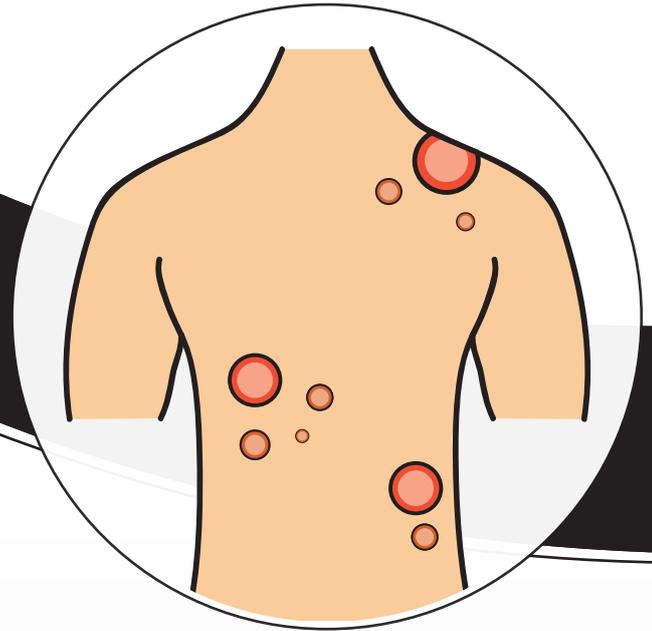




IHC PANEL MARKERS

M e l a n o m a C a n c e r



BioGenex offers wide-ranging antibodies for several IHC panel for initial differentiation, tumor origin, treatment methods, and prognosis. All BioGenex antibodies are validated on human tissues to ensure sensitivity and specificity. BioGenex comprehensive IHC panels include a range of mouse monoclonal, rabbit monoclonal, and polyclonal antibodies to choose from.

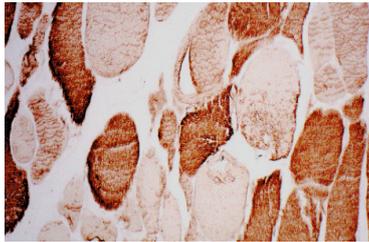
BioGenex offers a vast spectrum of high-quality antibodies for both diagnostic and reference laboratories. BioGenex strives to support efforts in clinical diagnostics and drug discovery development as we continue to expand our antibody product line offering in both ready-to-use and concentrated formats for both manual and automation systems.

Antibodies for Melanoma

MSA, S100, Melan-A, Vimentin, Tyrosinase, Melanoma, MiTF, Factor VIII, SMA, Desmin, CD34, MELANOMA MARKER, Filaggrin, Langerin, Cytokeratin, SOX9, Nucleophosmin, Cytokeratin, Pan, CD63, Cytokeratin 10, cytokeratin 14, cytokeratin 15, HSP70, Melanoma Cocktail, Melanosome / HMB45, MLH1, PMS2, TDP43/TARDBP, TIGIT, Adipophilin, SOX10, CD146/Muc18, cytokeratin 13, cytokeratin 5&6, cytokeratin LMW (AE1), p63, PRAME



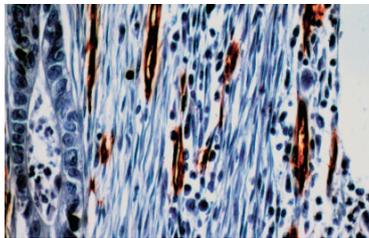
Actin, Muscle-Specific



Actin, a major component of the cytoskeleton, is a globular protein about 5 nm in diameter and is composed of one polypeptide chain with a mass of approximately 47kD. This antibody recognizes alpha actin of skeletal, cardiac and smooth muscle cells and gamma actin from smooth muscle cells. It is non-reactive with other mesenchymal cells and all epithelial cells except for myoepithelium. It can be used to stain leiomyomas, leiomyosarcomas, rhabdomyomas and rhabdomyosarcomas. This antibody labels cytoplasm in skeletal, cardiac and smooth muscle cells.

Antibody	Clone	Localization	Catalog Family
Actin, Muscle-Specific	HHF35	Cytoplasm	AM090, AX090, MU090

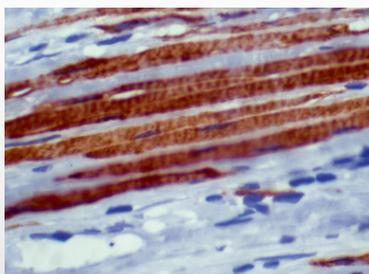
CD34



This is an antibody to the CD34 antigen in human endothelial and hematopoietic cells. It stains positive in a variety of vascular and lymphatic tumors. QBEnd/10 may now prove to be a more specific method of evaluating vascularization than Factor VIII antibody and is an important tool for tumor evaluation. This antibody stains endothelial cell cytoplasm and cross-reacts with basement membrane collagen.

Antibody	Clone	Localization	Catalog Family
CD34	QBend/10	Membrane	AM236, AX236, MU236
CD34	EP88	Membrane	AN779, AY779, NU779

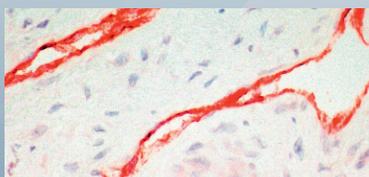
Desmin



Desmin is a 56 kD intermediate filament expressed by cells of smooth, skeletal, and cardiac muscle. In myofibrils, desmin is localized in skeletal and cardiac muscle Z lines, in regions of cell-cell juncture, at the site of apposition of the Z line with the plasma membrane, and in cardiac intercalated disks. The specificity of desmin to muscle cells makes it a useful marker in identifying sarcomas derived from smooth and striated muscle cells such as leiomyosarcomas and rhabdomyosarcomas. This antibody does not cross-react detectably with GFAP, keratin, vimentin, or neurofilament. This antibody stains positive in muscle cells.

Antibody	Clone	Localization	Catalog Family
Desmin	D33	Cytoplasm	AM072, AX072, MU072

Factor VIII Related Antigen

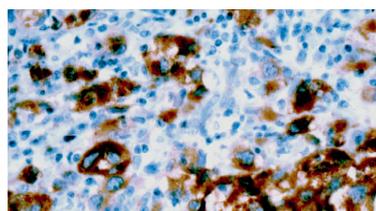


This antigen has proven to be one of the best available immunohistochemical markers for the identification of endothelial cells. Demonstration of Factor VIII-related antigen by immunohistochemical staining has been suggested to identify vascular invasion by neoplasms.

Antibody	Clone	Localization	Catalog Family
Factor VIII Related Antigen	F8 2.2.9	Cytoplasm	AM016, AX016, MU016



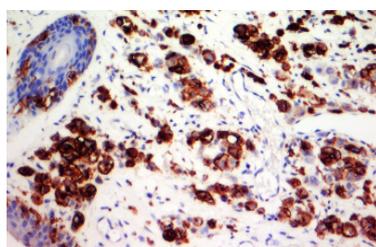
MART-1 (Melan-A)



Melan-A, a product of the MART-1 gene, is a differentiation antigen which is expressed in 100% of melanocytes, most melanomas, and 50-60% of melanoma cell lines. It is one of the melanoma antigens recognized by autologous cytotoxic T cells, and as an antigenic target for tumor infiltrating lymphocytes. This antibody also stains Melan-A in normal melanocytes and in the retina. It does not stain normal or tumor tissues from non-melanocyte lineages. This antibody stains positive in cytoplasm of melanocytes and other positive cells.

Antibody	Clone	Localization	Catalog Family
MART-1(Melan-A)	A103	Cytoplasm	AM361, AX361, MU361

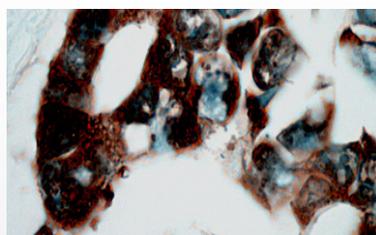
Melanoma



Metastatic melanoma is often confused with a variety of poorly differentiated carcinomas, sarcomas, and large cell lymphomas. Clone HMB45 reacts with fetal and neonatal melanocytes but not with normal adult melanocytes and junctional nevus cells but not with intradermal nevi, hence showing specificity for detection of melanocytic tumors. The panel of tumor markers, most commonly used in conjunction with HMB45, for evaluation of melanoma includes S-100 protein LCA, CEA, and EMA, as well as vimentin, an intermediate filament found in both melanomas and sarcomas.

Antibody	Clone	Localization	Catalog Family
Melanoma	HMB45	Cytoplasm	AM001, AX001, MU001

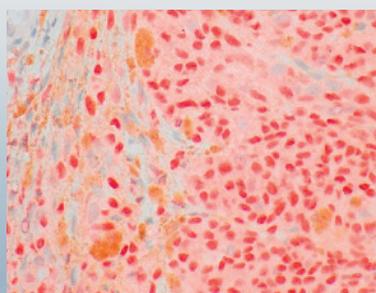
HSP 70



HSP70 is a member of a multigene family encoding several closely related 70-73 kD stress proteins (the HSP70 family). These genes differ in their intracellular location and regulation and are thought to be involved in protein-protein interactions such as those of the protein products of the p53 tumor suppressor gene and the human c-myc oncogene. Increased levels of HSP70 and its inducible from HSP72 in breast carcinoma and Alzheimer's respectively have been found. This antibody reacts with HSP70 in human, bovine, rabbit, guinea pig, chicken, and rat tissue.

Antibody	Clone	Localization	Catalog Family
HSP 70	BRM-22	Cytoplasm	AM289, AX289, MU289

MiTF

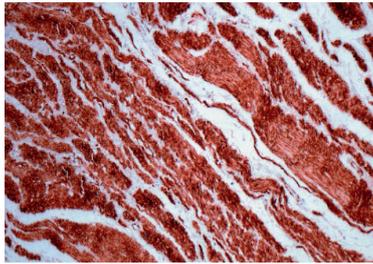


Microphthalmia-associated Transcription Factor (MiTF) is a basic helix-loop-helix leucine zipper transcription factor involved in melanocyte and osteoclast development. Mutations in MiTF cause auditory pigmentary syndromes, such as Waardenburg Syndrome Type II, Type IIa and Tietz Syndrome in humans. MiTF plays a critical role in the differentiation of various cell types such as neural crest-derived melanocytes, mast cells, osteoclasts and optic cup-derived retinal pigment epithelium. This antibody recognizes serine phosphorylated and non-phosphorylated melanocytic isoforms of microphthalmia. It is useful in identifying malignant melanoma, and distinguishing mast cell lesions of myeloid derivation. A relatively rare class of tumors known as PEComas (tumors showing perivascular epitheloid cell differentiation) express MiTF in a high percentage of cases (~90%).

Antibody	Clone	Localization	Catalog Family
MiTF	MiTF/A13	Nuclear	AM554, AX554, MU554



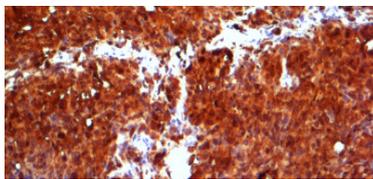
SMA



Actin is one of the two major cytoskeletal proteins. The antibody can be used to identify smooth muscle tumors. It stains leiomyomas and leiomyosarcomas but does not stain carcinomas, melanomas, lymphomas or non-smooth muscle sarcomas. It stains the muscularis and muscularis mucosa of the gastrointestinal tract, the uterine myometrium, medial layer of blood vessels, the mesenchymal components of the prostate, and myoepithelial cells of salivary glands and other organs. The antibody does not stain striated muscle such as skeletal and cardiac muscle, endothelium, connective tissue, epithelium or nerve. This antibody stains positive in cytoplasm of smooth muscle cells.

Antibody	Clone	Localization	Catalog Family
Actin, Smooth Muscle	1A4	Cytoplasm	AM128, AX128, MU128

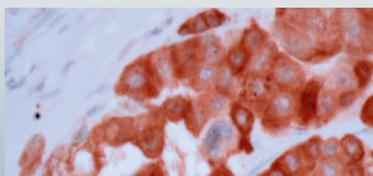
S100



S100 protein is a low molecular weight soluble protein first isolated from the brain and initially believed to be exclusively a glial marker. Two subunits of S100 protein have been identified. The beta subunit is present in all S100 positive cells and tumors. In contrast, the alpha subunit is detectable only in neurons and lymph node macrophages. The presence of S100 protein is readily demonstrated in routinely processed malignant melanomas. S100 protein has also been found in normal melanocytes, Langerhans cells, histiocytes, chondrocytes, lipocytes, skeletal and cardiac muscle, Schwann cells, epithelial and myoepithelial cells of the breast, salivary and sweat glands, in addition to glial cells. Neoplasms derived from these cells also express S100 protein to varying degrees. A large proportion of well-differentiated tumors of salivary gland, adipose, cartilaginous tissue, and Schwann cell-derived tumors express S100 protein.

Antibody	Clone	Localization	Catalog Family
S100	15E2E2	Cytoplasm & Nucleus	AM058, AX058, MU058
S100	Polyclonal	Cytoplasm & Nucleus	AR058, AW058, PU058
S100	EP186	Cytoplasm & Nucleus	AN712, AY712, NU712
S100 Beta	EP32	Cytoplasm & Nucleus	AN713, AY713, NU713

Tyrosinase

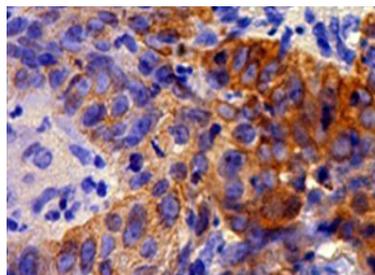


Tyrosinase is a copper-containing enzyme present in plant and animal tissues that catalyzes the production of melanin and other pigments from tyrosine by oxidation. The gene for tyrosinase is regulated by the microphthalmia-associated transcription factor. A mutation in the tyrosinase gene resulting in impaired tyrosinase production results in type I oculocutaneous albinism, a hereditary disease that one in every 17,000 person has in the US. Anti-tyrosinase has been found to be quite specific for melanotic lesions such as malignant melanoma, and melanotic neurofibroma. Essentially no carcinomas express this marker.

Antibody	Clone	Localization	Catalog Family
Tyrosinase	Ty/G5	Cytoplasm	AM535, AX535, MU535



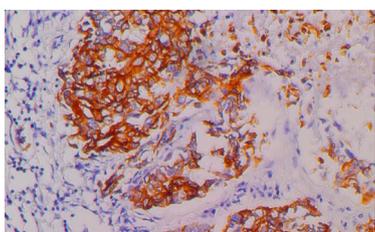
Cytokeratin 5 & 6



The two keratins specifically type II keratin CK5 and type II CK6, which essentially form 8-nm filaments. CK5 is a useful immunohistochemical marker in different studies of mesothelioma, and the expression is key tool for the histological differential diagnosis with adenocarcinomas, especially when confronting with metastatic tumors of unknown origin. CK5 labels myoepithelial cells of breast and prostate basal cells. The human type II Cytokeratin 6 (CK6) a 56 kD protein expressed on stratified epithelia including oral mucosa, esophagus, basal layer of epidermis, the outer root sheath of hair follicles, and in glandular epithelia.

Antibody	Clone	Localization	Catalog Family
Cytokeratin 5 & 6	EP24 & EP67	Cytoplasm	AN892, AY892, NU892

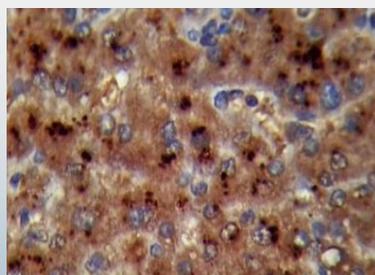
Cytokeratin 13



Cytokeratin 13 is a part of the keratin gene family, more specifically a type 1 keratin, as non-keratinized squamous epithelial marker. Type 1 keratins, compared to type 2 keratins, tend to be smaller and more acidic. These keratins constitute the type intermediate filaments of the intracytoplasmic cytoskeleton that are responsible for the structural integrity of mammalian epithelial cells. Cytokeratin 13 has been found to play a directive role in prostate cancer metastasis. The levels of Cytokeratin 13 were able to predict bone metastasis and overall survival rate of the patient.

Antibody	Clone	Localization	Catalog Family
Cytokeratin 13	KRT13/2213	Cytoplasm	AM989, AX989, MU989
Cytokeratin 13	AE8	Cytoplasm	AM132, AX132, MU132

Adipophilin

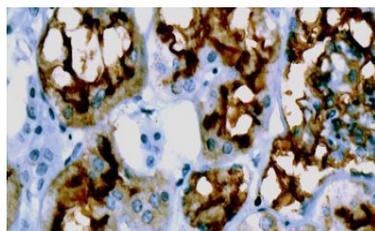


Adipophilin (ADFP, adipocyte differentiation-related protein) belongs to the perilipin family associated with lipid globule surface membranes and intracellular lipid storage droplets in various normal cells. It is a major constituent of the globule surface and involved in the development and maintenance of adipose tissue. It is present in the cytoplasm of a wide range of cultured cell lines and tissues, including fibroblasts, endothelial and epithelial cells, lactating mammary glands, the adrenal cortex, Sertoli & Leydig cells, and hepatocytes in alcoholic liver cirrhosis. Anti-Adipophilin is considered a useful marker of cytoplasmic lipids, sebocytes, and lipid accumulation, and can be used to identify sebaceous lesions and carcinomas.

Antibody	Clone	Localization	Catalog Family
Adipophilin	ADFP/1494	Cytoplasm	AMA76, AXA76, MUA76



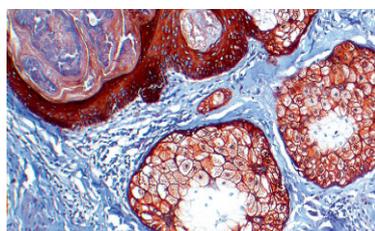
CD146



CD146 (cluster of differentiation 146) also known as the melanoma cell adhesion molecule (MCAM) or cell surface glycoprotein MUC18, is a 113kDa cell adhesion molecule currently used as a marker for endothelial cell lineage. In humans, the CD146 protein is encoded by the MCAM gene. In tumor, CD146 is expressed on tumor cells derived from peripheral nervous system, melanoma and clear cell sarcoma. It has been reported that CD146 is useful in differentiation of mesothelioma (CD146 positive) and reactive mesothelium (CD146 negative). CD146 is associated with tumor progression and the development of metastasis in human malignant melanoma.

Antibody	Clone	Localization	Catalog Family
CD146	EP54	Membrane/Cytoplasm	AN716, AY716, NU716

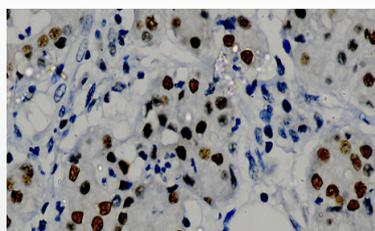
Cytokeratin, Pan



Human keratins are a family of water-insoluble proteins with molecular weights ranging from 40kD – 68kD. They form a part of the cytoskeleton of epithelial cells. This monoclonal cytokeratin antibody can be used to detect cytokeratins 4, 5, 6, 8, 10, 13, and 18 in simple or stratified epithelium in most vertebrates including human. It can be used as a marker for carcinoma as well as some special types of tumors which have an epithelial component or differentiation. Cytokeratin antibodies have been widely used as markers to differentiate epithelial tumors from non-epithelial tumors

Antibody	Clone	Localization	Catalog Family
Cytokeratin, Pan	C11	Cytoplasm	AM357, AX357, MU357

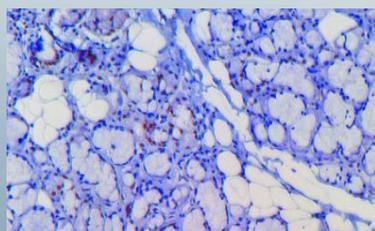
SOX 9



SOX9 is a member of SOX (SRY-like HMG box) family of transcription factors with diverse roles in development. SOX9 involved in chondrogenesis and regulates the expression of other genes involved in chondrogenesis by acting as a transcription factor for these genes. In addition, it is reportedly involved in the maintenance of adult stem cell populations, including multipotent neural stem cells, hair follicle stem cells, and mammary stem cells. It plays an important role in sex determination and differentiation of Sertoli cells.

Antibody	Clone	Localization	Catalog Family
SOX 9	SOX9/2387	Nucleus	AMB90, AXB90, MUB90

SOX 10

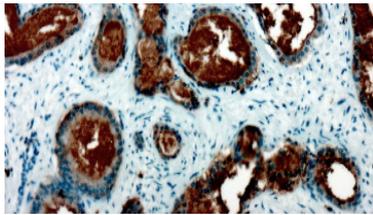


The SOX10 protein belongs to the SOX genes family of transcription factors that bind to the minor groove in DNA. They are characterized by a homologous sequence called the HMG-box. SOX10 is known to be involved in regulation of embryonic development and determination of cell fate. It combines with other proteins to form complexes and acts as a transcriptional activator. It is very important for neural crest and peripheral nervous system development. SOX10 plays an important role in melanocytic cell differentiation. It can be used as a sensitive marker for melanoma.

Antibody	Clone	Localization	Catalog Family
SOX 10	SOX10/991	Nucleus	AM995, AX995, MU995



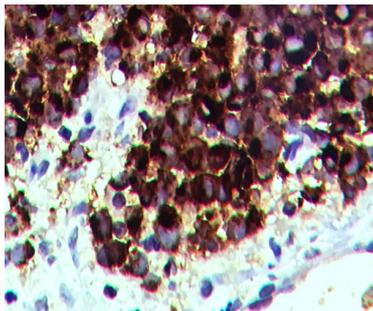
CD63



CD63 is a 53 kDa lysosomal membrane glycoprotein that has been identified as a platelet activation molecule that belongs to the tetraspanin family, which is characterized by the presence of four hydrophobic domains. The tetraspanin CD63 (also known as LAMP-3, melanoma associated antigen ME491, TSPAN30, MLA1 and OMA81H) is a lysosomal membrane glycoprotein that translocates to the plasma membrane after platelet activation. CD63 is expressed on activated platelets, monocytes and macrophages and is weakly expressed on granulocytes, T cell and B cells. It is also strongly expressed in early melanoma, breast carcinoma, merkel cell carcinoma, astrocytoma and lung adenocarcinoma. Recent reports also indicate that CD63 is a good prognostic biomarker for human astrocytomas and earlier stages of lung carcinoma.

Antibody	Clone	Localization	Catalog Family
CD63	EP211	Cytoplasm	AN720, NU720, AY720

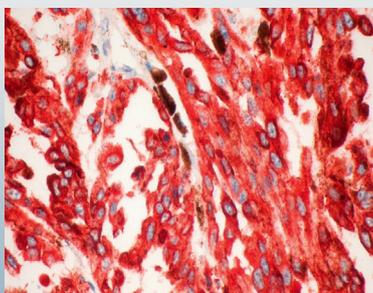
Melanoma Marker



Melanoma marker is a cocktail antibody that has three melanoma-specific proteins, which include MART1, Tyrosinase and gp100. This cocktail antibody labels melanomas and tumors showing melanocytic differentiation. Melanoma-associated antigen recognized by T cells-1 (MART-1) (also known as Melan-A) is a melanocyte differentiation antigen recognized by autologous cytotoxic T lymphocytes. It is a transmembrane protein which is hydrophobic in nature.

Antibody	Clone	Localization	Catalog Family
Melanoma Marker	A103+T311 +HMB45	Cytoplasm	AMA69, MUA69, AXA69

Melanoma

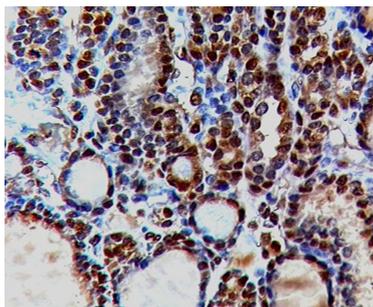


Metastatic melanoma is often confused with a variety of poorly differentiated carcinomas, sarcomas, and large cell lymphomas. Clone HMB45 reacts with fetal and neonatal melanocytes but not with normal adult melanocytes, junctional nevus cells but not with intradermal nevi, hence showing specificity for detection of melanocytic tumors. The panel of tumor markers, most commonly used in conjunction with HMB45, for evaluation of melanoma includes S-100 protein LCA, CEA, and EMA, as well as vimentin, an intermediate filament found in both melanomas and sarcomas.

Antibody	Clone	Localization	Catalog Family
Melanoma	HMB45	Cytoplasm	AM001, MU001, AX001



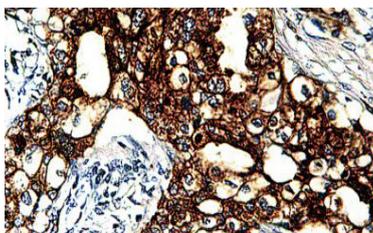
MLH-1



MutL homolog 1 (MLH1) is a protein in humans that is encoded by the MLH1 gene. MLH1 protein is one component of a system of seven DNA mismatch repair proteins that coordinate and work in sequential steps to initiate repair of DNA mismatches in humans. The MLH1 gene is often mutated in hereditary nonpolyposis colon cancer (HNPCC). It also plays a role in meiotic recombination. Defects in mismatch repair are found in around 13% of colorectal cancers and are much more frequently due to deficiency of MLH1 than deficiencies of other DNA mismatch repair proteins.

Antibody	Clone	Localization	Catalog Family
MLH-1	ES05	Nuc	AM703, MU703, AX703
MLH-1	MLH1/6284R	Nuc	ANC24, NUC24, AYC24

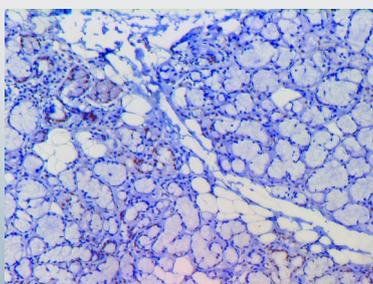
Cytokeratin, Low MW



The cytokeratins are a family of water-insoluble proteins (40-70 kD) found in almost all epithelial cell types. The presence of keratin appears to be a highly specific characteristic of various true epithelial cells in-situ and is maintained in epithelium-derived cells in culture, including highly malignant cell lines. Low molecular weight cytokeratin antibody AE1 has proven to be a widespread histological marker for the restricted staining of the epidermal basal layer of skin and almost all epithelially derived tumors. It can be used as a marker for cells of epithelial origin. Combined with other monoclonal keratin antibodies, it may be useful in studying the histogenesis of undifferentiated tumors.

Antibody	Clone	Localization	Catalog Family
Cytokeratin, Low MW	AE1	Cytoplasm	AM075, AX075, MU075

SOX10

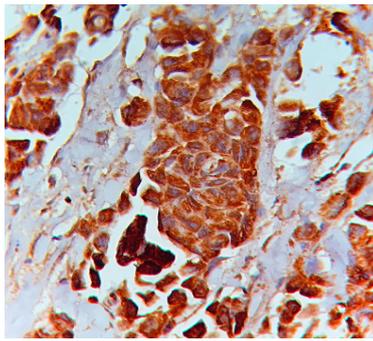


The SOX10 protein belongs to the SOX genes family of transcription factors that bind to the minor groove in DNA. They are characterized by a homologous sequence called the HMG-box. SOX10 is known to be involved in regulation of embryonic development and determination of cell fate. It combines with other proteins to form complexes and acts as a transcriptional activator. It is very important for neural crest and peripheral nervous system development. SOX10 plays an important role in melanocytic cell differentiation. It can be used as a sensitive marker for melanoma.

Antibody	Clone	Localization	Catalog Family
SOX10	SOX10/991	Nucleus	AM995, MU995, AX995



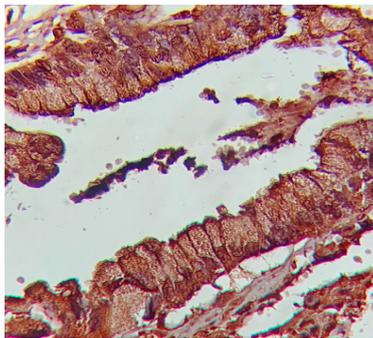
TARDBP



TARDBP is found in patients with frontotemporal lobar degeneration (FTLD) and amyotrophic lateral sclerosis (ALS). Additionally, TDP43 is involved in RNA splicing of the cystic fibrosis transmembrane conductance regulator gene (CFTR). TARDBP may play a role in the development of neurodegenerative disorders such as Alzheimer's and Parkinson's disease.

Antibody	Clone	Localization	Catalog Family
TARDBP	E-10	Nucleus & Cytoplasm	AMC45, MUC45, AXC45

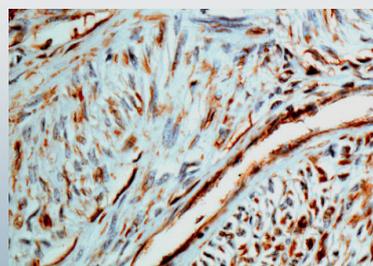
TIGIT



TIGIT (T cell immunoreceptor with Ig and ITIM domains) also known as VSIG9, VSTM3, and WUCAM, is an immune inhibitory receptor belongs to the poliovirus receptor family of immunoglobulins. It is a prominent immune checkpoint inhibitor expressed on various lymphocytes such as natural killer (NK) cells, effector T cells and regulatory CD4+ T cells. TIGIT binds with high affinity to PVR/CD155 which is expressed on tumor-infiltrating myeloid cells and cancer cells. Upon binding, it suppresses T cell activation, and inhibits T and NK cell cytotoxicity. It is also involved in tumor cell immune evasion, and the inhibition of antiviral immune responses. The ligands for TIGIT also include Nectin-2/CD112 and Nectin-3/CD113. Many tumors evade the immune system response by expressing TIGIT's ligands and thus inhibiting an anti-cancer immune response and hence, it is considered as an immuno-oncology target for therapy.

Antibody	Clone	Localization	Catalog Family
TIGIT	TIGIT/3017	Membrane	AMC34, MUC34, AXC34

Vimentin

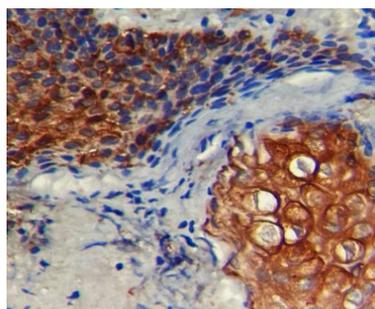


Vimentin is the major intermediate filament in a variety of mesenchymal or mesenchymally derived non-muscle cell types. Vimentin is found in all types of sarcomas and lymphomas. Positive staining for vimentin is seen in most cells of fibrosarcomas, liposarcomas, malignant fibrous histiocytomas, angiosarcomas, chondrosarcomas and lymphomas. When the vimentin antibody is used in combination with other antibodies as a panel, it can aid in the histological classification of normal and malignant tissues. This antibody immunohistochemically labels a variety of mesenchymal cells.

Antibody	Clone	Localization	Catalog Family
Vimentin	V9	Cytoplasm	AM074, AX074, MU074
Vimentin	LN6	Cytoplasm	AM163, AX163, MU163



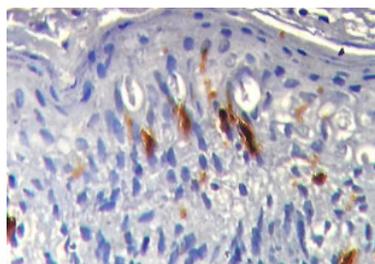
Filaggrin



Filaggrin protein is an intermediate filament-associated protein that aggregates keratin intermediate filaments in epidermis. It is initially synthesized as a polyprotein precursor molecule, profilaggrin (a large, insoluble, highly phosphorylated precursor protein containing several tandem copies of a 324 amino acid). Profilaggrin is proteolytically processed into active filaggrin molecules and these molecules promote aggregation by forming disulfide-bond of keratin intermediate filaments during terminal differentiation of the epidermis. Filaggrin expression is seen only in well differentiated keratinized epithelial cells. Mutations in this gene are associated with ichthyosis vulgaris with viral, premalignant and malignant conditions.

Antibody	Clone	Localization	Catalog Family
Filaggrin	FLG/1562	Cytoplasm	AMB37, MUB37, AXB37

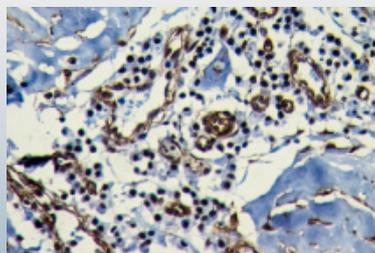
Langerin



Langerin is found on Langerhans cells and is a type II transmembrane cell surface receptor. Extracellular domain of langerin has a neck region containing series of heptad repeats and a CRD(C-terminal C-type carbohydrate-recognition domain). Langerhans cells are immature dendritic cells (DCs) which are seen in epidermis and other mucosal epithelia. Epidermal LCs has strong immune-stimulatory capacity and plays an important role in initiating and regulating of the immune system. Langerin protein can be found in Human spleen, lymph node, thymus, liver, lung and heart. Human langerin is found on the genome maps at chromosome 2p13.3 and encodes a 328 amino acid protein.

Antibody	Clone	Localization	Catalog Family
Langerin	H-4	Cytoplasm	AMB79, AXB79, MUB79

Nucleophosmin

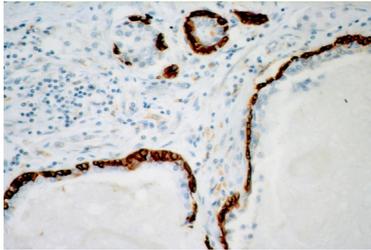


Nucleophosmin, also known as nucleolar phosphoprotein B23 or numatrin, is a protein that in humans is encoded by the NPM1 gene. Nucleophosmin is a nucleolar phosphoprotein more abundant in tumor cells than in normal resting cells. An increase in nucleophosmin protein level accompanies stimulation of the growth of normal cells, e.g., mitogen activation of B lymphocytes. This protein is concentrated in the granular region of the nucleolus, where ribosome assembly occurs is likely involved in the assembly of ribosomal protein-into ribosomes.

Antibody	Clone	Localization	Catalog Family
Nucleophosmin	NPM1/3286	Nucleus	AMA47, MUA47, AXA47



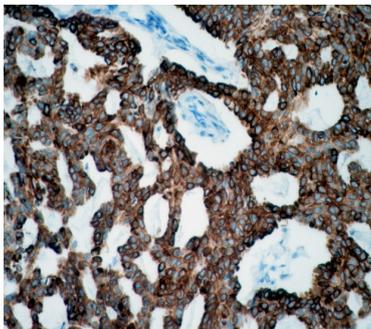
Cytokeratin 14



Keratins are intermediate filament proteins expressed by epithelial cells in cytoplasm. Mitotically active basal layers of most stratified squamous epithelia cells express 10% to 30% of their total protein as keratin. Cytokeratin 14 (CK14) is a 50-kDa keratin expressed in abundance in epidermal cells, basal cells, mesothelial cells, stratified epithelial cells, and myoepithelial cells in various tissues including prostate and breast. CK14 is helpful in the identification of breast cancer with basal phenotype

Antibody	Clone	Localization	Catalog Family
Cytokeratin 14	EP61	Cytoplasm	AN831, NU831, AY831

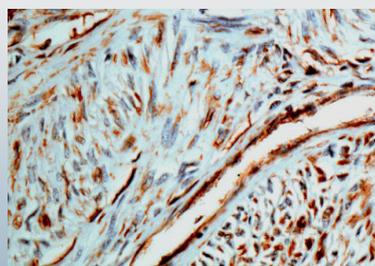
Cytokeratin 15



Cytokeratin 15 (CK15) plays a key role in the development of stratified epithelia from one-layered polar epithelia and continues to be expressed in several adult epithelial tissues. Cytokeratin 15 labels the basal keratinocytes of stratified tissues, including the fetal epidermis and fetal nail. CK15 is absent from hair bulbs in normal hair follicles, it was expressed by a subset of keratinocytes in the outer root sheath. In human conjunctival epithelium, strong expression of CK15 was observed in basal cells, whereas Cytokeratin 19 was expressed in both basal and suprabasal layers. CK15 may be used to differentiate primary from metastatic skin cancer. It may be a useful stem cell marker for hair follicle and breast epithelium

Antibody	Clone	Localization	Catalog Family
Cytokeratin 15	EP14	Cytoplasm	AN855, NU855, AY855

PMS2

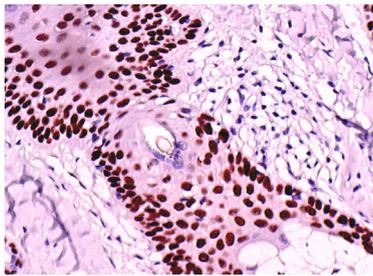


PMS2, a mismatch repair endonuclease, is a member of a family of genes involved in DNA mismatch repair. Carriers of the mismatch repair gene mutations have a high lifetime risk of developing Hereditary Non-Polyposis Colon Cancer (HNPCC) and several other cancers including endometrial cancer due to microsatellite instability (MSI) caused by accumulation of DNA replication errors in proliferating cells. Along with MLH1, MSH2 and MSH6, PMS2 antibody is helpful in diagnosis of MSI. An IHC study conducted by Mayo clinic on 535 cases with MSI^{high}, 90% of the tumors showed loss of MLH1, MSH2 and/or MSH6 expression, while 70% of the remaining cases showed isolated loss of PMS2 expression.

Antibody	Clone	Localization	Catalog Family
PMS2	EP51	nucleus	AN844, AY844, NU844



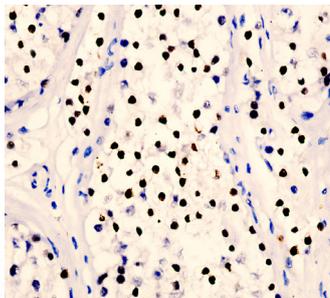
p63



P63 is a nuclear protein widely expressed in basal cells in the epithelial layers of a variety of tissues, including epidermis, cervix, urothelium, breast and prostate. It has been identified as a useful panel marker for differential diagnosis of prostate and breast. P63 was also shown to be a sensitive marker for squamous cell carcinomas (SqCC).

Antibody	Clone	Localization	Catalog Family
p63	TP63/1423R	Nucleus	ANC90, NUC90, AYC90

PRAME



PRAME (PReferentially-expressed Antigen in MELanoma) is an autosomal cancer-testis antigen (CTA) gene that encodes a 509 amino acid residue protein which is associated with the outcome and risk of metastasis. It is a melanoma antigen that is preferentially expressed in tumours and is recognized by cytotoxic T lymphocytes. PRAME is expressed in melanoma cells, various non-melanocytic malignant neoplasms, including non-small cell lung cancer, breast carcinoma, renal cell carcinoma, ovarian carcinoma, Hodgkin's disease, leukaemia, synovial sarcoma, multiple myeloma and myxoid liposarcoma. PRAME is not strongly expressed in most other normal tissues except for testis, ovary, placenta, adrenals, and endometrium.

Antibody	Clone	Localization	Catalog Family
PRAME	PRAME/8558R	Nucleus	AND41, NUD41, AYD41



BioGenex Primary Antibody Format and Pack Size

BioGenex antibodies are optimized to provide a maximum signal with the minimum background for immunohistochemical staining. All our antibodies are optimized and recommended for use with all Super Sensitive™ Detection Systems to provide optimum staining.

BioGenex Ready-to-Use (RTU) antibodies are fully optimized for use with BioGenex Detection Systems without the need for further dilution or titration. BioGenex concentrated antibodies are provided with recommended dilutions for optimal use with BioGenex Detection Systems, allowing rapid titration and testing.

Prefix	Type	Species	Suffix	Volume and Format
AM/AN	Monoclonal	AM-Mouse/AN-Rabbit	-5M/5ME	6 mL - Ready-to-use (manual)
AM/AN	Monoclonal	AM-Mouse/AN-Rabbit	-10M/10ME	10 mL - Ready-to-use (i6000™)
AX/AY	Monoclonal	AX-Mouse/AY-Rabbit	-YCD/YCDE and -50D/50DE	16 mL and 5 mL Ready-to-use (Xmatrix®)
AR	Polyclonal	Rabbit	-5R/5RE	6 mL - Ready-to-use (manual)
AR	Polyclonal	Rabbit	-10R/10RE	10 mL - Ready-to-use (i6000™)
AW	Polyclonal	Rabbit	-YCD/YCDE and -50D/50DE	16 mL and 5 mL Ready-to-use (Xmatrix®)
MU/NU	Monoclonal	AM- Mouse/AN-Rabbit	-UC/UCE and -5UC/5UCE	1 mL and 0.5 mL Concentrate
PU	Polyclonal	Rabbit	-UC/UCE and -5UC/5UCE	1 mL and 0.5 mL Concentrate

Other Panel Markers from BioGenex

Breast cancer panel	Pancreas tumor
B&T cell Associated Lymphoma	Liver cancer
Cervical cancer	Kidney cancer
Colorectal and stomach cancer	Head & neck cancer
Lung cancer	Bladder cancer
Muscle cancer	Germ cell tumor
Ovarian cancer	Vascular tumor
Prostate/Testicular cancer	Pituitary gland
Neuroendocrine tumor	Esophagus cancer

For specific information on the individual antibody, please refer to the datasheets available on www.biogenex.com or call BioGenex Technical Support at **1(800)421-4149** or write to support@biogenex.com.



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