collagen and muscle fibers. Available in aqueous and alcoholic formulations.

| Cat. No. | Product Description |
|--|--|
| HT110116-500ML HT110132-1L HT110180-2.5L HT1101128-4L | Eosin Y solution, alcoholic – Certified Eosin Y, 0.5% (w/v) in acidified 90% ethanol |
| HT110316-500ML HT110332-1L HT110380-2.5L HT1103128-4L | Eosin Y solution, alcoholic, with phloxine – Certified Eosin Y, 0.1% (w/v) and certified phloxine B, 0.1% (w/v) in acidified ethanol |
| HT110216-500ML HT110232-1L HT110280-2.5L HT1102128-4L | Eosin Y solution, aqueous – Certified Eosin Y, 0.5% (w/v) in water, not acidified |

Hematoxylin

General purpose nuclear stain highlighting in dark blue to violet. Hematoxylin stains oligonucleotides in the nucleus due to its attraction and binding to the negatively charged oligonucleotide phosphate backbone.

| Cat. No. | Product Description | Cat. No. | Product Description |
|--|---|---|--|
| GHS116-500ML GHS132-1L GHS1128-4L | Hematoxylin Solution, Gill No. 1 – Used as a progressive cytology stain, used with hematoxylin and eosin staining, 2 g/L certified hematoxylin | MHS1-100ML MHS16-500ML MHS32-1L MHS80-2.5L MHS128-4L | Hematoxylin Solution, Mayer's – General purpose, progressive type, used as a counterstain for procedures such as immunohistochemistry or laser microdissection, 1 g/L certified hematoxylin |
| GHS216-500ML GHS232-1L GHS280-2.5L GHS2128-4L | Hematoxylin Solution, Gill No. 2 – May be used for cytology and/or histology as a progressive or regressive stain depending on length of staining time, 4 g/L certified hematoxylin | 109249 | Mayer's Hemalum solution: 500mL, 1L, 2.5L |
| GHS316-500ML GHS332-1L GHS380-2.5L GHS3128-4L | Hematoxylin Solution, Gill No. 3 – May be used for cytology and/or histology as a progressive or regressive stain depending on length of staining time, 6 g/L certified hematoxylin | HT1079-1SET | Weigert's iron hematoxylin solution, set – Recommended in lengthy or acidic stain procedures, resists discoloration, 1% hematoxylin in ethanol and Ferric chloride in dilute HCl |
| 105174 | Hematoxylin solution modified acc. to Gill III; 500mL, 1L, 2.5L | S5134-6X100ML | Scott's Tap Water Substitute Concentrate, 10x – Used as a "blueing reagent" in hematoxylin and eosin staining procedures, MgSO ₄ • 7H ₂ O, 200 g/L + NaHCO ₃ , 20 g/L |
| HHS16-500ML HHS32-1L HHS80-2.5L HHS128-4L | Hematoxylin Solution, Harris Modified – General purpose, regressive type, 7 g/L certified hematoxylin | A3179-1L A3429-4L | Differentiation Solution – Acidified alcohol solution for the differentiation of regressive hematoxylin stains, Acid Alcohol |

Special Stains

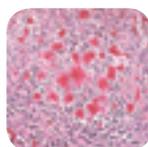
Special Staining Kits

Special stains are used to identify suspected pathogens or demonstrate specific cellular components that aid pathologists in the evaluation of disease states. We offer the most commonly utilized special stain products, with individual reagents available as prepared solutions or in convenient kit form. For customers wishing to prepare their own staining solutions we offer stains and dyes, as well as other chemicals and general purpose laboratory reagents required.

Amyloid Stain, Congo Red Kit

Cat. No.: HT60-1KT

Amyloid protein is detected in tissue with Congo red, a metachromatic stain. Staining is intensified by pretreatment of tissue with alkaline sodium chloride.



Components:

- Congo red solution (kit only), 500 mL
- Sodium chloride solution, alcoholic (kit only), 500 mL
- Sodium hydroxide solution (kit only), 2 × 12 mL

Silver Stain (Modified GMS) Kit

Cat. No.: HT100A-1KT

Silver stain is an aid in distinguishing fungi, basement membrane and opportunistic organisms such as *Pneumocystis carinii* in tissue sections or smears.



Components:

- Borax solution, 100 mL
- Gold chloride solution, 100 mL
- Periodic acid solution, 100 mL
- Silver methenamine reagent, 12 vials
- Sodium thiosulfate solution, 100 mL

Periodic Acid-Schiff Kit (PAS)

Cat. No.: 395B-1KT

Staining patterns of lymphocytes are helpful in making therapeutic decisions in established cases of lymphocytic leukemia. Cellular elements which may be demonstrated with the PAS procedure include glycogen, fungal walls, basement membrane, certain epithelial sulfomucins and sialomucins, neutral mucosubstances, colloid material of the thyroid and the pars intermedia of the pituitary.



Components:

- Hematoxylin solution, Gill No. 3 (kit only), 100 mL
- Periodic acid solution (395-1), 2 × 100 mL
- Schiff's reagent (kit only), 4 × 50 mL

Trichrome Stain (Masson) Kit

Cat. No.: HT15-1KT

Collagen and muscle fiber stain differentially when treated sequentially with Biebrich scarlet-acid fuchsin, PTA/PMA and aniline blue. Cytoplasm and muscle fibers stain red whereas collagen displays blue coloration.



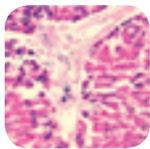
Components:

- Aniline blue solution (kit only), 250 mL
- Biebrich scarlet-acid fuchsin solution (HT15-1), 250 mL
- Phosphomolybdic acid solution (HT15-3), 250 mL
- PPhosphotungstic acid solution (HT15-2), 250 mL

Iron Stain Kit

Cat. No.: HT20-1KT

Deposits of loosely bound iron in erythrocytes, bone marrow, or tissue stain an intense blue when treated with acid ferrocyanide; according to the well-known Prussian blue reaction.



Components:

- Hydrochloric acid solution, 250 mL
- Potassium ferrocyanide solution, 250 mL
- Pararosaniline solution, 30 mL

Reticulum Stain Kit

Cat. No.: HT102A-1KT

Intended to demonstrate reticular fibers in paraffin sections. Useful in the differential diagnosis of certain type of tumors such as carcinomas, sarcomas, and lymphosarcomas.



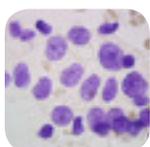
Components:

- Ferric ammonium sulfate solution, 500 mL
- Gold chloride solution, 100 mL
- Oxalic acid solution, 100 mL
- Potassium permanganate solution, 100 mL
- Silver nitrate solution, 50 mL
- Sodium hydroxide solution, 100 mL
- Sodium thiosulfate solution, 500 mL

DNA staining acc. to Feulgen Kit for quantitative determination of DNA

Cat. No.: 107907

The standardized Feulgen reaction is the method of choice for determining DNA in histological and cytological specimens. The significance of DNA content in diagnosis and prognosis in undifferentiated tumors is highly recognized.



Components:

- 5 M Hydrochloric acid, 2 x 250 mL
- Schiff's reagent, 2 x 250 mL
- Sodium metabisulfite concentrate, 250 mL

Elastica van Gieson's Kit for detection of elastic fibers

Cat. No.: 115974

Brilliant results are achieved for the visualization of fibers using resorcin-fuchsin solution according to Weigert's in association with van Gieson's picrofuchsin solution and nuclear staining with Weigert's iron hematoxylin solution.



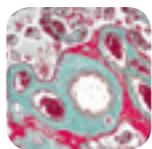
Components:

- Weigert's solution A – Alcoholic hematoxylin solution, 500 mL
- Weigert's solution B – Hydrochloric acid iron(III)nitrate solution, 500 mL
- Elastin acc. to Weigert's resorcin fuchsin solution, 500 mL
- Picrofuchsin solution acc. to van Gieson

Masson-Goldner Kit for visualizing connective tissue

Cat. No.: 100485

This "Masson-Goldner staining kit - for the visualization of connective tissue with trichromic staining" is used for human-medical cell diagnosis and serves the purpose of the histological investigation of sample material of human origin.



Components:

- Azophloxine solution, 500 mL
- Tungstophosphoric acid orange G solution, 500 mL
- Light green SF solution, 500 mL
- Acetic acid 10%, 500 mL

Weigert's iron hematoxylin kit

Cat. No.: 115973

Following nuclear staining with Weigert's iron hematoxylin, components such as muscle, cytoplasm and erythrocytes are stained with azophloxin and Orange G solution. Connective tissue is then counterstained with Light green SF solution.

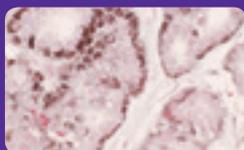


Components:

- Azophloxine solution, 500 mL
- Tungstophosphoric acid Orange G solution, 500 mL
- Light green SF solution, 500 mL
- Acetic acid 10%, 500 mL

NEW

Fontana-Masson Stain Kit



Cat. No.: HT200-1KT

Fontana-Masson staining is used for the demonstration of argentaaffin substances such as melanin, argentaaffin granules of carcinoid tumors and some neurosecretory granules. The 30X faster microwave procedure reduces incubation time: melanin stain time is reduced to 1 minute, argentaaffin stain time is reduced to 2 minutes.



Components:

- Silver Nitrate Solution, 50 mL
- Gold Chloride Solution, 125 mL
- Sodium Thiosulfate Solution, 125 mL

30x Faster!

Silver Plating Kit acc. to von Kossa Kit for the detection of calcium deposits

Cat. No.: 100362

This "Silver plating kit acc. to von Kossa - for detection of microcalcification" is used for human-medical cell diagnosis and serves the purpose of the histological investigation of sample material of human origin.



Components:

- Staining kit contains, 2 x 100-ml bottles
- Silver nitrate solution, 100 mL
- Sodium thiosulfate solution, 100 mL

Nuclear fast red-aluminum sulfate solution 0.1 %

Cat. No.: 100121

Silver plating methods are highly specific. They are used to visualize fine structures such as microcalcification. Silver ions of the silver nitrate solution react with the carbonate and phosphate ions of the calcium and displace the calcium ions.



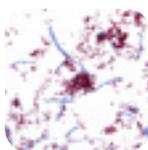
Components:

- Silver nitrate solution, 100 mL
- Sodium thiosulfate solution, 100 mL

Tb-color modified Kit for hot staining acid-fast bacteria

Cat. No.: 100497

Due to the high proportion of wax and lipids in the cell wall, mycobacteria absorb dyes "only very" slowly. To accelerate the uptake of fuchsin dye the carbolfuchsin solution applied to the specimen is normally heated until vapors evolve. The mycobacteria are thus referred to as being acid- and alcohol-fast in staining operations, and show up red on the microscope slide.



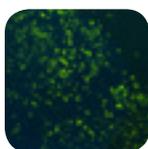
Components:

- Tb-color modified carbol-fuchsin solution, 500 mL
- Tb-color modified hydrochloric acid in ethanol, 2 x 500 mL
- Tb-color modified methylene blue solution, 500 mL

TB-fluor Kit for fluorescence staining acid-fast bacteria

Cat. No.: 109093

Fluorescence staining allows acid-fast rods to be easily identified even when their numbers are small. Depending on the filter, choose between two fluorescent dyes: Rhodamine B – red and Auramine O – yellowgreen. Potassium permanganate solution turns the background uniformly black in order to suppress troublesome intrinsic fluorescence of the specimen.



Components:

- Auramine-Rhodamine solution, 500 mL
- Decolorisation solution, 3 x 500 mL
- Counterstaining solution (KMnO₄), 2 x 500 mL

TISSUE-TROL™ Control Slides

Histology control slides are essential for formal quality assurance programs. Our slides are composed of paraffin-embedded tissue sections containing known characteristics and are used for monitoring staining performance in pathology laboratories.

| Cat. No. | Product Description |
|---------------|---|
| TTR001 | Acid Fast TISSUE-TROL™ Control Slides from mouse lung tissue containing <i>Mycobacterium gordonae</i> |
| TTR002 | Amyloid TISSUE-TROL™ Control Slides from Human heart tissue containing intracellular amyloid |
| TTR013 | Argentaffin TISSUE-TROL™ Control Slides from human intestine tissue containing argentaffin granules |
| TTR003 | Elastic TISSUE-TROL™ Control Slides from human skin containing elastic fibers |
| TTR004 | Fungi TISSUE-TROL™ Control Slides from mouse lung containing <i>Candida albicans</i> |
| TTR005 | Gram Stain TISSUE-TROL™ Control Slides from mouse lung tissue containing <i>Staphylococcus aureus</i> and <i>Escherichia coli</i> |
| TTR006 | Helicobacter TISSUE-TROL™ Control Slides from mouse intestine tissue containing <i>Helicobacter pylori</i> |
| TTR007 | Iron TISSUE-TROL™ Control Slides from human liver containing intracellular and extracellular iron |
| TTR014 | Melanin TISSUE-TROL™ Control Slides from human skin |
| TTR008 | Mucin TISSUE-TROL™ Control Slides from human intestine tissue containing mucins |
| TTR009 | PAS TISSUE-TROL™ Control Slides from human kidney |
| TTR010 | Reticulum TISSUE-TROL™ Control Slides |
| TTR011 | Spirochetes TISSUE-TROL™ Control Slides from rabbit testicle tissue containing spirochetes (<i>Treponema pallidum</i>) |
| TTR012 | Trichrome TISSUE-TROL™ Control slides from human liver |

Immunohistochemistry



SNAP i.d.® 2.0 Protein Detection System

SNAP i.d.® 2.0 Protein Detection System for Immunohistochemistry (IHC) introduces a new capability to the innovative, vacuum-driven SNAP i.d.® 2.0 system. The IHC frame and slide holders allow you to block, probe and stain up to 12 tissue slides per frame. Reduced handling time and multiple-slide processing make this system ideal for antibody and protocol standardization.

Key Benefits

- Eliminates the need for pap pens
- Antibodies can be collected and reused
- Slide handling time is significantly decreased
- Less time spent on wash steps
- Parallel processing of multiple slides
- Efficient, vacuum-driven slide washing saves time and can reduce background

Base System

The SNAP i.d.® systems for IHC contain everything you need to get started, including the detection base, IHC frame and incubation cover, slide holders, an assembly fixture, vacuum tubing and a Quick Start User Guide.

| Cat. No. | Product Description |
|------------------|--|
| SNAP2IHC | SNAP i.d.® 2.0 Protein Detection System - 1 IHC Frame (up to 12 slides) |
| SNAP2IHC2 | SNAP i.d.® 2.0 Protein Detection System - 2 IHC Frames (up to 24 slides) |

SNAP i.d.® 2.0 consumables

| Cat. No. | Product Description |
|-------------------|--|
| SNAP2FRIHC | SNAP i.d.® 2.0 IHC Frame |
| SNAP2SH | SNAP i.d.® 2.0 IHC Slide Holders 24/pk |

Chromogenic Substrates

Chromogenic substrates and enhancers are used to localize and increase the staining intensity of tissue specimens stained using immunohistochemistry. Typically the enzymes horseradish peroxidase (HRP) and alkaline phosphatase (AP) are used in conjunction with the appropriate chromogen/substrate to produce a reaction product that is then visualized using light microscopy.

| Cat. No. | Product Description |
|---|---|
| D0426 | SIGMAFAST™ DAB with Metal Enhancer – SIGMAFAST™ DAB (3,3'-Diaminobenzidine tetrahydrochloride) with Metal Enhancer Tablets have been developed for use in immunohistology as a precipitating substrate for the localization of peroxidase activity. The DAB reaction is enhanced by the addition of CoCl ₂ and produces a more intense stain which is resistant to alcohol. |
| D3939 | 3,3'-Diaminobenzidine (DAB) Enhanced Liquid Substrate System tetrahydrochloride – The DAB (3,3'-Diaminobenzidine tetrahydrochloride) Two-component Enhanced Liquid Substrate System is a precipitating substrate system for peroxidase. DAB Two-component Liquid Substrate System produces a brown precipitate for use in immunohistological and immunoblotting staining procedures. |
| AEC101 | AEC Staining Kit – The AEC (3-Amino-9-ethylcarbazole) Staining Kit contains universal reagents for staining peroxidase labeled compounds in immunohistochemistry and immunoblotting techniques. AEC produces an insoluble end product that is red in color. |
| F4648 F4523 | SIGMAFAST™ Fast Red TR/Naphthol AS-MX Tablets – Developed for use as a precipitating substrate for the detection of alkaline phosphatase activity in immunohistology. Contains 0.6 mM levamisole to block endogenous alkaline phosphatase activity. |
| R3783 | PermaRed/AP Kit – PermaRed/AP is a chromogenic substrate which produces a strong red color and is used for immunohistochemical (IHC) or <i>in situ</i> hybridization (ISH) detection of secondary antibodies conjugated to alkaline phosphatase (AP). After the enzymatic reaction is completed, the resulting dye is insoluble in organic solvents including alcohol and xylene, which allows tissue sections stained with PermaRed/AP to be dehydrated, cleared and mounted after staining. |
| SRE0079-50G SRE0079-250G | 3,3'-Diaminobenzidine tetrahydrochloride hydrate C ₁₂ H ₁₄ N ₄ · 4HCl · xH ₂ O – Elite quality level DAB produces a brown precipitate when oxidized by peroxidase. Used in immunohistological and immunoblotting staining procedures. |

Ancillary Reagents

| Cat. No. | Qty. | Product Description |
|----------------|--|--|
| 938B-03 | 50 mL predilute | Diamond: Antibody Diluent is a buffered solution for the dilution of both polyclonal and monoclonal antibodies as well as for the preparation of negative control reagents in IHC. It is designed to minimize the non-specific reaction that may be caused by the antibody and encourage specific antigen-antibody binding. Diamond: Antibody Diluent can also be used to stabilize diluted antibodies when stored at 2-8°C. |
| 938B-05 | 200 mL predilute | |
| 935B-06 | 200 mL concentrate | Tris Buffered Immunohistochemistry Wash Buffer + Tween® 20 is a 20X concentrated solution that is employed to rinse reagents off slides and to provide a medium for short-term storage of immunohistochemistry specimens in between application of reagents. When diluted, the ready to use solution is a 50mM Tris buffered solution with a pH range of 7.6±0.1. |
| 935B-09 | 1000 mL concentrate | |
| 954D-20 | 50 mL each predilute amplifier and polymer detector | The HiDef Detection™ Polymer System is a visualization system that is ready-to-use in immunohistochemical protocols. This two-step system uses an indirect method resulting in an antibody-enzyme complex that universally detects mouse and rabbit primary antibodies. |
| 954D-30 | 100 mL each predilute amplifier and polymer detector | |
| 957D-50 | 150 tests | DAB Substrate Kit is intended for use in immunohistochemistry (IHC) staining protocols. This reagent is designed to detect target antigens in formalin-fixed, paraffin-embedded tissue sections when used in conjunction with primary antibodies and appropriate secondary antibody conjugates in the IHC staining process. When in the presence of HRP polymer, DAB produces a brown precipitate that can be readily visualized using light microscopy. |
| 957D-20 | 500 tests | |
| 957D-60 | 1000 tests | |
| 957D-30 | 2000 tests | |
| 957D-40 | 5000 tests | |

Antigen Retrieval

Due to the cross-linking chemistry used in fixation it is often necessary to pre-treat a fixed tissue sample prior to immunostaining to make target epitopes accessible. We offer enzymes and buffers to accommodate both enzymatic and HIER (Heat Induced Epitope Retrieval) methods of antigen retrieval.

| Cat. No. | Product Description |
|----------------|--|
| SRE0063 | New - Tris-EDTA Buffer pH 9.0, Ready-to-use, Antigen Retriever, IVD - For use in Diagnostic applications for the heat induced epitope (or antigen) retrieval (HIER) of formalin-fixed, paraffin-embedded (FFPE) tissues prior to immunohistochemical (IHC) staining. |
| C9999 | Citrate Buffer, pH 6.0, 10x, Antigen Retriever - Used as a heat-induced antigen retriever on formalin-fixed paraffin-embedded (FFPE) tissue sections prior to application of antibodies. |
| E1161 | EDTA Buffer, pH 8.5, 10x, Antigen Retriever - Used as a heat-induced antigen retriever on formalin-fixed paraffin-embedded (FFPE) tissue sections prior to application of antibodies. |
| T6455 | Tris-HCl Buffer, pH 10, 10x, Antigen Retriever - Used as a heat-induced antigen retriever on formalin-fixed paraffin-embedded (FFPE) tissue sections prior to application of antibodies. |
| H3292 | Histo/Zyme, pH 7.2, Ready-to-use, Antigen Retriever - Histo/Zyme is a stabilized proteolytic enzyme in buffered solution, used to unmask immunoreactive sites altered by fixation and/or the embedding process. Treatment with a proteolytic enzyme in immunohistochemistry (IHC) is required to digest excess linkages and expose the antigen. The use of Histo/Zyme results in superior staining over traditionally used enzyme pretreatments, such as pepsin and trypsin. Moreover, Histo/Zyme requires only a brief incubation at room temperature. Performing antigen recovery with Histo/Zyme will allow you to dilute the primary antibody 5 to 10 fold further and achieve optimal staining. |
| R2283 | Pepsin - Used for proteolytic digestion of formalin-fixed paraffin-embedded (FFPE) tissue sections prior to application of antibodies. |
| 920P | Trilogy™ IHC Pretreatment Solution. Combines 3 pretreatment steps: deparaffinization, rehydration, and unmasking |

Featured Product

Trilogy™ – 3 Steps in 1

Trilogy™ is a product that combines the three pretreatment steps: deparaffinization, rehydration, and unmasking in immunohistochemistry stains. This product is completely biodegradable and non-toxic.

Trilogy™ may be used whenever immunohistochemistry staining is performed on formalin-fixed paraffin-embedded tissue sections. Using this product encourages standardization of the pretreatment procedure, thereby producing more consistent, more reliable results.



Products included in this brochure are not available in all countries.
Contact your local sales representative or dealer for details.

Merck KGaA
Frankfurter Strasse 250, 64293
Darmstadt, Germany

To place an order or receive technical assistance

Order/Customer Service: [SigmaAldrich.com/order](https://www.sigmaaldrich.com/order)
Technical Service: [SigmaAldrich.com/techservice](https://www.sigmaaldrich.com/techservice)
Safety-related Information: [SigmaAldrich.com/safetycenter](https://www.sigmaaldrich.com/safetycenter)

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