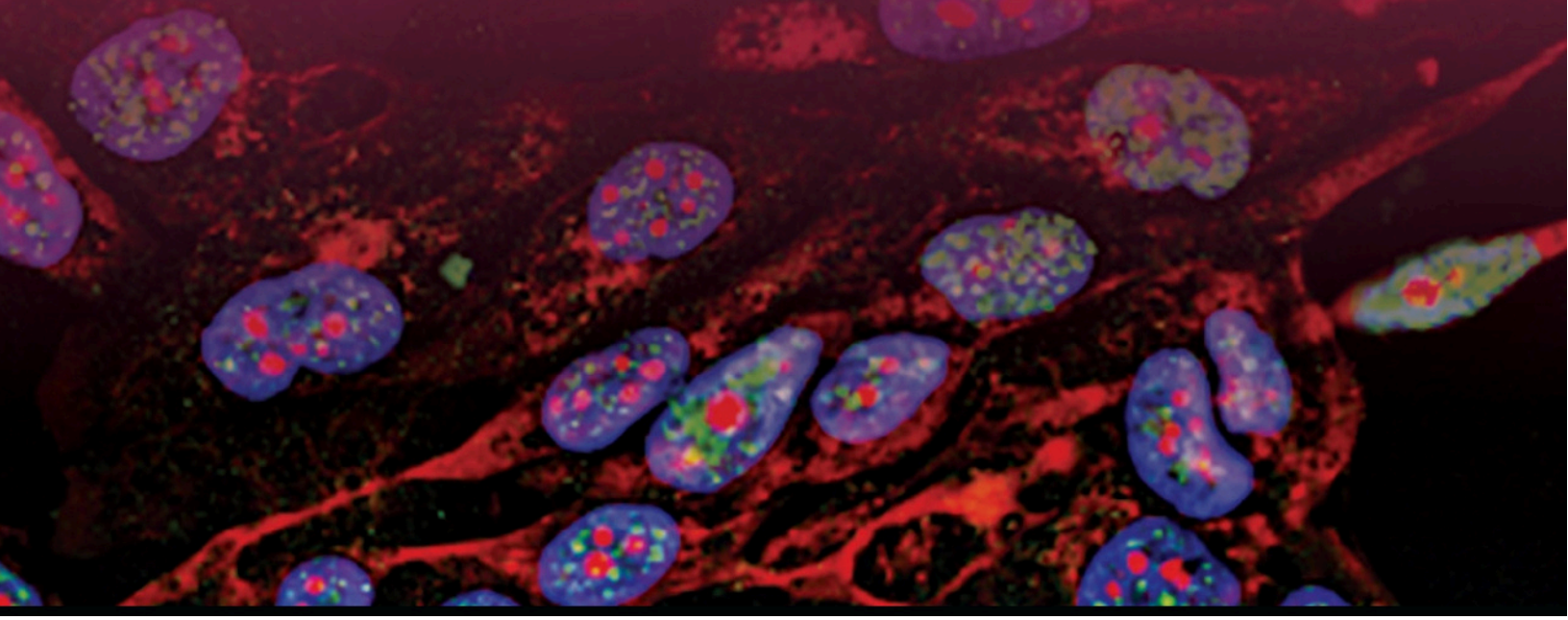
immunochemistry
TECHNOLOGIES

IMMUNOHISTOCHEMISTRY (IHC) REAGENTS



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Immunohistochemistry (IHC) is the method for localizing specific antigens in tissue or cells using antibodies, enzyme conjugates and substrate-chromogens. The antigen-antibody reaction can be visualized using an optical microscope and reveals both the relative abundance and location of the target protein in the sample. Antibodies used in IHC can be polyclonal or monoclonal in origin and are used by research and clinical laboratories to diagnose diseases and further our understanding of both biology and disease.

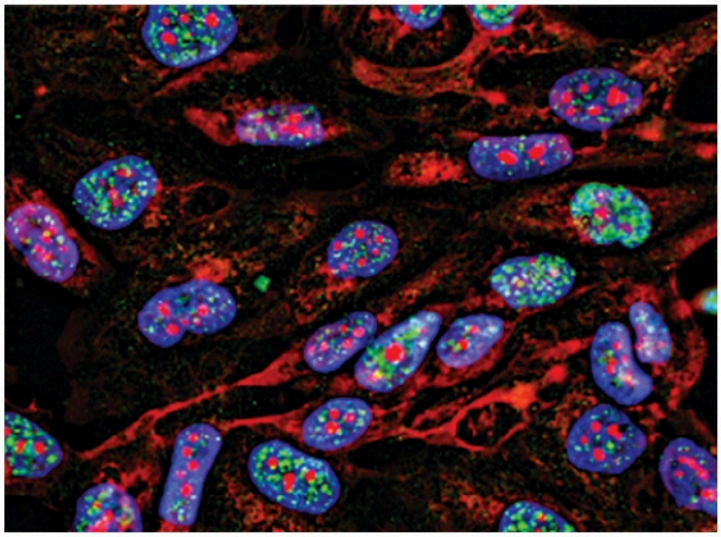
IMMUNOHISTOCHEMISTRY (IHC) PRODUCTS

We offer a wide range of IHC products, including:

- **ANTIGEN RETRIEVERS**
- **BLOCKING REAGENTS**
- **BUFFERS**
- **COUNTER STAINS**
- **CHROMOGENS**
- **MOUNTING MEDIA**

Mounting Media

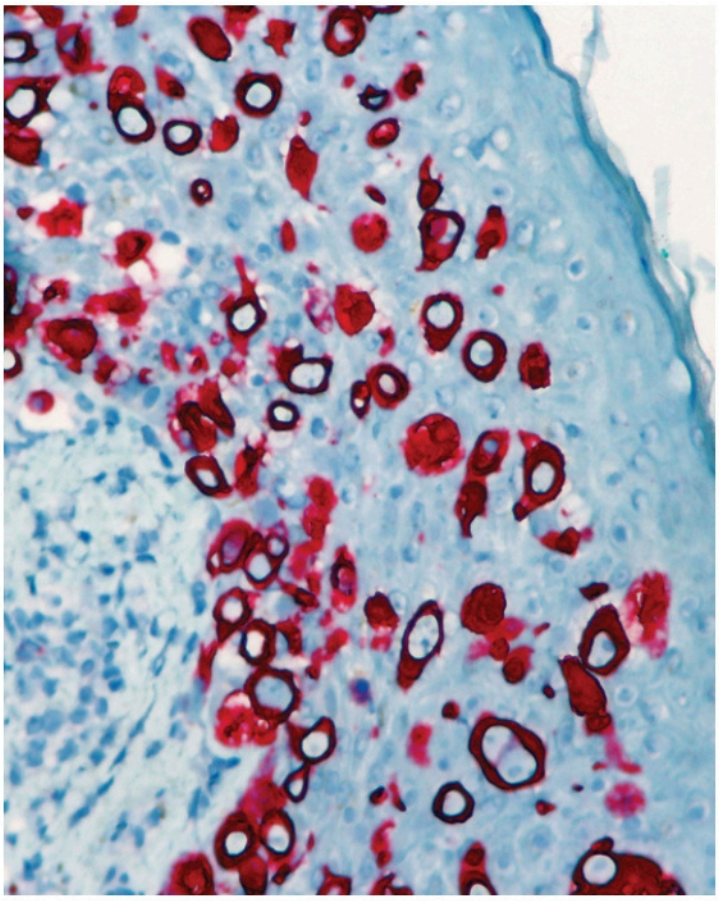
After immunochemical staining of cells or tissue samples, the stained sample is mounted between a glass slide and a glass coverslip using mounting media. Mounting media both protects and allows for high-resolution imaging of the sample. Careful selection of mounting media is critical to ensure compatibility with the imaging reporter being used (chromogenic or fluorescent), the sample type, and staining protocol. Accordingly, we offer a variety of optimized mounting media to meet these different requirements.



Non-Aqueous Mounting Medias are generally solvent-based or resin-based. Use of these mounting medias requires full dehydration of the stained sample (typically by passing the stained sample through a series of alcohol and xylene dehydration and clearing steps) prior to mounting and imaging. Non-aqueous mounting medias are 'hard-setting' or 'permanent' mounting medias meaning that once the sample has been mounted it cannot be unmounted for future

staining or analysis. Advantages of non-aqueous mounting medias include their ability to preserve the mounted sample indefinitely which is why non-aqueous mounting medias are the standard for clinical and pathology use. Disadvantages include the extra steps required to dehydrate the sample prior to mounting, use of toxic solvents, and inability to re-stain or retrieve the samples. Our AR-6504 Organo (Limonene) mount™ is a high quality, permanent, non-aqueous mounting media with superior optical properties.

Aqueous Mounting Medias are water-based mounting medias and are available in either 'hard-setting' (permanent) or 'soft setting' formulations. Hard-setting aqueous mounting medias have the advantage of providing a permanent mounting option (no nail polish needed to seal around edges of the coverslip) without all of the dehydration and clearing steps used for non-aqueous mounting. Soft-setting formulations do not compromise on optical properties but still allow flexibility to unmount and remount the samples as needed. Examples where unmounting and remounting are necessary include: staining optimization, advanced staining protocols where multiple rounds of antibody application/removal are performed, and in cases where the imaged sample must undergo additional analysis (e.g. mass spec, sequencing, etc.). We offer industry standard mounting medias in both aqueous hard-setting and soft-setting formulations complete with anti-fade agents to reduce photo-bleaching and available with DAPI nuclear stain to simplify your staining protocol.



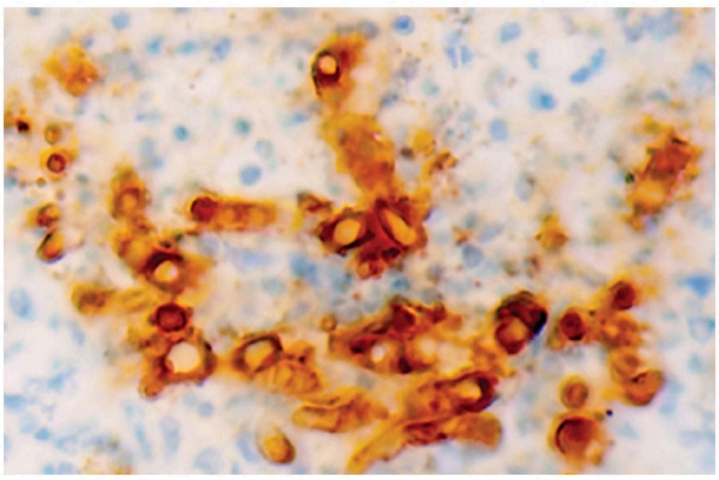
OUR MOUNTING MEDIA PRODUCTS INCLUDE:	
AR-6500	**FLUOROSHIELD™**
AR-6501	**FLUOROSHIELD™ WITH DAPI**
AR-6502	**FLUOROSHIELD™ WITH PI**
AR-6503	**IMMUNOHISTOMOUNT™**
AR-6504	**ORGANO / LIMONENE MOUNT™**
AR-6505	**FLUOROSHIELD™ WITH DAPI & DABCO**
AR-6506	**FLUOROSHIELD™ WITH DAPI & PROPYLGALLATE**
AR-6507	**IMMUNO IN SITU MOUNT™**
AR-6508	**GLYCEROL MOUNTING MEDIUM**
AR-6509	**GLYCEROL MOUNTING MEDIUM WITH DABCO**
AR-6510	**GLYCEROL MOUNTING MEDIUM WITH DAPI AND DABCO**
AR-6511	**GLYCEROL FLUORO MOUNT WITH PPD**
AR-6512	**IMMUNO FLUORO MOUNT™ WITH PPD**
AR-6513	**FLUOROSHIELD™ WITH DAPI & PPD**
AR-6514	**FLUOROSHIELD™ WITH PHENYLENEDIAMINE**
AR-6515	**FLUOROSHIELD™ WITH DABCO**
AR-6516	**IMMUNO MOUNT™**
AR-6517	**IMMUNO FLUORO MOUNT™**
AR-6518	**IMMUNO FLUORO MOUNT™ WITH DABCO**
AR-6519	**IMMUNO FLUORO MOUNT™ WITH DABCO AND DAPI**

		IMAGING REPORTERS				
		Flourescent dyes**, FITC, Texas Red, AMCA, GFP	R-PE, PC and APC	DAB	Fast Red, AEC, BCIP/ NBT, BCIP/INT	H&E
MOUNTING MEDIA TYPE	AQUEOUS-HARD SETTING	• AR-6500 Fluoroshield™ • AR-6501 Fluoroshield™ with DAPI • AR-6505 Fluoroshield™ with DAPI and DABCO • AR-6515 Fluoroshield™ with DABCO	• AR-6500 Fluoroshield™ • AR-6501 Fluoroshield™ with DAPI • AR-6505 Fluoroshield™ with DAPI and DABCO • AR-6515 Fluoroshield™ with DABCO	• AR-6503 ImmunoHistoMount	• AR-6503 ImmunoHistoMount	
	AQUEOUS-SOFT SETTING	• AR-6508 Glycerol Mounting Medium • AR-6509 Glycerol Mounting Medium with DABCO • AR-6510 Glycerol Mounting Medium with DAPI and DABCO		• AR-6516 Immuno Mount™	• AR-6516 Immuno Mount™	
	NON-AQUEOUS			• AR-6504 Organo (Limonene) Mount™		• AR-6504 Organo (Limonene) Mount™

**Fluorescent dyes include Alexa Fluors, Cy dyes, and other common commercially available fluorescent dyes
Abbreviations: AEC=Aminoethylycarbazole, H&E= Hematoxylin and Eosin; DAPl=4,6-diamidino-2-phenylindole; DABC0=1,4-Diazabicyclo[2.2.2]octane
Fluoroshield™ is available in multiple formulations – please visit our website

Counter Stains

After IHC staining of the target antigen, a second chemical stain is often applied to provide contrast that helps the primary staining product stand out. Many of these chemical counterstains show specificity for discrete cellular compartments or antigens, while others will stain the whole cell.

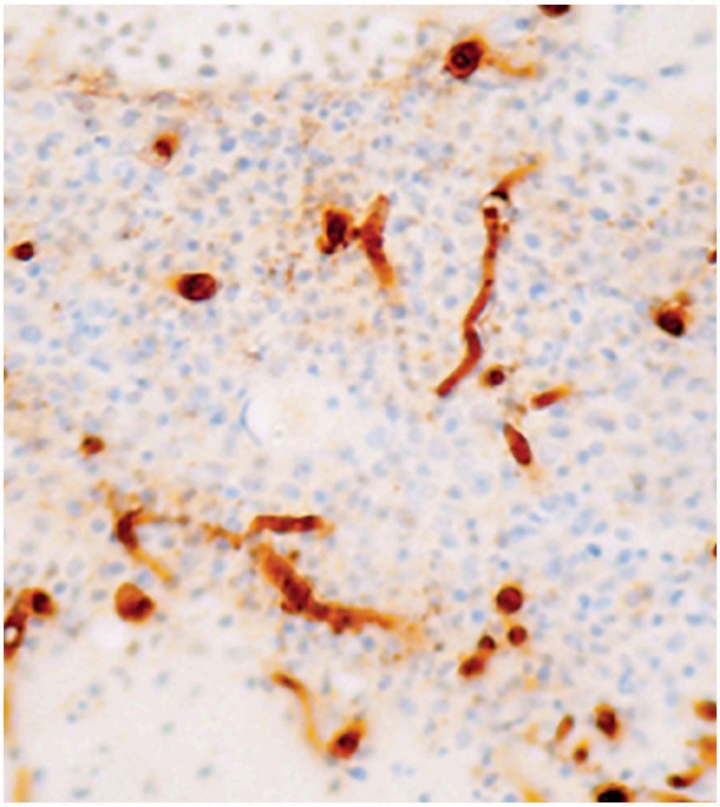


OUR COUNTER STAINING PRODUCTS INCLUDE:	
AR-6520	**HEMATOXYLIN, IMMUNO/HISTO AQUEOUS**
AR-6521	**HEMATOXYLIN, PROBE**
AR-6522	**EOSIN Y**
AR-6523	**IMMUNO RED AQUEOUS COUNTER STAIN™**
AR-6524	**NUCLEAR FAST RED**
AR-6525	**METHYLENE BLUE COUNTER STAIN**
AR-6526	**METHYL GREEN**

	CELLULAR COMPONENT STAINED		
	Nuclei/DNA	Cytoplasm/Collagen/Muscle Fibres	Protein
COUNTER STAIN REAGENT	• AR-6520 Hematoxylin, Immuno/Histo Aqueous • AR-6521 Hematoxylin, PROBE • AR-6524 Nuclear Fast Red • AR-6525 Methylene Blue Counter Stain • AR-6526 Methyl Green	• AR-6522 Eosin Y	• AR-6523 Immuno Red Aqueous Counter Stain™

Buffers

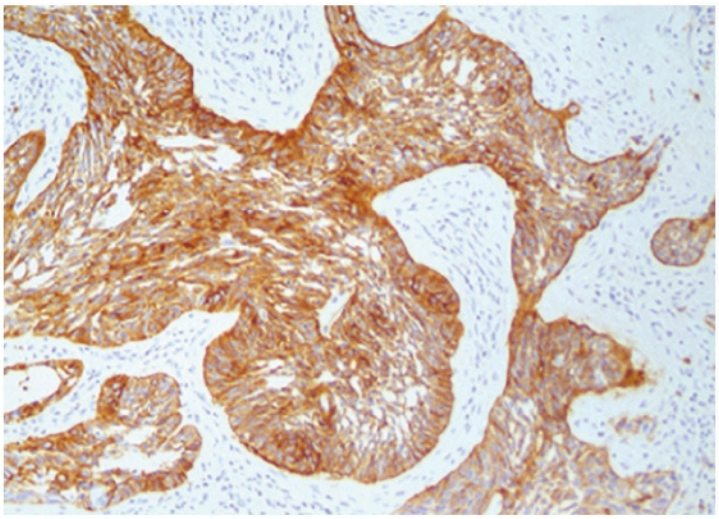
Buffer reagents play a vital role in IHC by providing optimal conditions for various steps of the staining process, including antigen retrieval, antibody dilution, and washing steps. These buffers help maintain the stability and activity of antibodies and other reagents while preserving tissue morphology. Overall, buffer reagents are essential components of the IHC workflow, ensuring optimal staining quality, specificity, and reproducibility in both research and clinical applications.



OUR IHC BUFFERS INCLUDE	
AR-6561	**IMMUNO AUTOMATION BUFFER™**
AR-6562	**UNIVERSAL ANTIBODY DILUTION BUFFER™**
AR-6563	**ANTIBODY DILUTION BUFFER, READY TO USE WITH BSA, IMMUNOGLOBULIN FREE**
AR-6564	**TRIS BUFFER, 10X**
AR-6565	**PHOSPHATE BUFFER, 10X**
AR-6566	**RIPA LYSIS BUFFER, 5X**
AR-6567	**PEROXIDASE STABILIZING BUFFER**

Antigen Retrievers

Antigen retrievers, also known as antigen retrieval methods or techniques, are utilized in IHC to enhance the detection of antigens within tissue samples. During tissue processing and fixation, antigen epitopes can become masked or altered, hindering their recognition by antibodies. Antigen retrieval involves treating tissue sections with various methods to reverse these alterations, thereby exposing the antigens for antibody binding. The most effective antigen retrieval method will depend upon the antigen itself, fixation technique, and sample type.

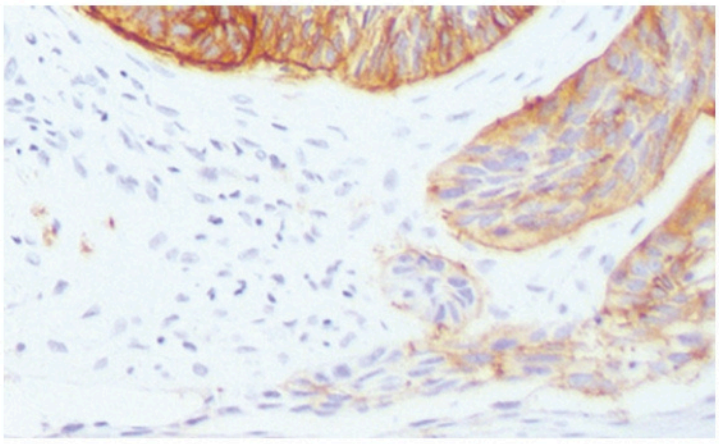


There are two main categories of antigen retrieval techniques- Proteolytic-Induced Epitope Retrieval (PIER), and Heat-Induced Epitope retrieval (HIER). PIER uses the proteolytic activity of enzymes to liberate epitopes that have been modified by fixation whereas HIER uses a combination of high heat and specific buffer solutions. We recommend testing two methods of HIER, for example Citrate buffer and EDTA buffer and if neither is successful then testing a PIER method such as Pepsin.

OUR ANTIGEN RETRIEVAL PRODUCTS INCLUDE:	
AR-6541	**TRYPSIN REAGENT**
AR-6542	**PRONASE REAGENT, READY TO USE**
AR-6543	**PEPSIN REAGENT, READY TO USE**
AR-6544	**CITRATE BUFFER, 10X**
AR-6545	**EDTA BUFFER, 10X**
AR-6546	**TRIS-HCL BUFFER, 10X**

Chromogens

Chromogens are colored molecules that provide a visual representation of the presence and distribution of the targeted protein in the tissue. The most common chromogens react with the enzymes horseradish peroxidase (HRP) or alkaline phosphatase (AP), which can be conjugated to primary or secondary antibodies.



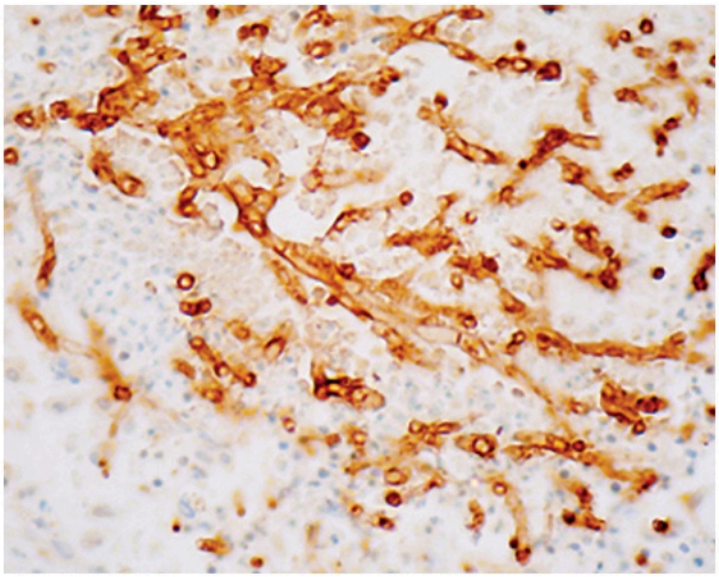
OUR IHC CHROMOGEN PRODUCTS INCLUDE:	
AR-8201	**AEC PEROXIDASE SUBSTRATE**
AR-8205	**PEROXIDASE SIGNAL ENHANCER**
AR-8206	**DIAMINOBENZIDINE (DAB) KIT**
AR-8211	**FAST RED SUPER™**
AR-8212	**BCIP/NBT**
AR-8214	**ALKALINE PHOSPHATASE ENHANCER**
AR-8225	**TMB-IHC PEROXIDASE**

	DETECTION ENZYME	
	HRP	Alkaline Phosphatase
CHROMOGEN REAGENT	• AR-8201 AEC Peroxidase Substrate • AR-8205 Peroxidase Signal Enhancer • AR-8206 Diaminobenzidine (DAB) Kit • AR-8225 TMB-IHC Peroxidase	• AR-8211 Fast Red Super™ • AR-8212 BCIP/NBT • AR-8214 Alkaline Phosphatase Enhancer

Abbreviations: AEC=Aminoethyl carbazole, TMB=Tetramethylbenizidine, BCIP/NBT=5-Bromo-4-chloro-3-indolyl phosphate/Nitroblue tetrazolium. See Mounting Media for details of compatible mounting media

Blocking Reagents

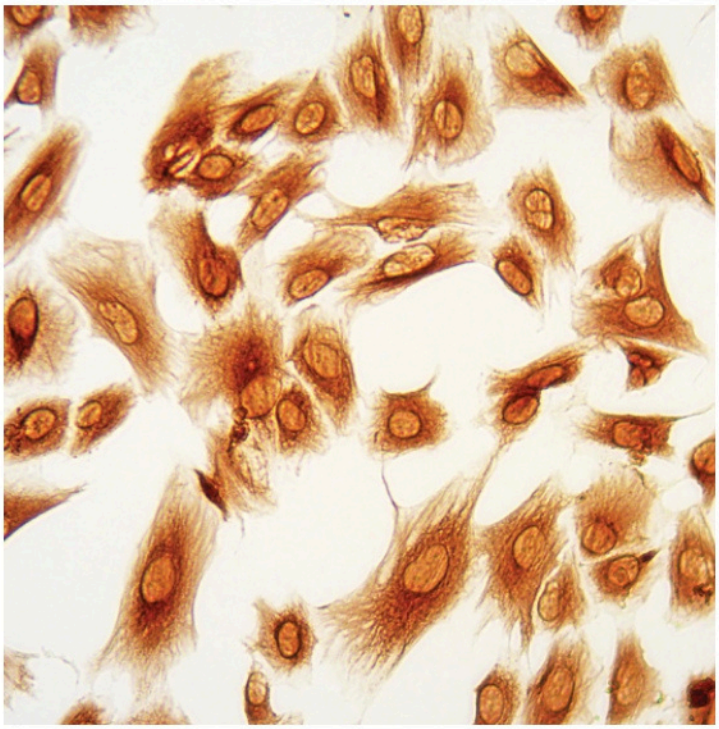
Blocking reagents are used in the field of immunohistochemistry to keep endogenous biotin, enzymes, and other molecules from interfering with the primary antibody binding to the target antigen. IHC blocking reagents can come in the form of sera, proteins, or synthetic agents. The selection of the appropriate blocking reagent depends on the type of tissue being studied, endogenous enzymes, and the species of the primary and secondary antibody being used.



OUR IHC BLOCKING REAGENTS INCLUDE:	
AR-6581	**PROTEIN BLOCKING REAGENT (ANIMAL SERUM FREE)**
AR-6582	**BSA (IGG AND PROTEASE FREE)**
AR-6583	**STREPTAVIDIN/BIOTIN BLOCKING KIT SET**
AR-6585	**AVIDIN/BIOTIN BLOCKING REAGENT SET**
AR-6586	**ENDOGENOUS PEROXIDASE BLOCK**
AR-6590	**IMMUNO BLOCKING SOLUTION WITH DONKEY SERUM**
AR-6591	**IMMUNO BLOCKING SOLUTION WITH GOAT SERUM**
AR-6593	**IMMUNO BLOCKING SOLUTION WITH RABBIT SERUM**

Proteins, Fluorophores & Conjugates

We offer a range of proteins, fluorophores and conjugates for use in immunohistochemistry techniques. Streptavidin-conjugated enzymes and fluorophores are used with biotinylated antibodies to detect the target protein. Biotinylated peroxidase and streptavidin are used as part of a signal amplification system with biotinylated antibodies. Protein A/G conjugates are used to detect IgG molecules.



OUR IHC PROTEINS AND PROTEIN CONJUGATES INCLUDE THE FOLLOWING:	
AR-6633	**PEROXIDASE CONJUGATED STREPTAVIDIN**
AR-6634	**FLUORESCEIN CONJUGATED STREPTAVIDIN**
AR-6637	**LYSOZYME BIOTIN CONJUGATED**
AR-6639	**STREPTAVIDIN~ALKALINE PHOSPHATASE**
AR-6641	**STREPTAVIDIN CONJUGATED WITH ALLOPHYCOCYANIN**
AR-6642	**STREPTAVIDIN CONJUGATED WITH TEXAS RED**
AR-6643	**PROTEIN A CONJUGATED R-PE**
AR-6644	**PROTEIN A CONJUGATED WITH FITC**
AR-6645	**PROTEIN G CONJUGATED WITH FITC**
AR-6646	**UREASE CONJUGATED WITH BIOTIN**

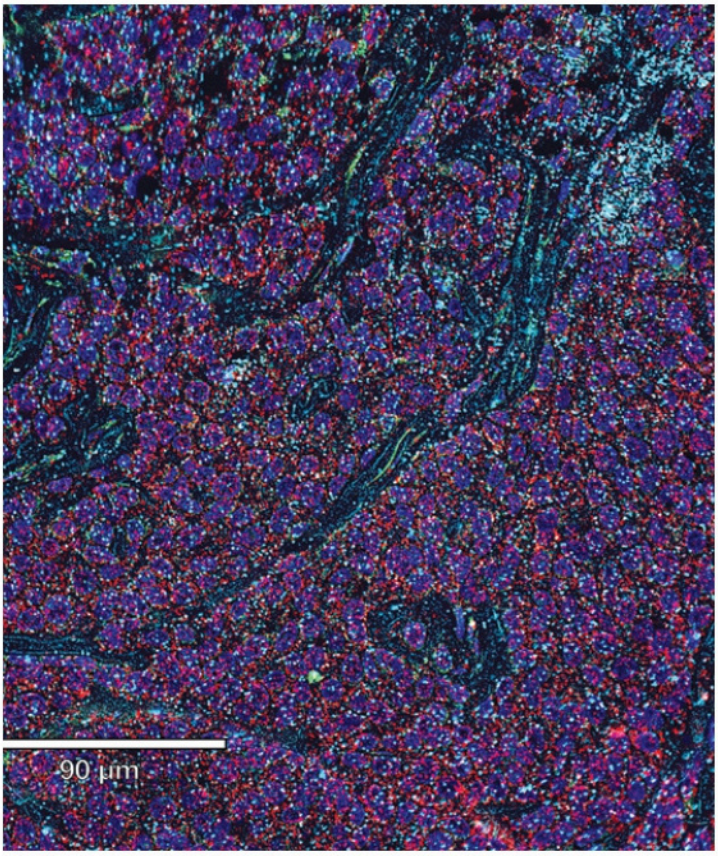
Detergents

Detergents have various uses in IHC protocols. They are often used for sample permeabilization to enable antibodies to access intracellular proteins. Detergents are also used as components of blocking, antibody dilution and wash buffers where they help reduce non-specific binding and reduce background.

OUR IHC DETERGENTS INCLUDE THE FOLLOWING:	
AR-6901	**BRIJ 35**
AR-6902	**TRITON X100**
AR-6903	**NP-40**
AR-6904	**TWEEN 20**

Immunohistochemistry Kits

Immunohistochemistry kits and reagents enable the visualization the targeted protein using HRP-based detection. Kits are available with AEC or DAB as the chromogen, or without chromogen. Immuno HRP kits use a biotinylated secondary antibody in conjunction with streptavidin HRP. One step HRP-polymer kits and reagents provide enhanced sensitivity compared to standard HRP techniques and avoid the use of biotin/avidin. Kits and reagents are available for use with chicken, mouse, rat, goat and rabbit primary antibodies.



OUR IHC KITS INCLUDE THE FOLLOWING:	
IH-8043	**IMMUNO HRP-AEC, READY TO USE IHC KIT, ANTI-CHICKEN IGY (H+L)**
IH-8053	**IMMUNO HRP-DAB, READY TO USE IHC KIT, ANTI-CHICKEN IGY (H+L)**
IH-8061	**ONE-STEP POLYMER HRP~MOUSE AND ~RAT IGG (H+L) READY TO USE**
IH-8063	**ONE-STEP POLYMER HRP~GOAT IGG (H+L) READY TO USE REAGENT ONLY**
IH-8064	**ONE-STEP POLYMER HRP~RABBIT IGG (H+L) IHC DETECTION KIT**
IH-8067	**ONE-STEP POLYMER HRP~MOUSE, RABBIT & RAT (H+L) DETECTION KIT, REAGENT ONLY**
IH-8071	**ONE-STEP POLYMER HRP~MOUSE AND RAT IGG WITH DAB**
IH-8072	**ONE-STEP POLYMER HRP~RABBIT IGG WITH DAB**
IH-8073	**ONE-STEP POLYMER HRP~MOUSE, RAT AND RABBIT WITH DAB**
IH-8074	**ONE-STEP POLYMER HRP~GOAT WITH DAB**

Immunohistochemistry Reagents (IHR)

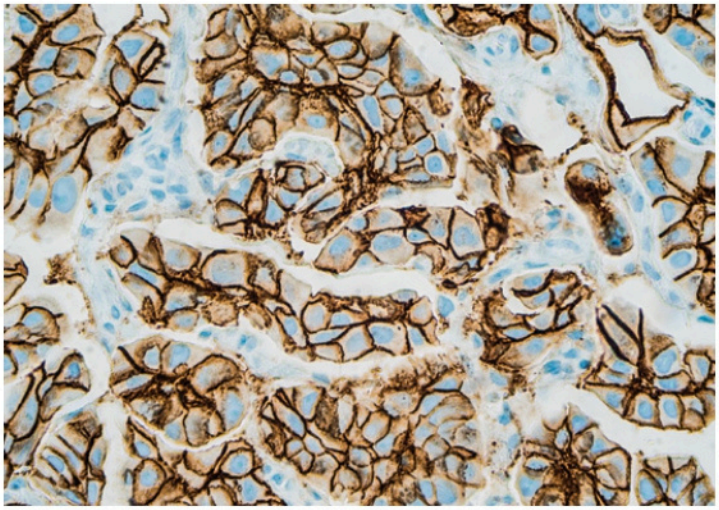
We offer a broad range of immunohistochemistry reagents. We have ready to use products such as a blocking solution and a peroxidase-streptavidin conjugate for use with biotinylated secondary antibodies. Sera from a range of species are available for use as components of blocking buffers, or as negative controls. Purified IgG from a range of species may be used as negative controls for the corresponding species of primary antibody.

OUR IHC REAGENTS INCLUDE THE FOLLOWING:	
IHR-8131	**BOVINE SERUM**
IHR-8135	**DONKEY SERUM**
IHR-8136	**GOAT SERUM**
IHR-8141	**MOUSE SERUM**
IHR-8142	**RABBIT SERUM**
IHR-8144	**SHEEP SERUM**

Lectins

Lectins are carbohydrate binding proteins with distinct sugar moiety specificities. They can bind to the sugar groups found on glycoproteins and glycolipids. WGA binds N-acetyl glucosamine and sialic acid residues, ConA binds α-mannosyl and α-glucosyl residues, PNA preferentially binds Galβ1, and UEA binds α-linked fucose residues. Binding can be blocked using a high concentration of the appropriate sugar.

The unconjugated lectins can be conjugated to beads for the purification of glycoproteins. The conjugated lectins are intended for detection of glycoproteins in histochemical and immunofluorescence experiments.



OUR IHC LECTINS INCLUDE THE FOLLOWING:	
LE-6881-11	**WHEAT GERM AGGLUTININ -BIOTIN CONJUGATED**
LE-6881-15	**WHEAT GERM AGGLUTININ -FITC CONJUGATED**
LE-6882-11	**CONA-BIOTIN CONJUGATED**
LE-6882-15	**CONA-FITC CONJUGATED**
LE-6883-11	**PNA-BIOTIN CONJUGATED**
LE-6883-15	**PNA-FITC CONJUGATED**
LE-6883-22	**PNA-R-PE CONJUGATED**
LE-6884-11	**UEA-I-BIOTIN CONJUGATED**
LE-6884-15	**UEA-I-FITC CONJUGATED**

Our family of companies also offers a comprehensive range of antibodies designed for Immunohistochemistry (IHC), covering an extensive spectrum of targets. From tumor markers to neuro-related and cancer-specific antigens, our antibodies offer reliable and precise detection, empowering your research or diagnostic endeavors with unmatched versatility and accuracy.

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