ZETA Corporation

Recombinant IVD Antibodies

DERMATOPATHOLOGY

INSIDE:

PRAME – "In the Spotlight" p2

IHC "Work Horses".....p3
Melanocytic Tumors.....p7
Mast Cell IHC.....p8
Spindle Cell Neoplasms.....p9
Vascular Lesions.....p11
Cutaneous B Cell Lymphomas.....p12
CD30+ Lymphoproliferative Disorders...p15
Prognostic and Predictive Markers.....p16
Detection Kits and Reagents.....p22

Micrograph collage key ..... back page

IN THE SPOTLIGHT

PRAME recombinant antibody, clone ZR383

ZR383 is useful in differentiating malignant melanoma from benign nevi, and doesn't cross-react with cutaneous sebaceous gland and its tumors.

Zeta's recombinant rabbit antibody recognizes PRAME (**PR**eferentially expressed **A**ntigen in **ME**lanoma), a melanoma-associated antigen that was isolated from autologous T cells in a melanoma patient. The use of PRAME immunohistochemistry is well established for cutaneous melanocytic lesions. Over 90% of primary and metastatic melanoma (superficial spreading, nodular, and lentigo maligna) are positive for PRAME. Only about one third of cases of desmoplastic/spindle cell melanomas are positive for PRAME.

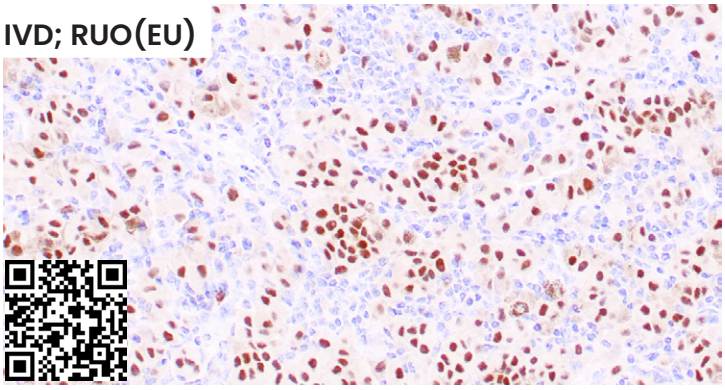
Studies have shown that immunohistochemical analysis for PRAME expression is useful for the diagnosis of malignant melanoma. It may also be valuable for margin assessment of a known PRAME-positive melanoma in frozen section evaluation. Unlike other popular PRAME clones, clone ZR383 doesn't cross react with cutaneous sebaceous gland and its tumors.

In the publication (The utility of PRAME staining in identifying malignant transformation of melanocytic nevi – PubMed), researchers found a high rate (67%) of differential PRAME staining in adjacent benign and malignant melanocyte populations in NAM. In PRAME positive (4+) melanomas, PRAME differentiates 100% (24/24) of benign and malignant melanocyte populations. When 4+ staining is used as the threshold for positivity, PRAME staining has a sensitivity of 67% (24/36) and a specificity of 100% (36/36). These results support PRAME IHC can assist in distinguishing melanocyte populations in melanoma arising within nevi.

Epithelial tumors from endometrium, ovary, thymic, and germ cell, and some sarcomas (synovial sarcoma and myxoid liposarcoma) may be positive for PRAME. Thus, PRAME is a relatively unspecific immunohistochemical marker for surgical pathology. However, PRAME is useful in differentiating malignant melanoma from benign nevi.

PRAME functions as a transcriptional repressor, inhibiting the signaling of retinoic acid through the retinoic acid receptors RARA, RARB and RARG. PRAME prevents retinoic acid-induced cell proliferation arrest, differentiation and apoptosis. The PRAME gene encodes an antigen that is preferentially expressed in human melanomas and that is recognized by cytolytic T lymphocytes. PRAME is not expressed in normal tissues, except testis. The PRAME protein acts as a repressor of retinoic acid receptor, and likely confers a growth advantage to cancer cells through this function.differentiating malignant melanoma from benign nevi.

IVD; RUO(EU)



Formalin-fixed, paraffin-embedded human liver with metastatic melanoma stained with anti-PRAME antibody using peroxidase- conjugate and DAB chromogen. Note the nuclear staining of tumor cells.

References:
1. Kaczorowski M, *et al. Am J Surg Pathol* 2022; **46**:1467-76.
2. Lezcano C, *et al. Am J Surg Pathol* 2020; **44**:503-508.
3. Ng JKM, *et al. Pathology* 2022; **54**:721-728.

PRAME rabbit monoclonal, recombinant

Clone: ZR383 **Cat#:** Z2674

NEW! DUALstain™ Antibody Cocktail

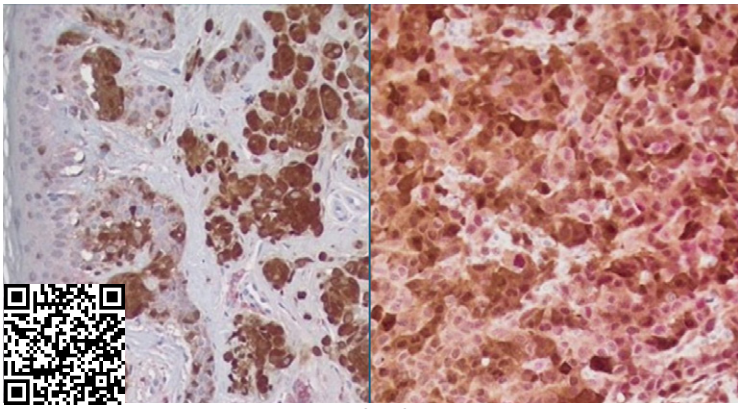
Melanoma Cocktail
(PRAME + S-100)

IVD US, non EU; EU: RUO

The combination of PRAME (red) and S-100 (brown) IHC staining can aid in differentiating malignant melanoma and atypical nevus (PRAME positive, S-100 positive) from benign nevus (PRAME negative, S-100 positive).

PRAME is a transcriptional repressor that prevents retinoic acid-induced cell proliferation arrest, differentiation, and apoptosis. This gene encodes an antigen (used to produce Zeta anti-PRAME, **rabbit clone ZR383**) that is preferentially expressed in human melanomas and is recognized by cytolytic T lymphocytes. Not expressed in normal tissues, except testis. S-100 is a calcium binding protein expressed in melanocytes and the antigen presenting cells. S-100 **(mouse clone 4C4.9)** stains Schwannomas, ependymomas, astrogliomas, almost all benign and malignant melanomas and their metastases. *(MORE)*

Species: rabbit & mouse monoclonals **Cat#:** Z2838



IHC: Human compund nevus (left) and malignant melanoma (right) stained with Melanoma Cocktail using DAB-conjugate anti-mouse (S-100) and AP-conjugated anti-rabbit (PRAME). Note the nevus cells are only positive for S-100 (brown) and negative for PRAME, whereas melanoma cells are positive for both PRAME (nuclear, red) and S-100 (nuclear and cytoplasmic, brown)

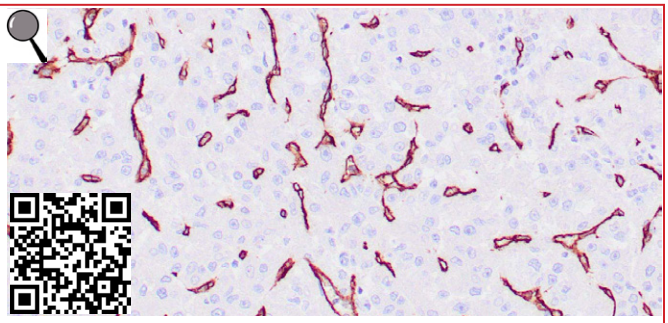
Section 1: The Dermatopathology "IHC Work Horses"

Zeta develops high-utility, trusted, and widely used IVD IHC antibodies invaluable to dermatopathologists. They provide reliable and reproducible results that enhance diagnostic confidence. Evaluation of skin disorders and malignancies is a complex process and these antibodies enable accurate detection of disease-specific markers, which distinguish between morphologically similar conditions. Their proven and consistent performance across laboratories reduces diagnostic uncertainty, and supports evidence-based treatment decisions. By combining trustworthiness, broad validation, and diagnostic precision, these "workhorse" antibodies are essential tools for delivering accurate results that enable timely and appropriate patient care.

CD34 (clone QBEnd-10) IVD

CD34, a transmembrane glycoprotein, is selectively expressed on human lymphoid and myeloid hematopoietic progenitor cells. Staining for CD34 has been used to measure angiogenesis, which predicts tumor recurrence. CD34 can be used to distinguish lymphocyte rich thymoma (CD34+ cells) from T cell acute lymphoblastic leukemia (T ALL, CD34-), and for clinical bone marrow transplantation, and to identify blasts in general and in hypoplastic marrows. (more)

Species: Mouse Monoclonal, recombinant **Cat#:** Z2063

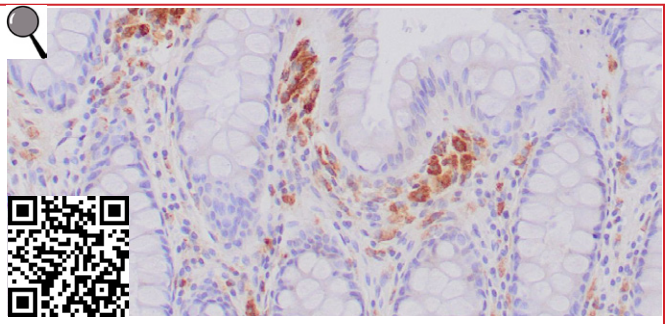


IHC: Human thyroid tissue stained with QBEnd-10

CD68 (clone ZR302) IVD

The CD68 antibody is important for identifying macrophages in tissue sections. CD68 is expressed in macrophages in a wide variety of human tissues, including Kupffer cells and macrophages in the red pulp of the spleen, in lamina propria of the gut, in lung alveoli, and in bone marrow. The CD68 antibody reacts with myeloid precursors and peripheral blood granulocytes. CD68 is also expressed in plasmacytoid T cells, which are thought to be of monocyte/macrophage origin. (more)

Species: Rabbit Monoclonal, recombinant **Cat:** Z2732

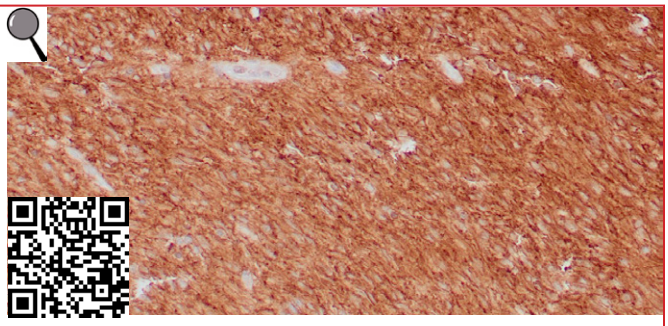


IHC: Human colon stained with ZR302

CD117 (clone ZR424) IVD; RUO(EU)

Recognizes a protein of 145kDa, identified as CD117/p145kit. It is found on a wide variety of tumor cells including follicular and papillary carcinoma of the thyroid, adenocarcinomas from endometrium, lung, ovary, pancreas, and breast as well as malignant melanoma, endodermal sinus tumor, and small cell carcinoma. However, anti-CD117 has been particularly useful in differentiating gastrointestinal stromal tumors from Kaposi sarcoma, tumors of smooth muscle origin, fibromatosis, and neural tumors of the GI tract. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2780

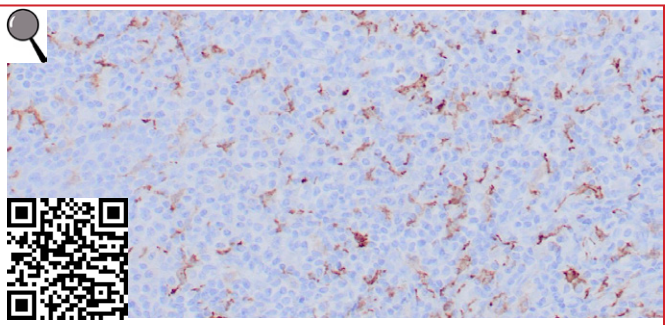


IHC: Human GIST stained stained with ZR424

CD163 (clone ZR426) IVD; RUO(EU)

Recognizes 140kDa CD163, an acute phase-regulated transmembrane protein whose function is to mediate the endocytosis of haptoglobin-hemoglobin complexes. Staining with anti-CD163 has been helpful to distinguish synovial macrophages from synovial intimal fibroblasts in rheumatoid arthritis. CD163 is positive in skin (histiocytes), gut, Kupffer cells, a few alveolar macrophages, macrophages in the placenta, and in macrophages in inflamed tissues including tumor tissue. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2782

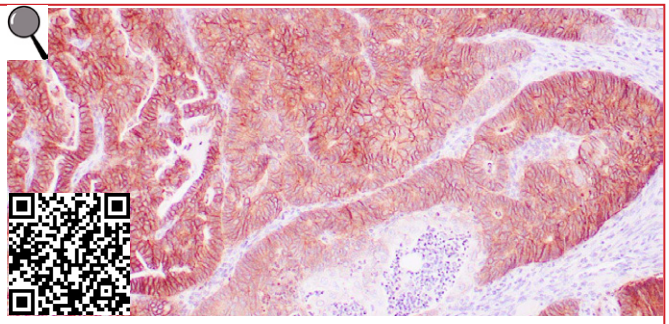


IHC: Human lymph node stained stained with ZR426

EP-CAM/ESA (clone ZR307) IVD

The binding epitope of this antibody is located in the first EGF-like repeat domain (EGF1) between amino acids 27-59 of Ep-CAM. EpCAM is expressed in most simple epithelia and a vast majority of carcinomas with the exception of adult squamous epithelium, hepatocytes and gastric epithelial cells. ZR307 distinguishes adenocarcinoma from pleural mesothelioma and hepatocellular carcinoma and serous carcinomas of the ovary from mesothelioma.

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2557

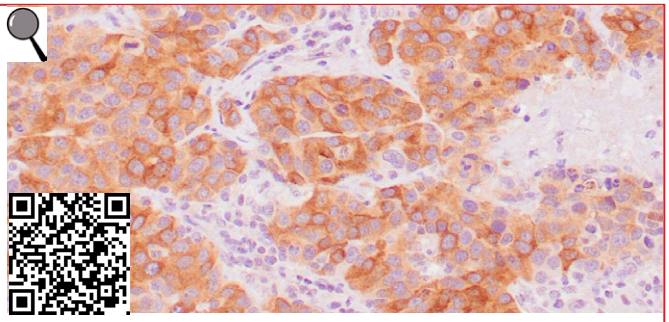


IHC: Human colon adenocarcinoma stained with ZR307

Melan-A (MART-1) (clone A103) IVD

MART-1 (Melanoma Antigen Recognized by T cells 1) or Melan-A1 is a newly identified melanocyte differentiation antigen recognized by autologous cytotoxic T lymphocytes. MART-1 is present in melanosomes and endoplasmic reticulum. Clone 103 does not cross-react with MAGE-1 or tyrosinase protein. Clone 103 labels melanomas and other tumors showing melanocytic differentiation. It does not stain tumor cells of epithelial, lymphoid, glial, or mesenchymal origin. (more)

Species: Mouse Monoclonal **Cat#:** Z2052

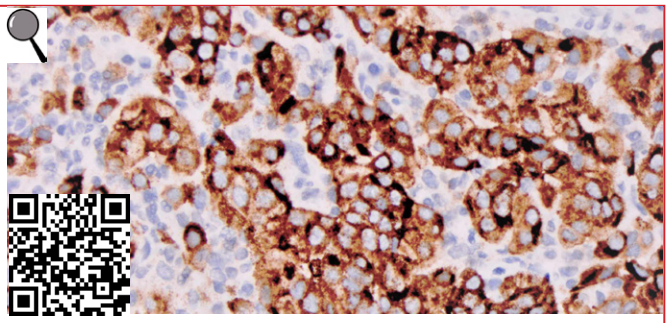


IHC: Human melanoma stained with A103

Melanosome (clone HMB-45) IVD

HMB-45 is a useful tool for classifying melanomas and melanocytic lesions and differentiating metastatic melanomas from other poorly differentiated tumors when used in a panel of antibodies. By IHC, HMB-45 specifically recognizes a protein in melanocytes and melanomas. Intradermal nevi, normal adult melanocytes, and non-melanocytic cells are negative. The Melanosome antibody does not stain tumor cells of epithelial, lymphoid, glial, or mesenchymal origin.

Species: Mouse Monoclonal **Cat#:** Z2088

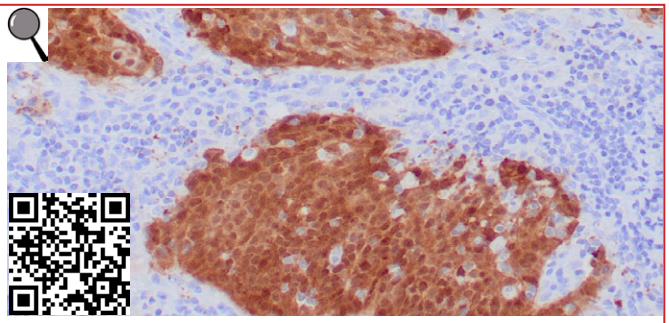


IHC: Human melanoma stained with HMB-45

p16*INK4a* (clone ZR407) IVD; RUO(EU)

p16*INK4a* is a specific inhibitor of cdk4/cdk6, and a tumor suppressor. Aberrant p16*INK4a* gene is reported among melanomas, gliomas, esophageal, pancreatic, lung, and urinary bladder carcinomas, and some types of leukemia. Expression of p16*INK4a* (p16 positive) is is highly correlated with human papilloma virus (HPV) infection in head and neck squamous cell carcinomas (HNSCC). p16*INK4a* status is an important prognostic indicator in HNSCC and the p16*INK4a* positive/HPV16... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2763

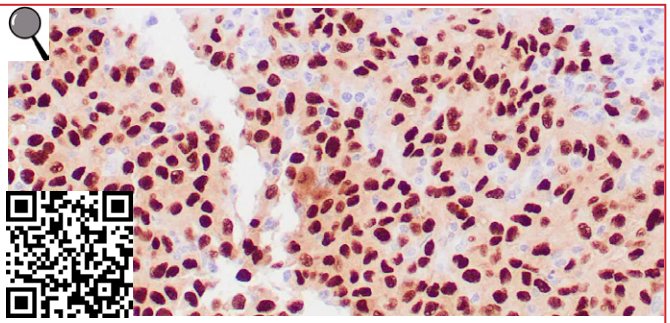


IHC: Invasive NSCC stained with ZR407

SOX-10 (clone ZR275) IVD

SOX-10, is a sensitive marker of melanoma. SOX-10 is moderately to strongly positive in desmoplastic or spindle cell melanomas, which is usually negative for HMB-45, Melan-A or even S-100. SOX-10 is diffusely expressed in schwannomas, neurofibromas, sustentacular cells of pheochromocytomas and paragangliomas. SOX-10 reaction is not identified in any other mesenchymal and epithelial tumors except for myoepitheliomas and diffuse astrocytomas. (more)

Species: Monospecific Rabbit Monoclonal, recombinant **Cat#:** Z2591

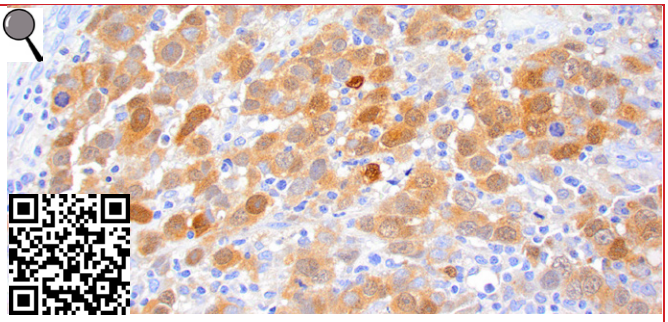


IHC: Human malignant melanoma stained with ZR275

S-100B (clone ZR379) IVD; RUO(EU)

ZR379 can localize S-100A and S-100B in various tissue sections. S-100 protein is 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, as well as in glial cells. Neoplasms derived from these cells also express S-100 protein non-uniformly. Well-differentiated salivary gland tumors, adipose and cartilaginous tissue, and Schwann cell-derived tumors express S-100B protein. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2670

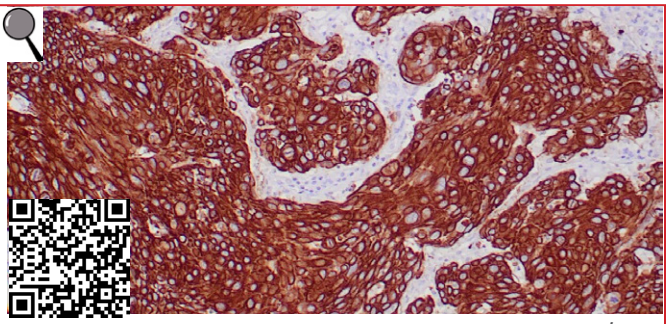


IHC: Human melanoma stained with ZR379

Cytokeratin, Pan (clone AE1/AE3) IVD

AE1/AE3 is a broad-spectrum anti pan-keratin antibody cocktail which differentiates epithelial from non-epithelial tumors. Many studies have shown the usefulness of keratins as markers in cancer research and tumor diagnosis. MAb AE1 recognizes the 56.5, 50, 50', 48, and 40kDa keratins of acidic subfamily, whereas the AE3 MAb reacts with the basic keratins of 65-67, 64, 59, 58, 56, and 52kDa. AE1/AE3 reacts with keratinized (56.5/65-67) and corneal (55/64) epidermis, ... (more)

Species: Mouse Monoclonal **Cat#:** Z2061

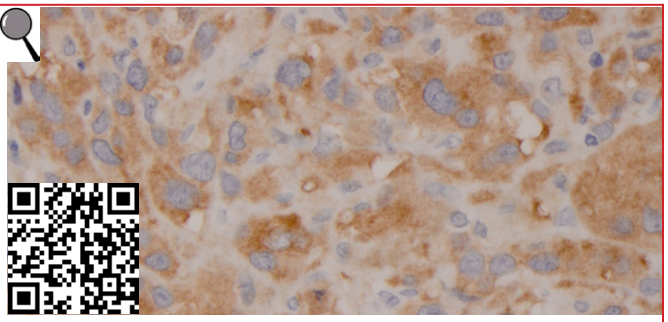


IHC: Infiltrating breast carcinoma stained with AE1/AE3

BRAF (V600E) (clone ZR6) IVD; RUO(EU)

ZR6 represents a new and favorable option in the detection of BRAF (V600E) in malignant melanoma and other malignancies. The V600E mutation in the BRAF gene leads to the production of a constitutively active BRAF protein, resulting in uncontrolled cell growth and division. The BRAF (V600E) antibody specifically binds to the mutated BRAF protein, allowing pathologists to detect the mutation in solid tumors such as thyroid cancer, bladder urothelial cancer, chronic lymphocytic leukemia, colorectal cancer, glioblastoma multiforme (GBM)... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2811

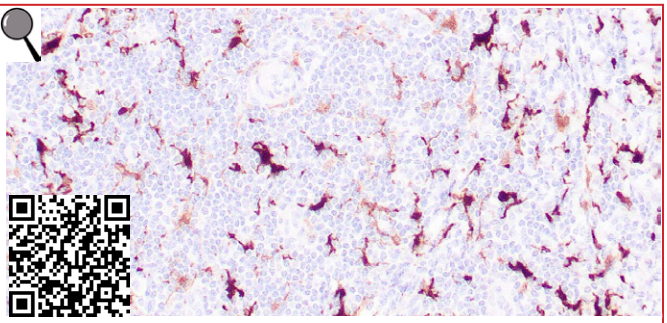


IHC: Human melanoma stained with ZR6

Factor XIIIa (clone ZM84) IVD

Anti-factor XIIIa has been found to be useful in differentiating between dermatofibroma (almost all cases are positive), dermatofibrosarcoma protuberans (-/+) and desmoplastic malignant melanoma (-). Anti-factor XIIIa positivity is also seen in capillary hemangioblastoma, hemangioendothelioma, hemangiopericytoma, xanthogranuloma, xanthoma, hepatocellular carcinoma, glomus tumor, and meningioma.

Species: Mouse Monoclonal, recombinant **Cat#:** Z2394

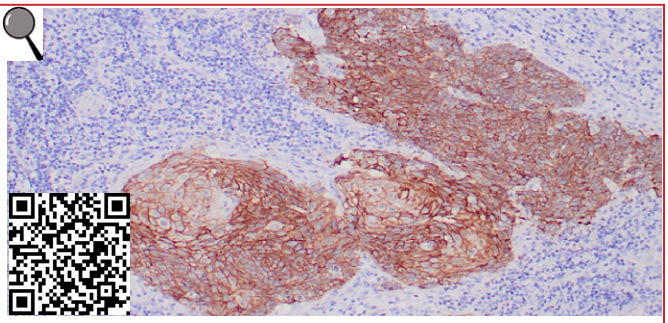


IHC: Human neuroblastoma stained with ZM84

Desmoglein-3 (clone ZR128) IVD

Recognizes and is specific for 130kDa Desmoglein-3 (DSG3). DSG3 has a very high sensitivity (80%) and specificity (100%) in recognizing squamous cell carcinoma (SqCC). Therefore, DSG3 is considered an important marker for lung SqCC and can be a useful ancillary marker to separate SqCC from other subtypes of lung cancer. Moreover, studies have shown that DSG3 expression in lung SqCC may indicate a poor prognosis. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2438

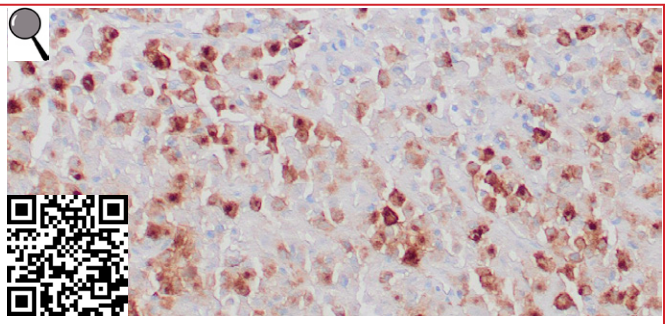


IHC: Squamous cell carcinoma stained with ZR128

Langerin (ZR170) IVD; RUO(EU)

Langerhans cells (LCs) are a subset of immature dendritic cells (DCs) that specifically localize in the epidermis and other mucosal epithelia. IHC evaluation of Langerin expression may have utility in substantiating a diagnosis of Langerhans cell histiocytosis and separating this disorder from other non-Langerhans cell histiocytic proliferations. Langerin protein expression has utility in differentiating Langerhans cell histiocytosis from other non-Langerhans cell histiocytic proliferations. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2700

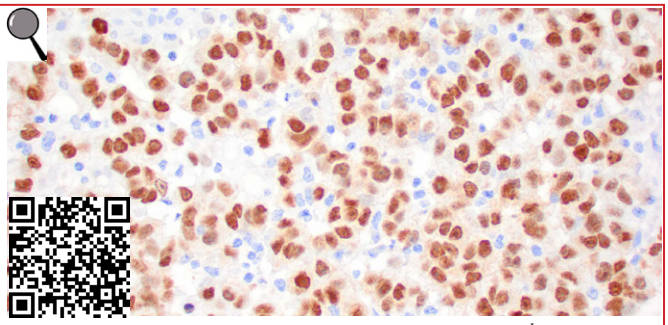


IHC: Langerhans cell histiocytosis stained with ZR170

MiTF (Microphthalmia) (clone C5/D5) IVD

MiTF is a basic helix-loop-helix-leucin zipper (b-HLH-ZIP) transcription factor implicated in pigmentation, mast cells and bone development. The mutation of Mi causes Waardenburg syndrome type II in humans. In mice, a profound loss of pigmented cells in the skin eye and inner ear results, as well as osteopetrosis and defects in natural killer and mast cells. Clone D5 cocktail is especially designed for sensitive detection of Mi protein. C5 reacts with both melanocytic and non-melanocytic isoforms of MiTF. (more)

Species: Mouse Monoclonal **Cat#:** Z2161

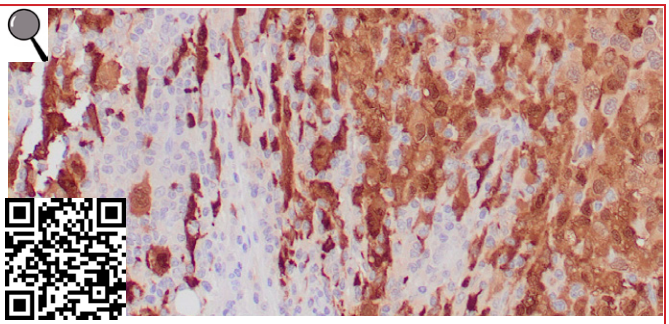


IHC: Human melanoma stained with C5/D5

S-100 (clone 4C4.9) IVD

S-100 protein is expressed in the antigen presenting cells such as the Langerhans cells in skin and interdigitating reticulum cells in the paracortex of lymph nodes. Antibody to S-100 stains Schwannomas, ependymomas, astrogliomas, almost all benign and malignant melanomas and their metastases. The S-100 antibody is excellent for immunohistochemical staining of formalin-fixed, paraffin embedded tissues. S-100 protein is highly soluble and may be eluted from frozen tissue during staining tissues. (more)

Species: Mouse Monoclonal **Cat#:** Z2055

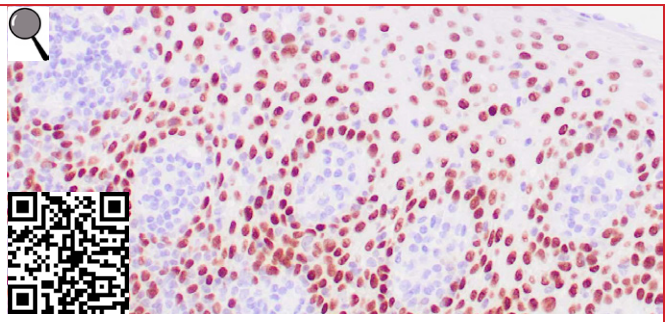


IHC: Human melanoma stained with 4C4.9

SOX-2 (clone ZM57) IVD

SOX-2 is required for stem-cell maintenance in the central nervous system. SOX-2 is necessary for regulating multiple transcription factors that affect Oct3/4 expression. SOX-2 is a marker of embryonic stem cell pluripotency that is associated with aggressive tumor behavior. SOX-2 is expressed in CNS tumors: glial tumors, supratentorial PNET, but not medulloblastoma or pineoblastoma. SOX-2 is also expressed in embryonal carcinoma of mediastinum and testis. (more)

Species: Monospecific Mouse Monoclonal, recombinant **Cat#:** Z2367

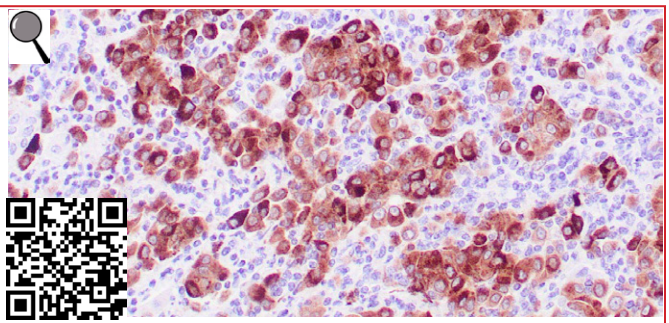


IHC: Human skin stained with ZM57

Tyrosinase (clone T311) IVD

Tyrosinase is one of the targets for cytotoxic T-cell recognition in melanoma patients. Clone T311 shows no cross-reaction with MAGE-1 and tyrosinase-related protein 1, TRP-1/gp75.1 Staining of melanomas with clone T311 showed tyrosinase in melanotic as well as amelanotic variants.1 Ab-1 is a useful marker for melanocytes and melanomas. Occasionally a minor band at 55kDa is also detected in Western Blotting. (more)

Species: Mouse Monoclonal **Cat#:** Z2074



IHC: Human melanoma stained with T311

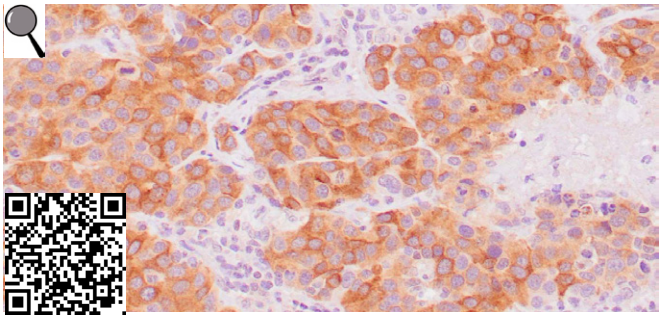
Section 2: Melanocytic Tumors

A melanocytic tumor is a type of neoplasm that can be either benign or malignant and originates from melanocytes. Benign melanocytic tumors are commonly acquired melanocytic nevi, while malignant melanocytic tumors, such as melanoma, are the most frequent cause of deaths associated with skin cancer.

Melan-A (MART-1) (clone A103) IVD

MART-1 (Melanoma Antigen Recognized by T cells 1) or Melan-A1 is a newly identified melanocyte differentiation antigen recognized by autologous cytotoxic T lymphocytes. MART-1 is present in melanosomes and endoplasmic reticulum. Clone 103 does not cross-react with MAGE-1 or tyrosinase protein. Clone 103 labels melanomas and other tumors showing melanocytic differentiation. It does not stain tumor cells of epithelial, lymphoid, glial, or mesenchymal origin. (more)

Species: Mouse Monoclonal **Cat#:** Z2052

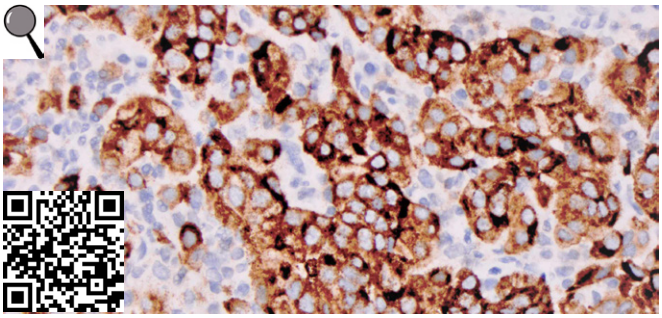


IHC: Human melanoma stained with A103

Melanosome (clone HMB-45) IVD

HMB-45 is a useful tool for classifying melanomas and melanocytic lesions and differentiating metastatic melanomas from other poorly differentiated tumors when used in a panel of antibodies. By IHC, HMB-45 specifically recognizes a protein in melanocytes and melanomas. Intradermal nevi, normal adult melanocytes, and non-melanocytic cells are negative. The Melanosome antibody does not stain tumor cells of epithelial, lymphoid, glial, or mesenchymal origin.

Species: Mouse Monoclonal **Cat#:** Z2088

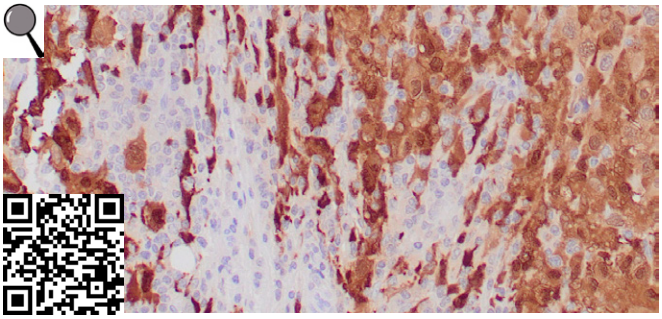


IHC: Human melanoma stained with HMB-45

S-100 (clone 4C4.9) IVD

S-100 protein is expressed in the antigen presenting cells such as the Langerhans cells in skin and interdigitating reticulum cells in the paracortex of lymph nodes. Antibody to S-100 stains Schwannomas, ependymomas, astrogliomas, almost all benign and malignant melanomas and their metastases. The S-100 antibody is excellent for immunohistochemical staining of formalin-fixed, paraffin embedded tissues. S-100 protein is highly soluble and may be eluted from frozen tissue during staining tissues. (more)

Species: Mouse Monoclonal **Cat#:** Z2055

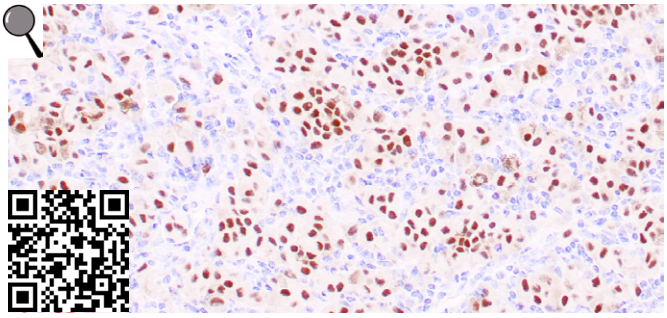


IHC: Human melanoma stained with 4C4.9

PRAME (clone ZR383) IVD; RUO(EU)

A transcriptional repressor, inhibiting retinoic acid signaling. Gene encodes an antigen that is preferentially expressed in human melanomas and that is recognized by cytolytic T lymphocytes. It is not expressed in normal tissues, except testis. The encoded protein acts as a repressor of retinoic acid receptor, and likely confers a growth advantage to cancer cells via this function. Clone ZR383 is useful in differentiating malignant melanoma from benign nevi.

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2674



IHC: Liver with metastatic melanoma stained with ZR383

Section 3: Mast Cell Immunohistochemistry

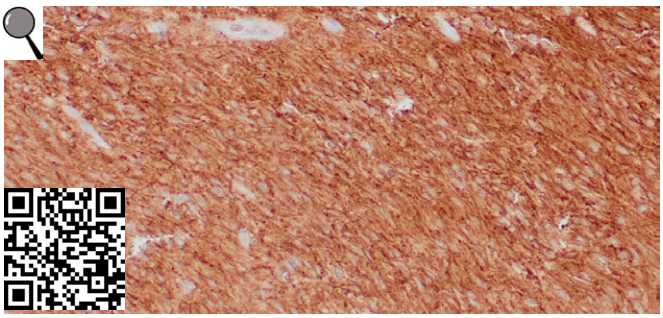
Mast cells, identified through immunohistochemistry, are involved in both melanoma development and progression, with their effects varying depending on the stage of the tumor. Some studies suggest that mast cells promote melanoma progression by enhancing angiogenesis and tumor growth, while others indicate that they may have an inhibitory effect on tumor development.

CD117 (clone ZR424)

ASR; RUO(EU)

Recognizes a protein of 145kDa, identified as CD117/p145kit. It is found on a wide variety of tumor cells including follicular and papillary carcinoma of the thyroid, adenocarcinomas from endometrium, lung, ovary, pancreas, and breast as well as malignant melanoma, endodermal sinus tumor, and small cell carcinoma. However, anti-CD117 has been particularly useful in differentiating gastrointestinal stromal tumors from Kaposi sarcoma, tumors of smooth muscle origin, fibromatosis, and neural tumors of the GI tract. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2780



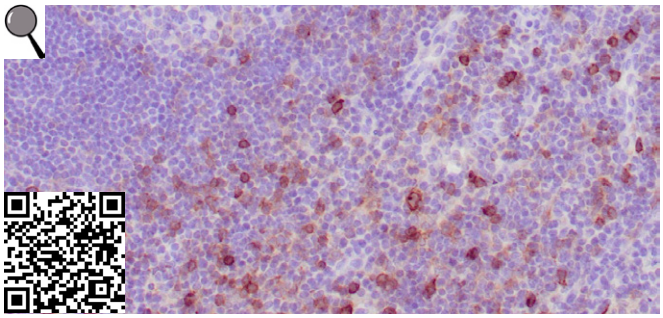
IHC: Human GIST stained with ZR424

CD25 (clone ZM466)

IVD; RUO(EU)

CD25, (IL-2Rα), is found on the surface of certain immune cells. It plays a crucial role in the immune system by modulating the activity and function of T cells. CD25 antibody expression is a reliable diagnostic tool for distinguishing neoplastic mast cell aggregates from reactive proliferations. CD25 is overexpressed in some hematologic malignancies, such as adult T-cell leukemia/lymphoma (ATLL) and certain types of Hodgkin lymphoma, making it a potential target for therapeutic interventions. (more)

Species: Mouse Monoclonal, recombinant **Cat#:** Z2817



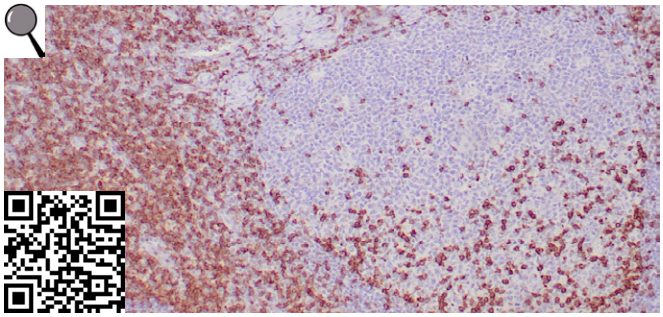
IHC: Human spleen stained with ZM466

CD2 (clone ZR100)

IVD

CD2 is mainly present on the surface of mature T cells and NK cell membranes, while B cells are usually not expressed. It can be used to label the diagnosis and study of normal T cells and their associated tumors, such as pre-t cell lymphoma, marginal T cell lymphoma, and anaplastic cell lymphoma. CD2 antibody is helpful for the identification of precursor and mature T-cell lymphomas. Aberrant loss of CD2 in T-cell lymphomas may help to distinguish them from reactive T-cell proliferation.

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2603



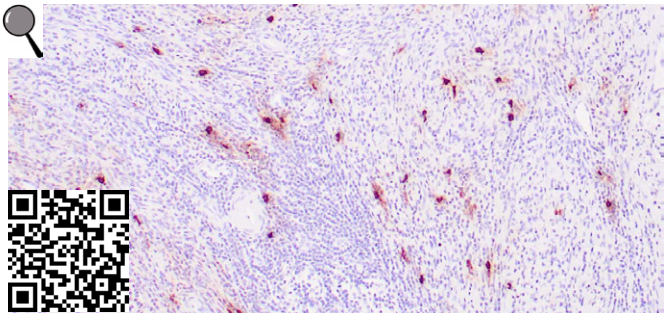
IHC: Human tonsil stained with ZR100

Tryptase (clone ZM96)

IVD

Reacts with mast cells distributed in skin, synovium, lung, and heart. Human mast cell tryptase is an important marker of mast cell activation and is an important mediator of inflammation. Mastocytosis is marked byt abnormal accumulation of mast cells in one or multiple organs. Anti-tryptase, combined with anti-CD2, anti-CD25, and anti-CD117, can be useful in identifying reactive mast cell hyperplasia, myelogenous neoplasms, mast cell leukemia, and mastocytosis (more).

Species: Monospecific Mouse Monoclonal, recombinant **Cat#:** Z2406



IHC: Human tonsil stained with ZM96

Section 4: Spindle Cell Neoplasms of Skin

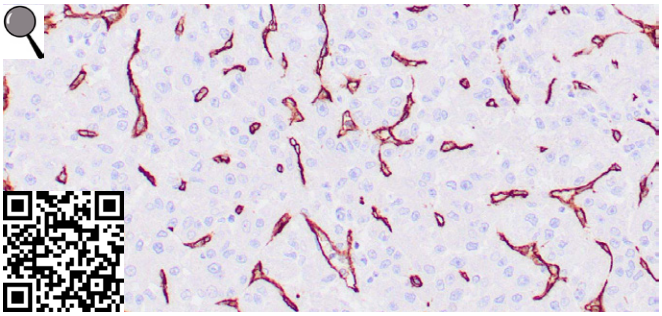
Spindle cell melanoma is a rare subtype of melanoma characterized by a high proportion of spindle-shaped cells. These cells can be arranged in sheets or fascicles. It's crucial to differentiate spindle cell melanoma from desmoplastic melanoma, which also features spindle cells but has a different cellular arrangement and clinical behavior.

CD34 (clone QBEnd-10)

IVD

CD34, a transmembrane glycoprotein, is selectively expressed on human lymphoid and myeloid hematopoietic progenitor cells. Staining for CD34 has been used to measure angiogenesis, which predicts tumor recurrence. CD34 can be used to distinguish lymphocyte rich thymoma (CD34+ cells) from T cell acute lymphoblastic leukemia (T ALL, CD34-), and for clinical bone marrow transplantation, and to identify blasts in general and in hypoplastic marrows. (more)

Species: Mouse Monoclonal, recombinant **Cat#:** Z2063



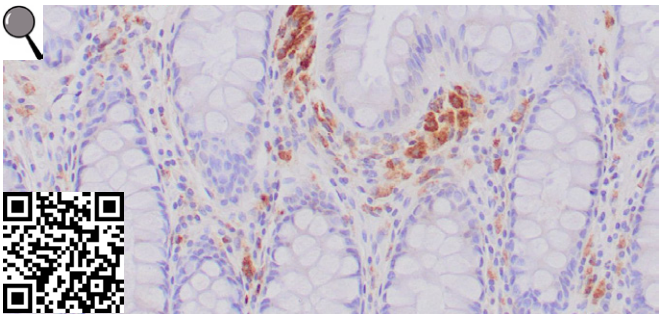
IHC: Human thyroid tissue stained with QBEnd-10

CD68 (clone ZR302)

IVD

The CD68 antibody is important for identifying macrophages in tissue sections. CD68 is expressed in macrophages in a wide variety of human tissues, including Kupffer cells and macrophages in the red pulp of the spleen, in lamina propria of the gut, in lung alveoli, and in bone marrow. The CD68 antibody reacts with myeloid precursors and peripheral blood granulocytes. CD68 is also expressed in plasmacytoid T cells, which are thought to be of monocyte/macrophage origin. (more)

Species: Rabbit Monoclonal, recombinant **Cat:** Z2732



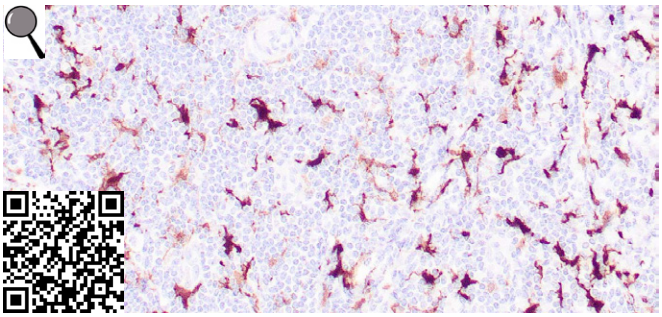
IHC: Human colon stained with ZR302

Factor XIIIa (clone ZM84)

IVD

Anti-factor XIIIa has been found to be useful in differentiating between dermatofibroma (almost all cases are positive), dermatofibrosarcoma protuberans (-/+) and desmoplastic malignant melanoma (-). Anti-factor XIIIa positivity is also seen in capillary hemangioblastoma, hemangioendothelioma, hemangiopericytoma, xanthogranuloma, xanthoma, hepatocellular carcinoma, glomus tumor, and meningioma.

Species: Mouse Monoclonal, recombinant **Cat#:** Z2394



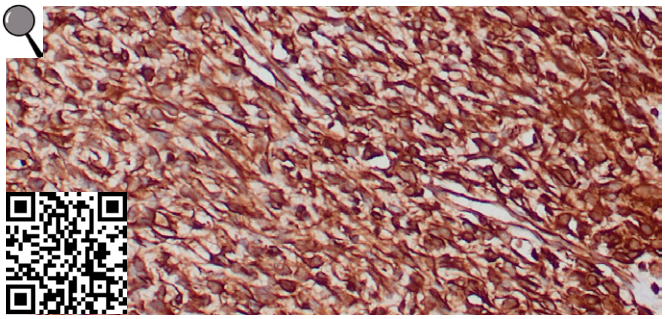
IHC: Human neuroblastoma stained with ZM84

Vimentin (clone ZR381)

IVD

Anti-vimentin alone is of limited value as a diagnostic tool; however, when used in panels with other antibodies, it is helpful for the sub-classification of a given tumor. Expression of vimentin, when used in conjunction with anti-keratin, is useful when distinguishing melanomas from undifferentiated carcinomas and large cell lymphomas. All melanomas and Schwannomas react strongly with anti-vimentin. It labels various mesenchymal cells, including melanocytes, lymphocytes, endothelial cells... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2672



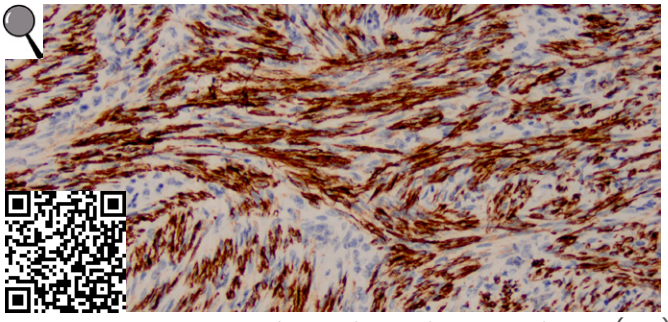
IHC: Gastrointestinal stromal tumor stained with ZR381

Actin, Smooth Muscle (clone 1A4)

IVD

Anti-SMA stains smooth muscle cells in vessel walls, gut wall, and myometrium. Myoepithelial cells in breast and salivary gland are also stained. This antibody reacts with tumors arising from smooth muscles and myoepithelial cells. Use Actin and/or Tubulin for monitoring total protein load on Western blots.

Species: Mouse Monoclonal **Cat#:** Z2066



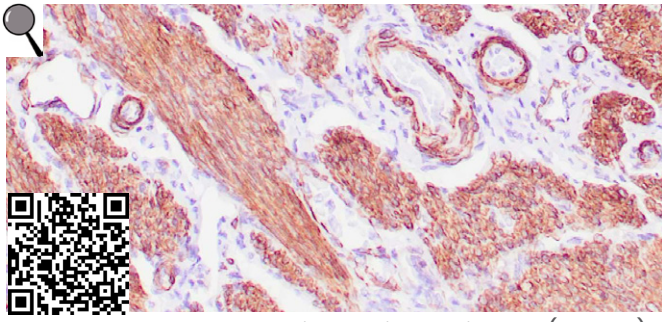
IHC: Human uterus stained with anti-SMA antibody (1A4)

Actin, Muscle Specific (clone HHF35)

IVD

Anti-MSA reacts with actin from tissue extracts of uterus, ileum, aorta, diaphragm, heart, and smooth muscle cells. It recognizes the alpha actin from skeletal, cardiac, and smooth muscle and the gamma actin from smooth muscle sources. It stains tumors of smooth muscle (leiomyomas and leiomyosarcomas) as well as skeletal muscle (rhabdomyomas and rhabdomyosarcomas).

Species: Mouse Monoclonal **Cat#:** Z2064



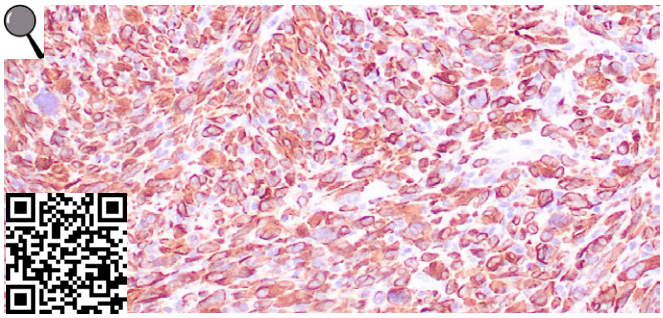
IHC: Human uterus stained with anti-MSA (HHF35)

Desmin (clone ZM34)

IVD

Desmin is an intermediate filament protein of both smooth and striated muscles. Antibody to desmin reacts with striated (skeletal and cardiac) as well as smooth muscle cells. In skeletal and cardiac muscles, the staining is confined to the Z-bands giving a characteristic striated appearance. Anti-desmin antibody is useful in identification of tumors of myogenic origin. It reacts with leiomyosarcomas (smooth muscle) as well as rhabdomyosarcomas (striated muscle).

Species: Mouse Monoclonal **Cat#:** Z2339

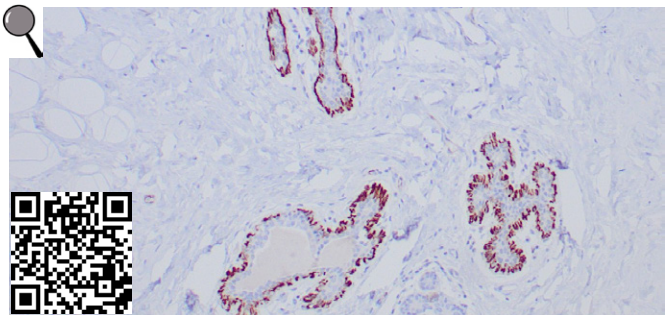


IHC: Human uterus stained with anti-MSA (ZM34)

Caldesmon (clone ZR413) IVD; RUO(EU)

Specific for 150kDa (high MW variant of Caldesmon). Caldesmon is a developmentally regulated protein involved in smooth muscle and non-muscle contraction which interacts with actin, myosin, tryopomyosin and calmodulin. Zeta's Caldesmon antibody detects smooth muscle and tumors of smooth muscle, myofibroblastic and myoepithelial differentiation. Zeta's Caldesmon antibody is also useful in the differentiation of epithelioid mesothelioma from serous papillary carcinoma of the ovary. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2769



IHC: Normal human breast tissue stained with ZR413

Section 5: Vascular Lesions of the Skin

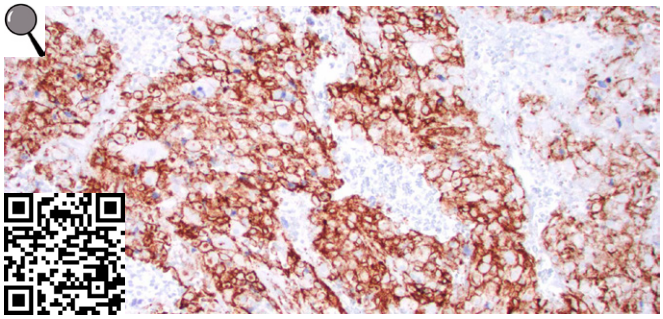
Immunohistochemistry (IHC) plays a crucial role in diagnosing and classifying vascular lesions of the skin, particularly when histopathological features are ambiguous. By utilizing specific antibodies against endothelial markers, IHC helps distinguish between benign and malignant vascular lesions and differentiate various subtypes.

CD31 (clone JC/70A)

IVD

CD31 is an endothelial marker in normal tissues and in benign and malignant proliferations. In cryostat sections and blood smears the CD31 antibody also stains megakaryocytes, platelets and occasionally plasma cells. The CD31 antibody reacts weakly with mantle zone B cells, peripheral T cells, and neutrophils. The CD31 antibody is of value in the study of benign and malignant vascular tumors. Staining for CD31 has also been used to measure angiogenesis, which reportedly predicts tumor recurrence.

Species: Mouse Monoclonal **Cat#:** Z2136



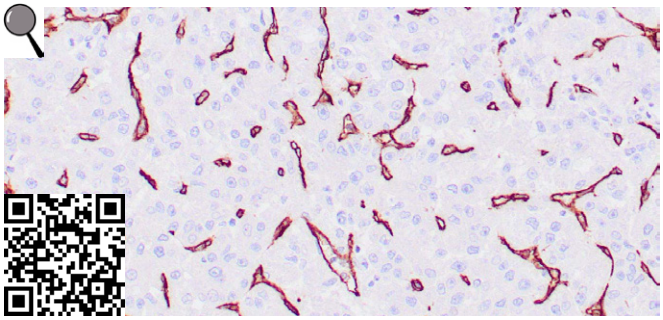
IHC: Human angiosarcoma stained with JC/70A

CD34 (clone QBEnd-10)

IVD

CD34, a transmembrane glycoprotein, is selectively expressed on human lymphoid and myeloid hematopoietic progenitor cells. Staining for CD34 has been used to measure angiogenesis, which predicts tumor recurrence. CD34 can be used to distinguish lymphocyte rich thymoma (CD34+ cells) from T cell acute lymphoblastic leukemia (T ALL, CD34-), and for clinical bone marrow transplantation, and to identify blasts in general and in hypoplastic marrows. (more)

Species: Mouse Monoclonal, recombinant **Cat#:** Z2063



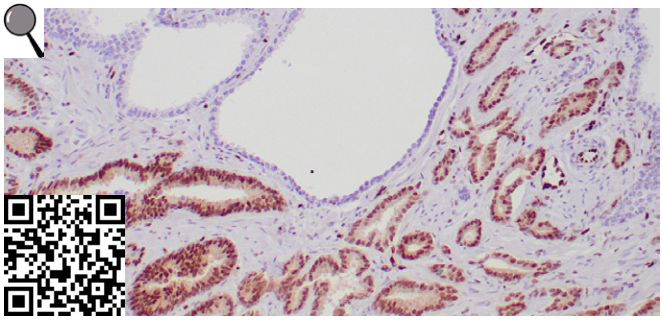
IHC: Human thyroid tissue stained with QBEnd-10

ERG (clone ZR331)

IVD

ERG, is involved in hematopoietic and endothelial development and is constitually expressed in endothelial cells in blood and lymphatic vessels, and in bone marrow stem cells. ERG is expressed in virtually all endothelial neoplasms including hemangioendothelioma, angiosarcoma and Kaposi sarcoma. ERG is overexpressed secondary to gene rearrangement in cases of prostate adenocarcinoma, GI stromal tumor, synovial sarcoma, meningioma, epithelioid sarcoma, malignant rhabdoid tumor, ... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2637



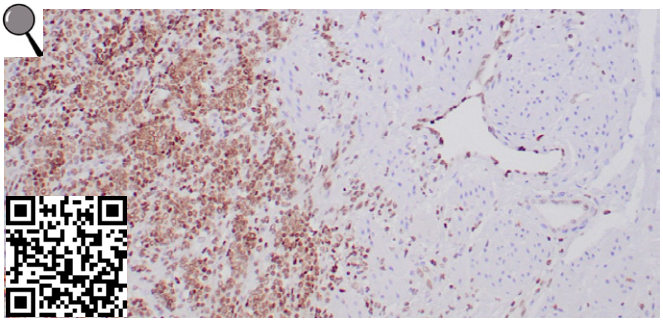
IHC: Human vascular endothelial cells stained with ZR331

FLI-1 (clone ZR217)

IVD; RUO(EU)

Involved in cellular proliferation and tumorigenesis. ~90% of Ewing's Sarcoma (EWS) / Primitive Neuroectodermal Tumors (PNET) have a specific translocation resulting in the fusion of EWS to Fli-1, and production of an EWS-Fli-1 fusion protein. Pathologists use FLI-1 to differentiate Ewing Sarcoma (EWS) from other round blue cell tumors, to distinguish EWS of kidney (positive) from blastema predominant Wilms tumor (negative), to distinguish EWS (positive) from small cell... more)

Species: Rabbit Monoclonal **Cat#:** Z2498



IHC: Ewing's sarcoma stained with stained with ZR217

Section 6: Cutaneous B Cell Lymphomas

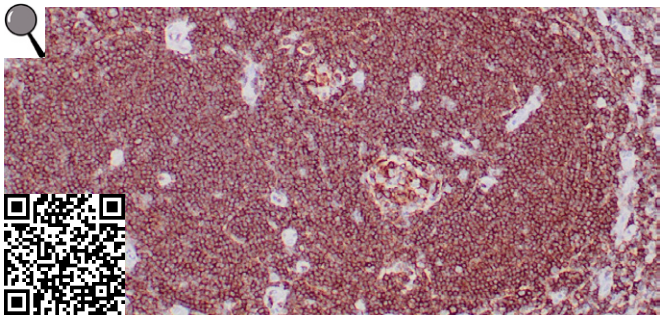
Cutaneous B-cell lymphoma (CBCL) is a rare type of cancer that originates in B lymphocytes and primarily affects the skin. It's characterized by lesions that can appear as rashes, bumps, or lumps on the skin. Most CBCLs are slow-growing (indolent) and tend to remain confined to the skin, with a good prognosis. However, some types can be more aggressive and may spread to other parts of the body. IHC is crucial in diagnosis, differentiating between various types and subtypes, and guide treatment decisions. IHC staining helps identify B-cell origin, characterize expanded B-cell populations, and characterize accompanying cells like T-cells and plasma cells.

CD20 (clone ZR243)

IVD; RUO(EU)

CD20 antibody reacts with most B-cells present in peripheral blood and lymphoid tissues and their derived lymphomas. In lymphoid tissue, germinal center blasts and B-immunoblasts are particularly reactive. Zeta's CD20 antibody is reliable for determing B-cell phenotype in known lymphoid tissues including rare CD20-positive T-cell lymphomas. The CD20 antibody reactivity has also been noted with Reed-Sternberg cells in cases of Hodgkin s disease, particularly of predominant lymphocyte type. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2717



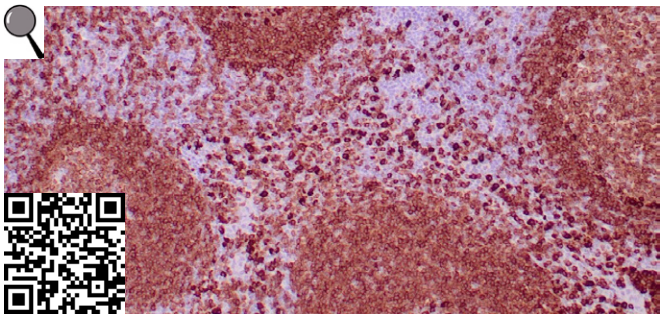
IHC: Human lymph node stained with with ZR243

CD79a (clone ZR237)

IVD

CD79a is a disulfide-linked heterodimer, consisting of CD79a / mb-1 and CD79b / B29 polypeptides, is non-covalently associated with membrane-bound immunoglobulins on B cells to constitute the B cell Ag receptor. CD79a is found in the majority of acute leukemias of precursor B cell type, in B cell lines, B cell lymphomas, and in some myelomas. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2533



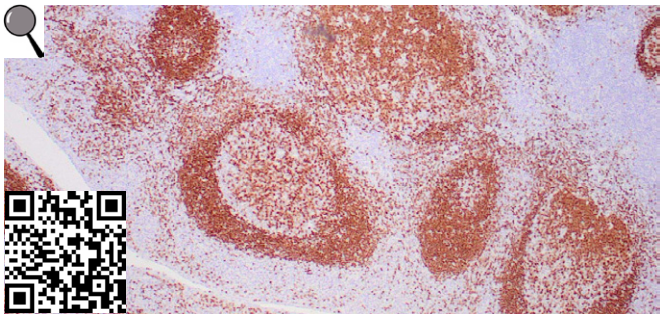
IHC: Human tonsil stained with ZR237

PAX-5 (clone ZR268)

IVD

PAX proteins are important regulators in early development, and alterations in the expression of their genes are thought to contribute to neoplastic transformation. Its expression has also been detected in developing CNS and testis; therefore, PAX-5 gene product may not only play an important role in B-cell differentiation, but also in neural development and spermatogenesis. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2582



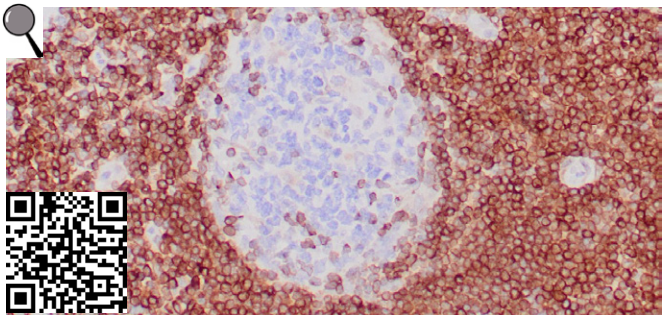
IHC: Human tonsil stained with ZR268

Bcl-2 (clone ZR130)

IVD

Anti-BCL-2 (B Cell Lymphoma 2, a protoncogene) can distinguish follicular hyperplasia of lymph node from follicular lymphoma. BCL-2 is usually overexpressed in follicular lymphoma, which brings BCL-2 gene adjacent to active immunoglobulin heavy chain gene. Follicular lymphomas are BCL-2 negative. BCL-2 can detect immature enteric ganglion cells in pediatric intestinal pseudo-obstruction. BCL-2 may have prognostic value in early stage breast cancer. (more)

Species: Rabbit Monoclonal **Cat#:** Z2682

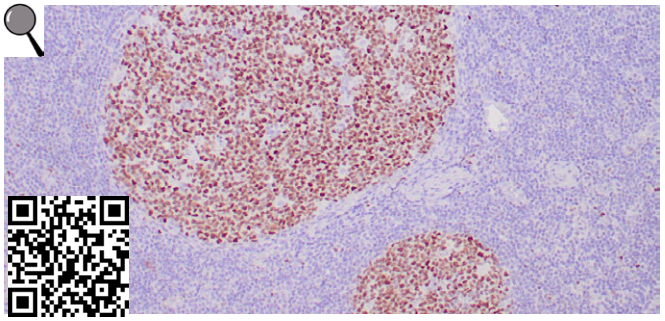


IHC: Human tonsil stained with ZR130

Bcl-6 (clone ZR380) IVD

Zeta's BCL-6 antibody is useful in a number of diagnostic settings: (1) differential diagnosis of small B-cell lymphoma given that follicular lymphoma will show BCL-6 (and CD10) positivity whereas other small B-cell lymphomas are usually negative; (2) BCL-6 is an important prognostic marker in diffuse large B-cell lymphomas (DLBCL), where CD10, BCL-6 and MUM1/IRF4 are used to identify germinal center and activated B-cell phenotypes; and (3) BCL-6 can be valuable in distinguishing classical Hodgkin lymphoma from nodular ... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2658

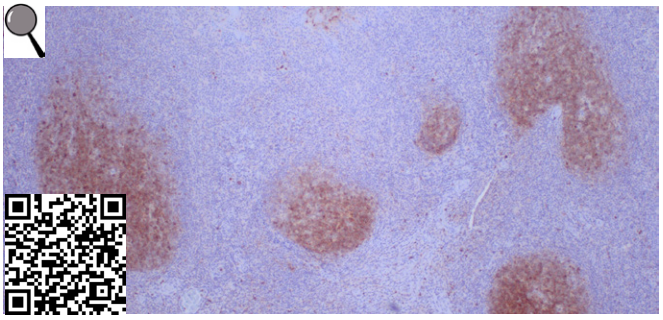


IHC: Human reactive lymph node stained with ZR380

CD10 (clone ZR468) IVD; RUO(EU)

CD10 is expressed on the cells of lymphoblastic, Burkitt's, and follicular germinal center lymphomas, cells from patients with chronic myelocytic leukemia (CML) and on the surface of normal early lymphoid progenitor cells, immature B cells within adult bone marrow and germinal center B cells within lymphoid tissue. CD10 is also present on breast myoepithelial cells, bile canaliculi, fibroblasts, with especially high expression on the brush border of kidney and gut epithelial cells.... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2828

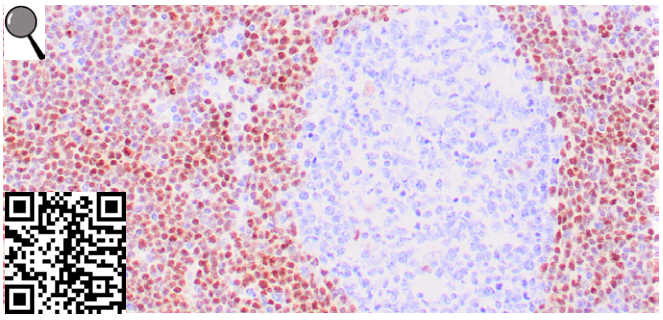


IHC: Human follicular lymphoma stained with ZR468

Cyclin D1 (clone ZR197) IVD

A key cell cycle regulators, overexpressed in a wide variety of human neoplasms. Cyclin D1 is a protein of 36kDa. The Cyclin D1 antibody neutralizes the activity of Cyclin D1 in vivo. About 60% of mantle cell lymphomas (MCL) contain a t(11; 14)(q13; q32) translocation resulting in over-expression of Cyclin D1. The Cyclin D1 antibody is useful in identifying mantle cell lymphomas (Cyclin D1 positive) from CLL/SLL and follicular lymphomas (Cyclin D1 negative). (more)

Species: Rabbit Monoclonal **Cat#:** Z2515

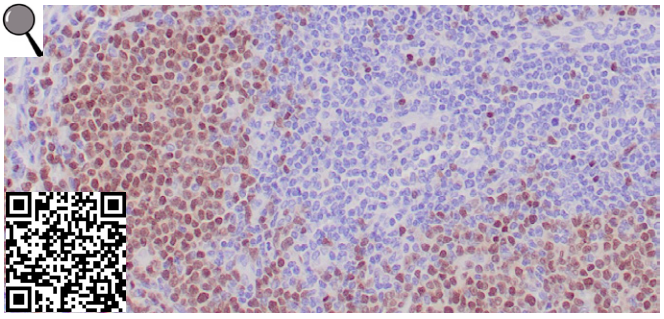


IHC: Human mantle cell lymphoma stained with ZR197

SOX-11 (clone ZR462) IVD; RUO(EU)

SOX-11 is a transcription factor that belongs to the SOX (SRY-related HMG-box) family of proteins. These proteins play a crucial role in regulating gene expression during development and maintaining various tissues' functions in adults. SOX-11 is normally expressed in the developing human central nervous system and plays a role in embryonic cell determination. SOX-11 is aberrantly expressed in various types of cancers. In mantle cell lymphoma (MCL), SOX-11 is often overexpressed and is used as a diagnostic marker. (more)

Species: Rabbit Monoclonal **Cat#:** Z2823



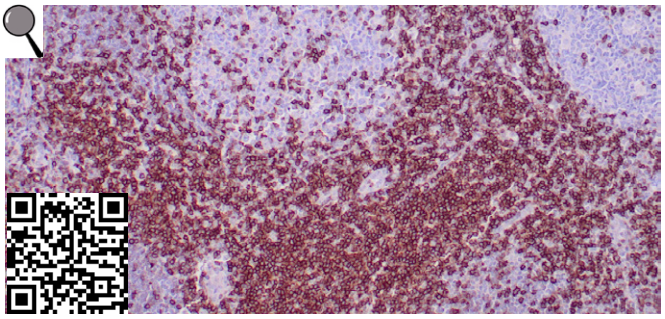
IHC: Human mantle cell lymphoma stained with ZR462

CD5 (clone ZR228)

IVD

CD5 is found on 95% of thymocytes and 72% of peripheral blood lymphocytes. The CD5 antibody detection is diagnostic in CLL/SLL within a panel of other B-cell markers, especially one that includes anti-CD23. The CD5 antibody is useful in differentiating among mature small lymphoid cell malignancies. In addition, the CD5 antibody can be used in distinguishing thymic carcinoma (+) from thymoma (-). The CD5 antibody does not react with granulocytes or monocytes. (more)

Species: Rabbit Monoclonal, recombinant **Cat:** Z2521



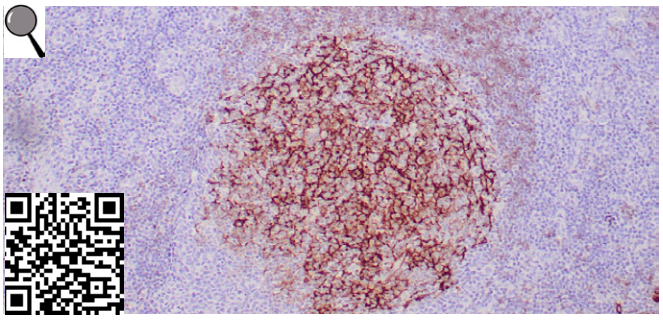
IHC: Human tonsil stained with ZR228

CD23 (clone ZR225)

IVD

CD23 may play a role in antigen presentation by B cells by interacting with CD40. The truncated molecule can be secreted, then function as a potent mitogenic growth factor. CD23 is expressed on a subpopulation of peripheral blood cells, B-lymphocytes and on EBV transformed B lymphoblastoid cell lines. CD23 is detected in neoplastic cells from B cell chronic lymphocytic leukemia cases and some cases on centroblastic/centrocytic lymphoma. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2516



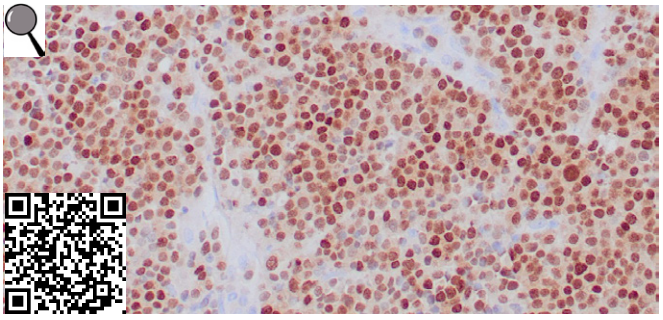
IHC: Human tonsil stained with ZR225

MUM1 (clone ZR411)

IVD; RUO(EU)

MUM1 is a nuclear transcription factor necessary for developing and activating B lymphocytes. Involved in the regulation of cell growth, transformation, induction of apoptosis, and development of T-cell immune response. MUM1 is useful in a panel with other markers for subclassifying malignant lymphomas and identifying plasma cell differentiation. Particularly, MUM1 may be helpful in the identification of plasma cell differentiation when morphologic evidence is lacking, and Ig ... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2767



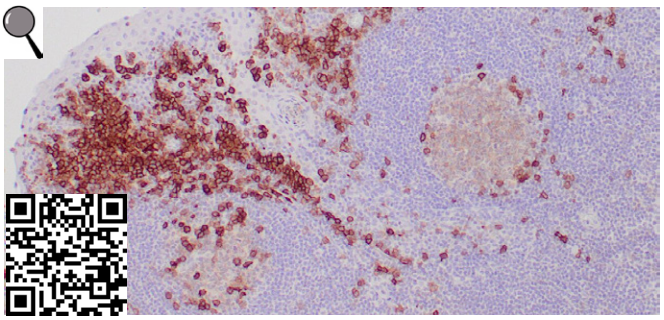
IHC: Human IgA myeloma stained with ZR411

CD38 (clone ZR351)

IVD

CD38 is a marker of cellular activation expressed by plasma cells, T cells, NK cells and other hematopoietic cell types during various stages of maturation. CD38 is also a marker of activation that is present on many hematopoietic cells, especially plasma cells. CD38 expression in lymphoid neoplasms is not specific for any discrete disease entity and can be aberrantly expressed in carcinoma and melanoma. The absence of CD38 (CD38-/CD34+)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2610



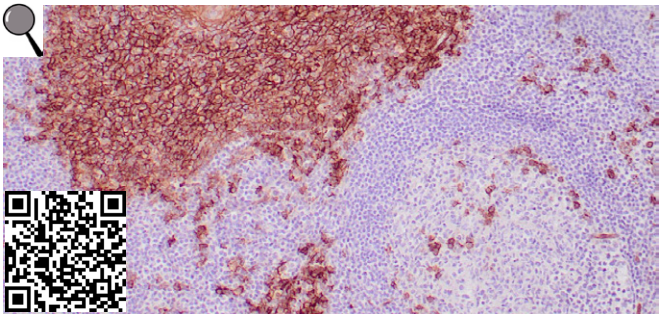
IHC: Human tonsil stained with ZR351

CD138 (clone ZR251)

IVD

CD138, also designated syndecan-1. The syndecans' main functions are to control cell growth and differentiation as well as to maintain cell adhesion and cell migration. Under normal conditions CD138 is predominantly expressed on mature plasma cells and early preB-cells, while other haematolymphoid cells are negative. CD138 is expressed in practically all cases of plasma cell malignancies and various non-haematolymphoid types of carcinomas. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2490



IHC: Human tonsil stained with ZR251

Section 7: CD30 Positive Lymphoproliferative Disorders

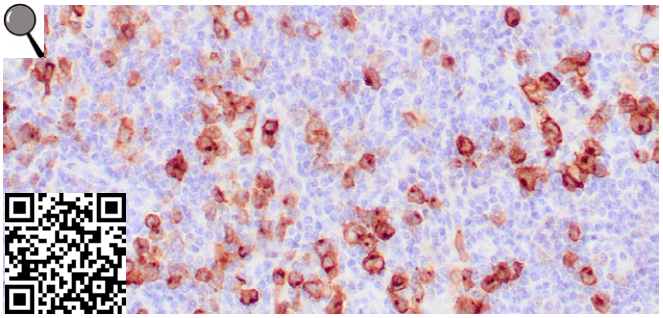
Cutaneous B-cell lymphoma (CBCL) is a rare type of cancer that originates in B lymphocytes and primarily affects the skin. It's characterized by lesions that can appear as rashes, bumps, or lumps on the skin. Most CBCLs are slow-growing (indolent) and tend to remain confined to the skin, with a good prognosis. However, some types can be more aggressive and may spread to other parts of the body. IHC is crucial in diagnosis, differentiating between various types and subtypes, and guide treatment decisions. IHC staining helps identify B-cell origin, characterize expanded B-cell populations, and characterize accompanying cells like T-cells and plasma cells.

CD30 (clone ZR248)

IVD

In Hodgkin's disease, CD30/Ki-1 antigen is expressed by mononuclear-Hodgkin and multinucleated Reed-Sternberg cells. CD30 is expressed by the tumor cells of a majority of anaplastic large cell lymphomas as well as by a varying proportion of activated T and B cells. The Zeta antibody to CD30 distinguishes large cell lymphomas derived from activated lymphoid cells from histiocytic malignancies and lymphomas derived from resting and precursor lymphoid cells or from anaplastic carcinomas. (more)

Species: Rabbit Monoclonal, recombinant **Cat:** Z2489



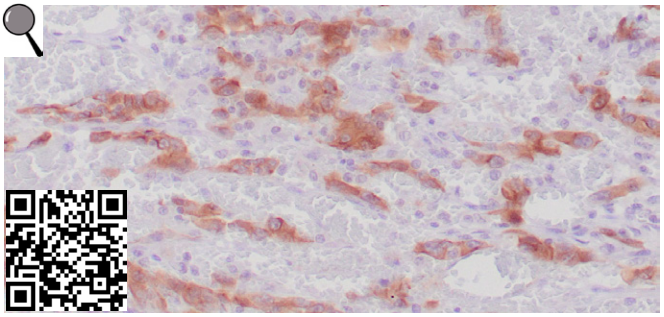
IHC: Human Hodgkin lymphoma stained with ZR248

ALK-1 (clone ZR305)

IVD

Anaplastic lymphoma kinase (ALK) is a member of the insulin receptor superfamily, and typically expressed at low levels in regions of the developing nervous system. ALK-1 may be activated in cancer through multiple mechanisms. Various solid tumors, have been found to aberrantly express ALK-1. ALK-1 staining is present within both the nucleus and cytoplasm and is positive in about 60% of ALCL. ALK-1 protein expression by tumor cells is an independent prognostic factor that predicts a favorable outcome. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2534



IHC: Human lung adenocarcinoma stained with ZR305

Section 8: Prognostic and Predictive Markers

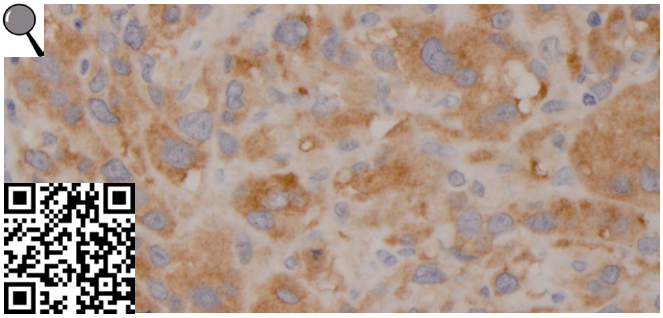
In dermatopathology, immunohistochemistry is used to identify prognostic and predictive biomarkers, helping to determine patient outcomes and predict responses to treatment. Prognostic markers, like Ki-67 in melanoma, indicate the likelihood of disease recurrence or progression, while predictive markers, such as PD-L1, can predict how a patient will respond to specific therapies.

Melanoma

BRAF (V600E) (clone ZR6) IVD; RUO(EU)

ZR6 represents a new and favorable option in the detection of BRAF (V600E) in malignant melanoma and other malignancies. The V600E mutation in the BRAF gene leads to the production of a constitutively active BRAF protein, resulting in uncontrolled cell growth and division. The BRAF (V600E) antibody specifically binds to the mutated BRAF protein, allowing pathologists to detect the mutation in solid tumors such as thyroid cancer, bladder urothelial cancer, chronic lymphocytic leukemia, colorectal cancer, glioblastoma multiforme (GBM)... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2811

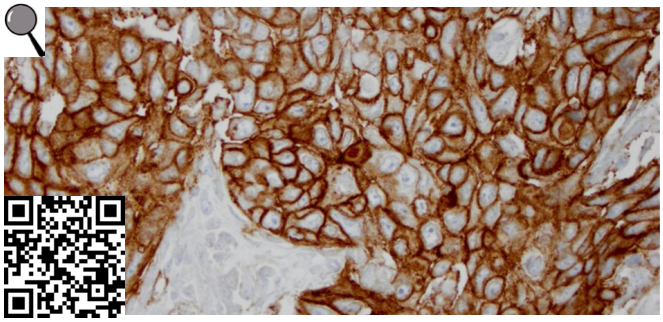


IHC: Human melanoma stained with ZR6

PD-L1 (clone ZR3) IVD

The interaction of PD-L1 with its receptor PD-1 is involved with regulating T cell activation and tolerance during pregnancy, tissue allografts, autoimmune disease and malignant transformation. PD-L1 is positive in a small number of normal tissues (immune cells and tonsil) and in a large number of cancer tissues including non-small cell lung carcinoma, cervical cancer, head and neck squamous cell carcinoma, urothelial carcinoma, triple negative breast cancer, and esophageal squamous cell carcinoma. Additionally, PD-L1 is often overexpressed in placenta... (more)

Species: Rabbit Monoclonal recombinant **Cat#:** Z2002



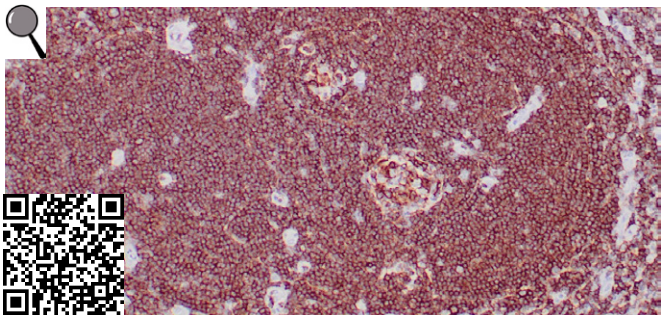
IHC: Human lung adenocarcinoma stained with ZR3

Hematolymphoid Tumors B Cell Markers

CD20 (clone ZR243) IVD; RUO(EU)

CD20 antibody reacts with most B-cells present in peripheral blood and lymphoid tissues and their derived lymphomas. In lymphoid tissue, germinal center blasts and B-immunoblasts are particularly reactive. Zeta's CD20 antibody is reliable for determing B-cell phenotype in known lymphoid tissues including rare CD20-positive T-cell lymphomas. The CD20 antibody reactivity has also been noted with Reed-Sternberg cells in cases of Hodgkin s disease, particularly of predominant lymphocyte type. (more)

Species: Rabbit Monoclonal recombinant **Cat#:** Z2717

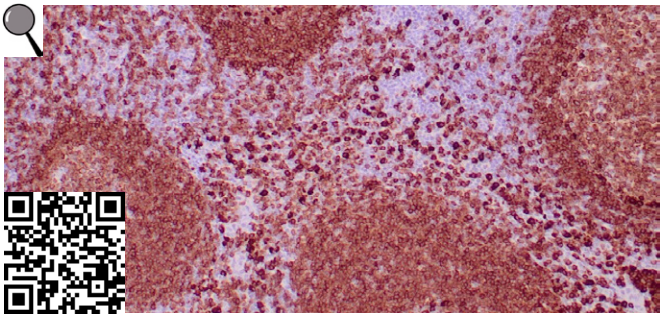


IHC: Human lymph stained with with ZR243

CD79a (clone ZR237) IVD

CD79a is disulfide-linked heterodimer, consisting of CD79a / mb-1 and CD79b / B29 polypeptides, is non-covalently associated with membrane-bound immunoglobulins on B cells to constitute the B cell Ag receptor. CD79a is found in the majority of acute leukemias of precursor B cell type, in B cell lines, B cell lymphomas, and in some myelomas. (more)

Species: Rabbit Monoclonal recombinant **Cat#:** Z2533



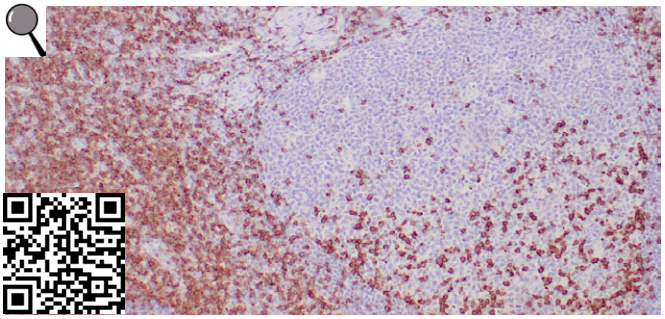
IHC: Human tonsil stained with ZR237

CD2 (clone ZR100)

IVD

CD2 is mainly present on the surface of mature T cells and NK cell membranes, while B cells are usually not expressed. It can be used to label the diagnosis and study of normal T cells and their associated tumors, such as pre-t cell lymphoma, marginal T cell lymphoma, and anaplastic cell lymphoma. CD2 antibody is helpful for the identification of precursor and mature T-cell lymphomas. Aberrant loss of CD2 in T-cell lymphomas may help to distinguish them from reactive T-cell proliferation. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2603



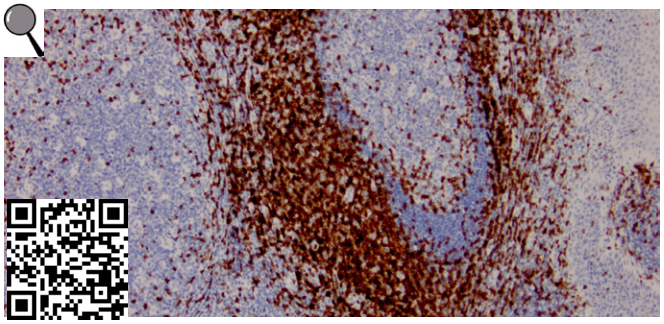
IHC: Human tonsil stained with ZR100

CD3 (clone ZR414)

IVD; RUO(EU)

Recognizes the epsilon chain of CD3, and is closely associated at the lymphocyte cell surface with the T cell antigen receptor (TCR). ZR414 can be used in IHC to identify T cells in benign and malignant disorders. The CD3 antibody stains both membrane and cytoplasm, and is useful for classification of neoplasms. The CD3 antigen is a highly specific marker for T cells and is present in the majority of T cell neoplasms. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2770



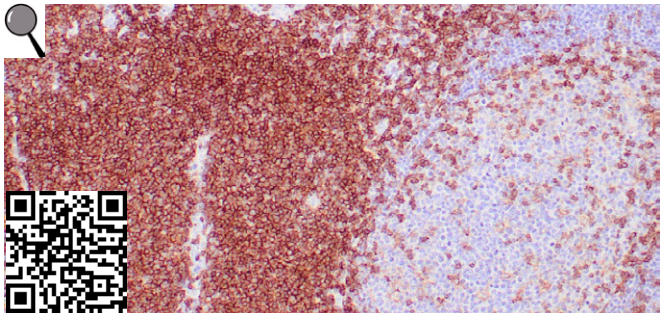
IHC: Human lymph node stained with ZR414

CD4 (clone ZR110)

IVD

CD4, a transmembrane glycoprotein, is found on a T cell subset representing 45% of peripheral blood lymphocytes and present on 80% of thymocytes and at a lower level on monocytes. CD4+ CD25+ FOXP3+ regulatory T cells maintain peripheral tolerance and prevent autoimmunity and may be prognostic factor in malignancies. CD4 acts as an HIV receptor on T cells, macrophages and brain and is downregulated by HIV proteins during AIDS progression. CD4 is a common marker for T cells and is used to classify lymphomas and inflammatory conditions. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2420



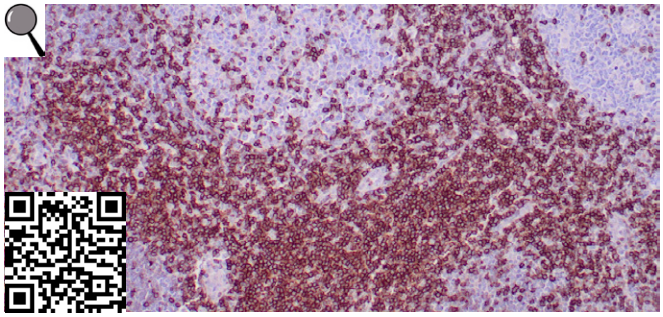
IHC: Human tonsil stained with ZR110

CD5 (clone ZR228)

IVD

CD5 is found on 95% of thymocytes and 72% of peripheral blood lymphocytes. The CD5 antibody detection is diagnostic in CLL/SLL within a panel of other B-cell markers, especially one that includes anti-CD23. The CD5 antibody is useful in differentiating among mature small lymphoid cell malignancies. In addition, the CD5 antibody can be used in distinguishing thymic carcinoma (+) from thymoma (-). The CD5 antibody does not react with granulocytes or monocytes. (more)

Species: Rabbit Monoclonal, recombinant **Cat:** Z2521

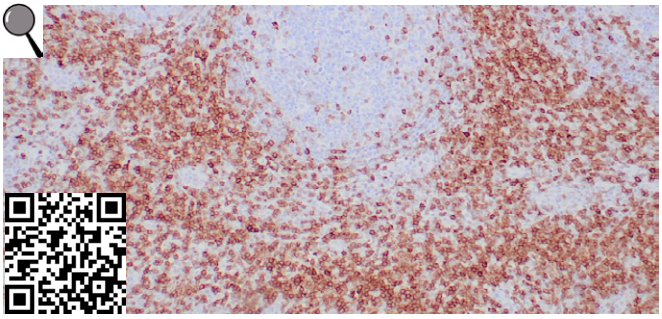


IHC: Human tonsil stained with ZR228

CD7 (clone ZR416) IVD; RUO(EU)

Recognizes 40kDa CD7 (gp40, Leu9). CD7 is a member of the immunoglobulin gene superfamily. CD7 is expressed on the majority of immature and mature T-lymphocytes, and and T cell leukemia. CD7 is also found on natural killer cells, a small subpopulation of normal B cells and on malignant B cells. Cross-linking surface CD7 positively modulates T cell and NK cell activity as measured by calcium fluxes, expression of adhesion molecules, cytokine secretion and proliferation. CD7 associates directly with phosphoinositol 3-kinase. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2772

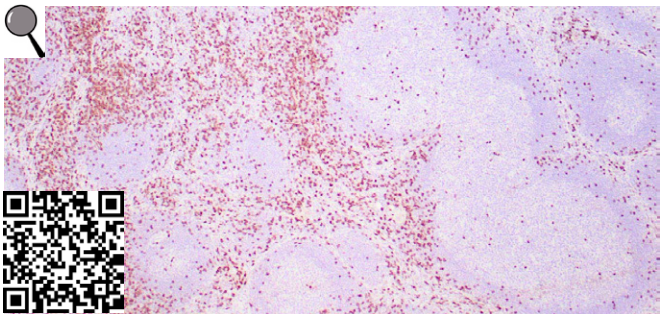


IHC: Human tonsil stained with ZR416

CD8 (clone ZM54) IVD

A majority of thymocytes and a subpopulation of mature T cells and NK cells express CD8a. CD8 binds to MHC class 1 and through its association with protein tyrosine kinase p56lck plays a role in T cell development and activation of mature T cells. For mature T-cells, CD4 and CD8 are mutually exclusive, so anti-CD8, generally used in conjunction with anti-CD4. It is a useful marker for distinguishing helper/inducer T-lymphocytes, and most peripheral T-cell lymphomas are CD4+/CD8-. (more)

Species: Mouse Monoclonal, recombinant **Cat:** Z2364



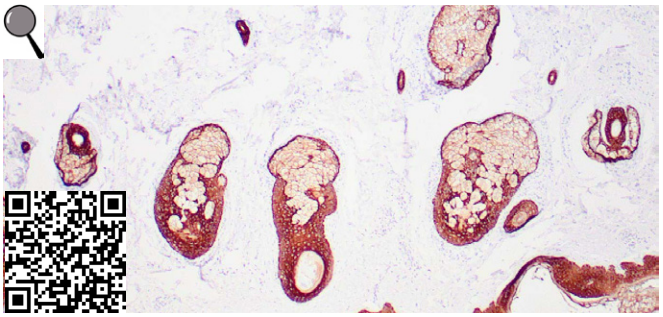
IHC: Human tonsil stained with ZM54

Squamous Cell Carcinoma vs Sebaceous Carcinoma

Cytokeratin, HMW (clone 34βE12) IVD

Cytokeratin 34βE12 antibody is a specific marker useful in differential identification of squamous carcinomas from adenocarcinomas and differential diagnosis of benign and malignant tumors of prostatic gland. In normal cells, it labels squamous, ductal and other complex epithelia. It reacts with benign small-acinar lesions of the prostate and does not react with hepatocytes, pancreatic acinar cells, proximal renal tubes or endometrial glands. In tumor cells this antibody ... (more)

Species: Mouse Monoclonal **Cat#:** Z2019

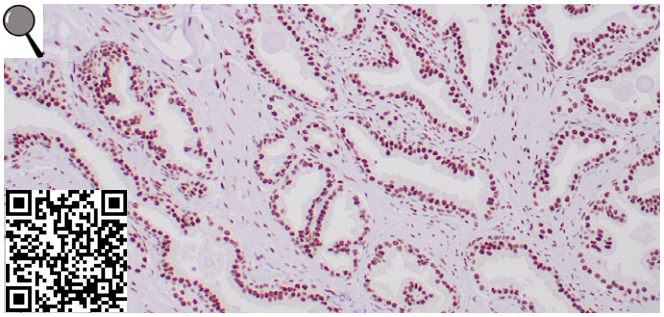


IHC: Human skin with carcinoma stained with 34βE12

Androgen Receptor (clone ZR334) IVD

Androgen receptor (AR) has been reported in a diverse range of human tumors including osteosarcoma, and in prostatic carcinoma androgen receptor expression may be of clinical relevance. Androgen Receptor is recommended for the detection of specific antigens of interest in normal and neoplastic tissues, as an adjunct to conventional histopathology using non-immunologic histochemical stains. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2640

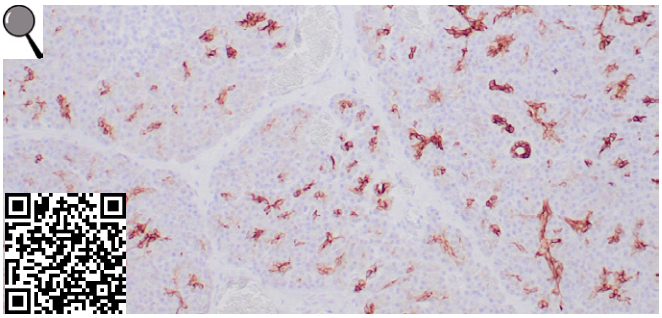


IHC: human prostate tissue stained with ZR334

Cytokeratin 7 (clone ZR428) IVD; RUO(EU)

Recognizes an intermediate filament protein (IFP) of 55kDa, which is identified as cytokeratin 7. Highly specific to cytokeratin 7; no cross-reaction with other IFPs. Cytokeratin 7 is found in most glandular and transitional epithelia but not in the stratified squamous epithelia. Keratin 7 is expressed in the epithelial cells of ovary, lung, and breast but not of colon, prostate, or gastrointestinal tract. Highly useful in distinguishing ovarian carcinomas (keratin 7+) from colon carcinomas (keratin 7-).

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2784

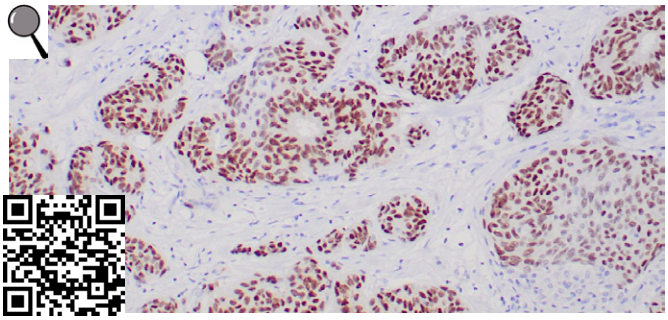


IHC: Human ovarian carcinoma stained with ZR428

ER (clone ZR147) IVD

Estrogen receptor (ER) is present in the nuclei of epithelial cells in normal breast and endometrial tissues and a subset of breast carcinomas. Immunohistochemical assays show that positive steroid hormone status has predicted favorable overall survival, independently of hormonal treatment. Secondly, ERα can be used as a tumor marker, preferentially in combination with an antibody to the progesterone receptor, e.g., in the classification of adenocarcinomas. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2691

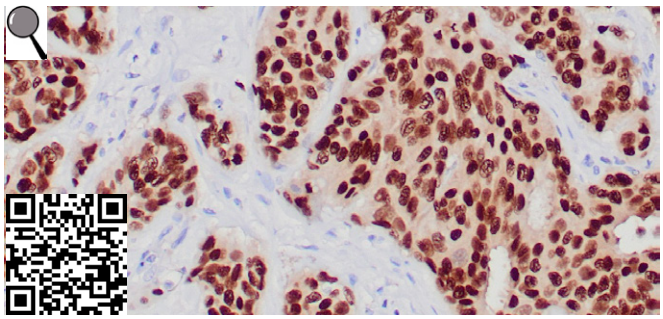


IHC: Human breast carcinoma stained with ZR147

PR (clone ZR290) IVD; RUO(EU)

Progesterone is one of the central regulators of female reproduction. Progesterone receptor (PR) is predominantly expressed in female sex steroid-responsive tissues such as the mammary gland, uterus, and ovary but is also found in other tissues such as endocrine cells of the Langerhans' islets. The estrogen receptor (ER) and PR status have been used for over 20 years to predict breast carcinoma responsiveness to endocrine therapy and as a prognostic indicator for early recurrence. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2728

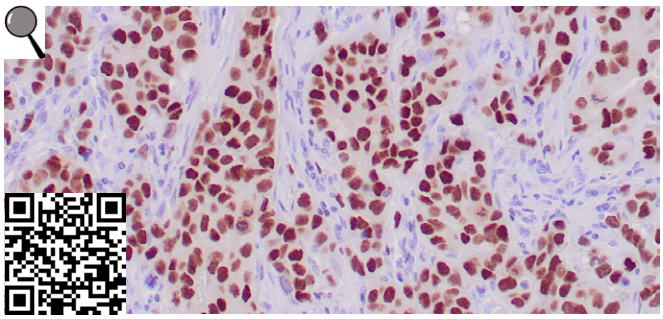


IHC: Human breast carcinoma stained with ZR290

GATA3 (clone ZR358) IVD

Among several other roles, GATA-3 is involved in luminal cell differentiation in the mammary gland and appears to control a set of genes involved in the differentiation and proliferation of breast cancer. GATA-3 expression is associated with the expression of estrogen receptor-alpha (ER) in breast cancer. GATA-3 is a novel marker for bladder cancer. The study showed that GATA-3 stained 67% of urothelial Carcinomas but none of the prostate or renal carcinomas. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2742



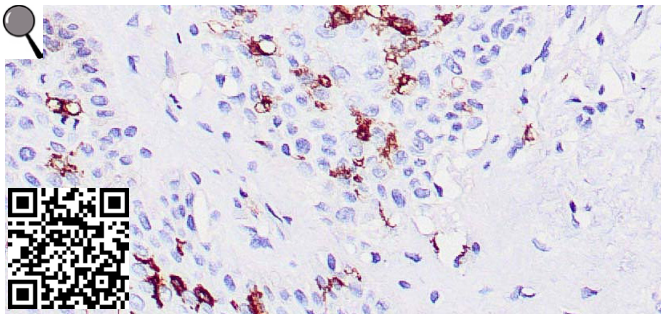
IHC: Breast ductal carcinoma stained with ZR358

CD1a (clone O10)

IVD

CD1 is expressed on cortical thymocytes, Langerhans cells, and dendritic cells. O10 detects cortical thymocytes, Langerhans cells in epidermis, dendritic cells of dermis and Langerhans cells of mucosa of tonsil. It may also detect small focal groups of lymphocytes outside the germinal centers of tonsil indicating a cross reaction with CD1b. This antibody is useful in the characterization of leukemias and lymphomas. (more)

Species: Mouse Monoclonal, recombinant **Cat#:** Z2096



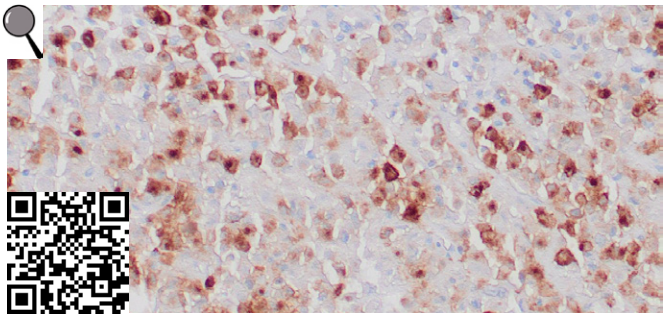
IHC: Human skin stained with O10

Langerin (ZR170)

IVD; RUO(EU)

Langerhans cells (LCs) are a subset of immature dendritic cells (DCs) Immunohistochemical evaluation of Langerin expression may have utility in substantiating a diagnosis of Langerhans cell histiocytosis and separating this disorder from other non-Langerhans cell histiocytic proliferations. Langerin protein expression has utility in differentiating Langerhans cell histiocytosis from other non-Langerhans cell histiocytic proliferations. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2700



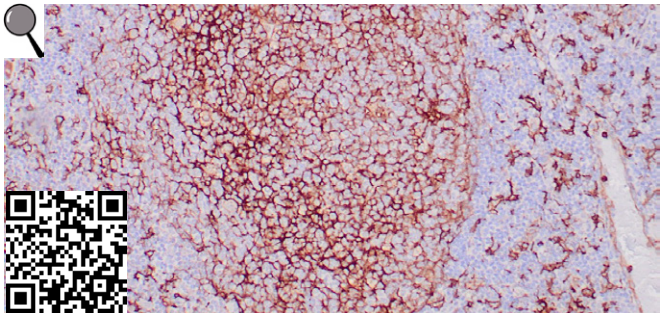
IHC: Human Langerhans cell histiocytosis stained with ZR170

CD14 (clone ZM104)

IVD

Recognizes 55kDa CD14 (lipopolysaccharide receptor). It is expressed on monocytes, macrophages and weakly on neu surfaces. CD14 is an important pattern recognition receptor that detects antigenic molecules on the surface of various microorganisms. CD14 mutations can prevent adequate inflammatory response to infection, leading to systemic infections. Macrophages with a protein complex of CD14, MD2 and TLR4 bind to LPS, causing macrophage activation and release of cytokines where overstimulation may cause toxic shock syndrome. (more)

Species: Monospecific Mouse Monoclonal, recombinant **Cat#:** Z2415



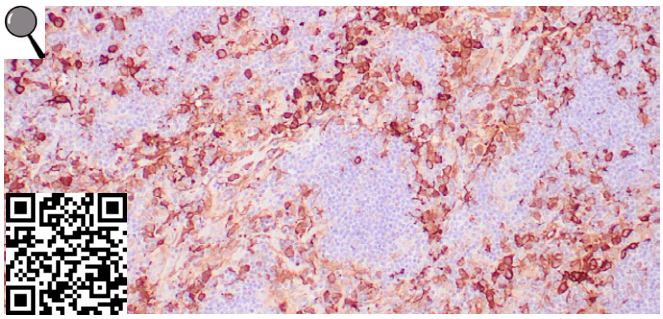
IHC: Human tonsil stained with ZM104

Fascin (clone ZM192)

IVD

Human fascin is expressed predominantly in dendritic cells. Lymphoid cells, myeloid cells and plasma cells are negative. However, Reed Sternberg cells in Hodgkin's lymphoma are positive for fascin staining. Epstein-Barr virus may induce expression of fascin in B cells. Clone 55K-2 can be used as an effective marker for Reed Sternberg cells.

Species: Mouse Monoclonal, recombinant **Cat#:** Z2446

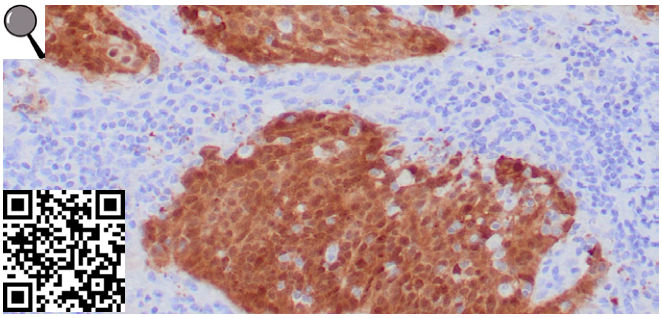


IHC: Human Hodgkin lymphoma stained with ZM192

p16^{INK4a} (clone ZR407) IVD; RUO(EU)

p16^{INK4a} is a specific inhibitor of cdk4/cdk6, and a tumor suppressor. Aberrant p16^{INK4a} gene is reported among melanomas, gliomas, esophageal, pancreatic, lung, and urinary bladder carcinomas, and some types of leukemia. Expression of p16^{INK4a} (p16 positive) is is highly correlated with human papilloma virus (HPV) infection in head and neck squamous cell carcinomas (HNSCC). p16^{INK4a} status is an important prognostic indicator in HNSCC and the p16^{INK4a} positive/HPV16. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2763

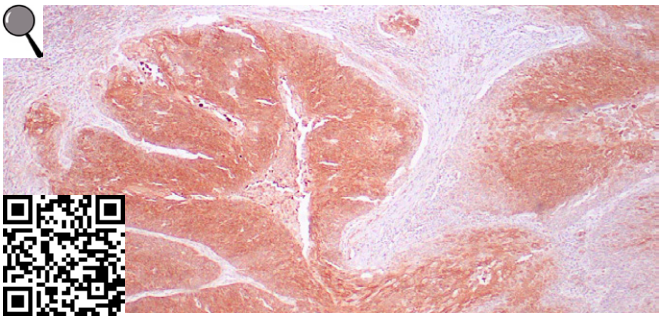


IHC: Invasive NSCC stained with ZR407

HPV (clone CAMVR-1 & C1P5) ASR/RUO

Human papilloma viruses (HPVs) can be classified as either high risk or low risk according to their association with cancer. Approximately 90% of cervical cancers contain HPV DNA of the high-risk types. Mutational analysis has shown that the E6 and E7 genes of the high-risk HPVs are necessary and sufficient for HPV transforming function. The antibody reacts very strongly with FFPE tissues containing HPV-16, -18 or -33. (more)

Species: Mouse Monoclonal, recombinant **Cat#:** Z2657

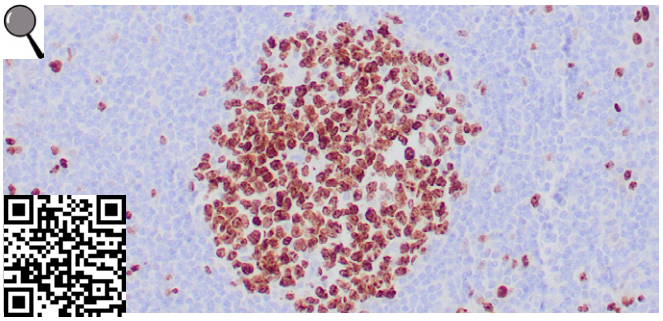


IHC: Cervical carcinoma stained with CAMVR-1+C1P5

Ki-67 (clone ZR433) IVD; RUO(EU)

Ki-67 antigen is a nuclear, non-histone protein that is present in all stages of the cell cycle except G0. This characteristic makes Ki-67 an excellent marker for proliferating cells and is commonly used as one of the prognostic factors in cancer studies. A correlation has been demonstrated between Ki-67 index and the histo-pathological grade of neoplasms. Assessment of Ki-67 expression in renal and ureter tumors shows a correlation between tumor proliferation and disease progression, thus making it possible to differentiate high-risk ... (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2789

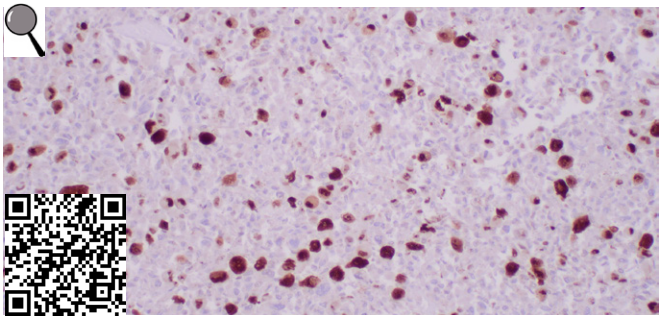


IHC: Human tonsil stained with ZR433

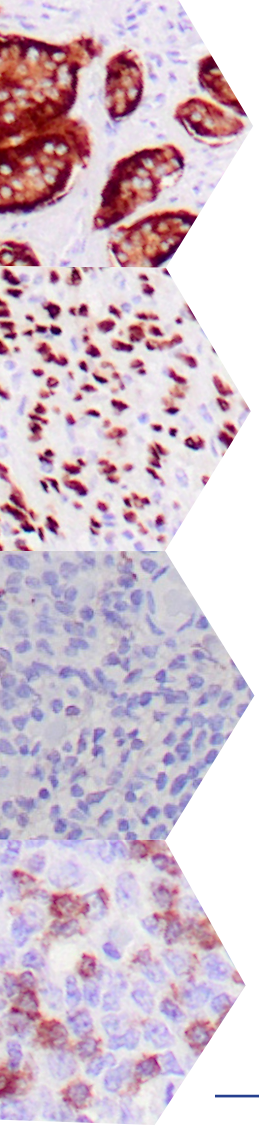
CMV (clone ZR456) ASR; RUO(EU)

Cytomegalovirus (CMV) is an opportunistic pathogen infecting the lungs, kidneys, gut, and other organs in situations where an individual is immunologically immature, such as the fetus and neonate. Infection also occurs in immunosuppressed patients. Clone ZR456 IHC is used to detect CMV infection tissues. CMV p65 antigen was also detected in the leukocytes of the peripheral blood and BALF during the early phase of CMV disease. (more)

Species: Rabbit Monoclonal, recombinant **Cat#:** Z2818



IHC: Human lung adenocarcinoma stained with ZR305



Section 9:

Detection Kits and Reagents

for FFPE Immunocytochemistry

Zeta Corporation offers polymer-based detection to reduce non-specific staining and increase the signal-to-noise ratio of the immunohistochemistry application (IHC). Many of the human organs contain endogenous biotin that might interfere with the actual staining for IHC and require additional blocking steps. With the advent of polymer detection technology, the biotin was completely removed from the detection chemistry and thus reducing the "background" noise. However, the size of the polymer molecule also introduced the steric hindrance. Therefore, Zeta made sure that our detection polymers are small in size to avoid steric hindrance and help increase the sensitivity and specificity of the detection process.

We've developed two different detection chemistries to fit every laboratory need. They are both universal detection chemistries, meaning they can detect both mouse and rabbit primary antibodies on human tissue specimens. To offer more sensitive detection for some of the low-expressing nuclear primary antibodies, Zeta introduced the Zeta MAX detection kits with an amplification step specifically targeting mouse primary antibodies.

Zeta Universal HRP/AP Polymer Detection

A primary antibody specific to an antigen on a formalin-fixed paraffin-embedded (FFPE) tissue section is detected by the Zeta Universal HRP Polymer Detection Kit. The antigen sites are then visualized with DAB chromogen/substrate. This kit is a one-step system using a direct method resulting in a polymer-secondary antibodies-HRP complex that universally detects mouse and rabbit primary antibodies. The resulting chromogenic reaction can be visualized by HRP-compatible chromogens using light microscopy.

Polymer-based detection reduces non-specific staining and increases the signal-to-noise ratio of immunohistochemistry. Many human organs contain endogenous biotin that might interfere with the actual staining for IHC and require additional blocking steps. With polymer detection technology, biotin is completely removed from the detection chemistry thereby reducing the "background" noise. Zeta ensured that our detection polymers are small in size to avoid steric hindrance and help increase the sensitivity and specificity of the detection process.

Zeta Max

The Zeta Max HRP Polymer Detection Kit uses an amplifying reagent (Zeta Max Amplifier) in conjunction with Zeta HRP Polymer (anti-mouse HRP/anti-rabbit HRP) to increase the signal intensity of primary antibodies. The mouse primary antibody specific to an antigen on the formalin-fixed paraffin-embedded (FFPE) tissue section is detected by the Zeta Max Amplifier. The Amplifier reagent is then detected by Zeta HRP Polymer. The Zeta HRP Polymer and the Zeta Max Amplifier reagents are ready-to-use and provided in convenient dropper bottles.

Zeta MAX utilizes unique technology to amplify mouse primary antibodies and particularly antibodies expressed in the nucleus. Zeta MAX reagent penetrates the tissues to tag the primary antibody sites to amplify and generate a multitude of sites for the micro-HRP polymer to bind.

Product details and ordering information, page 23 →

Zeta Universal Polymer Detection

Zeta Universal HRP Polymer Detection Kit (with DAB) **Cat#: ZD11**

Reagents: Anti-mouse HRP/anti-rabbit HRP (100 ml)
DAB Chromogen Concentrate (6.25 ml)
DAB Substrate Buffer (118.75 ml)

Zeta Universal HRP Polymer Detection (without DAB) **Cat#: ZD10**

Reagent: Anti-mouse HRP/anti-rabbit HRP (100 ml)

NEW

Zeta Universal AP Polymer Detection Kit **Cat#: ZD12**

Reagents: Anti-mouse AP/anti-rabbit HRP (100 ml)
AP Red Chromogen

NEW **Zeta AP Red Chromogen** (with buffer) **Cat#: ZD16**

Zeta MAX Polymer Detection

Zeta MAX Kit (with DAB) **Cat#: ZD15**

Reagents: Zeta HRP Polymer (anti-mouse HRP/ anti-rabbit HRP) (ready-to-use) (100 ml)
Zeta Max Amplifier reagent (100 ml)
DAB Chromogen Concentrate (6.25 ml)
DAB Substrate Buffer (118.75 ml)

Zeta MAX Kit (without DAB) **Cat#: ZD14**

Reagents: All of the above minus DAB dhromogen and substrate buffer

NEW

Zeta Dual AP/HRP Detection Kit **Cat#: ZD9**

The primary antibody specific to an antigen on formalin-fixed paraffin-embedded (FFPE) tissue section is detected by the Zeta Dual AP/HRP Polymer Detection Kit. The antigen sites are then visualized with AP/HRP chromogen/substrate. The reagent is ready-to-use in a convenient dropper bottle. The Zeta Universal HRP Polymer Detection Kit is a one-step system that uses a direct method, resulting in a polymer-secondary antibodies anti-Rabbit AP /anti-mouse HRP complex that universally detects primary mouse and rabbit antibodies. The resulting chromogenic reaction can be visualized by AP/HRP-compatible chromogens using light microscopy. The staining signals can be amplified with enhancers if necessary.

Detection Reagents and Tools

NEW **Zeta MAX Antibody Diluent** **Cat#: ZD20**
Ready-to-use (Tris Buffered) diluent for diluting primary antibodies and for use as a negative control.

NEW **Zeta MAX Block** **Cat#: ZD7**
For serum-free blocking of non-specific antibody binding in IHC. More effective at reducing non-specific background staining than serum.

NEW **Zeta Peroxide Block** **Cat#: ZD18**
Developed for use in immunolabeling techniques to reduce non-specific background staining due to endogenous peroxidase.

Zeta Antibody Diluent, 500 ml **Cat#: ZD19**
Antibody Diluent is provided as a ready-to-use (Tris Buffered) diluent for diluting primary antibodies and for use as a negative control.

Zeta Citrate Plus HIER Solution (10X), 1L **Cat#: ZD2**
Citrate Plus (10X) HIER Solution is a unique citrate buffer designed to significantly enhance immunohistochemical staining.

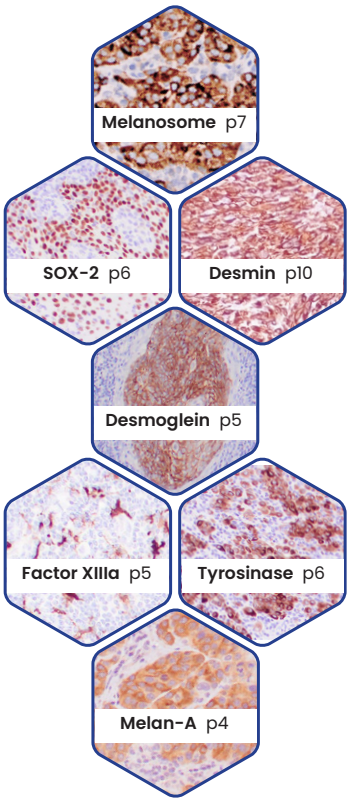
Zeta Tris-EDTA HIER Solution (10X), 500 ml **Cat#: ZD6**
Tris-EDTA HIER Solution (10x) pH 9.0) is a unique buffer designed to significantly enhance immunohistochemical staining.

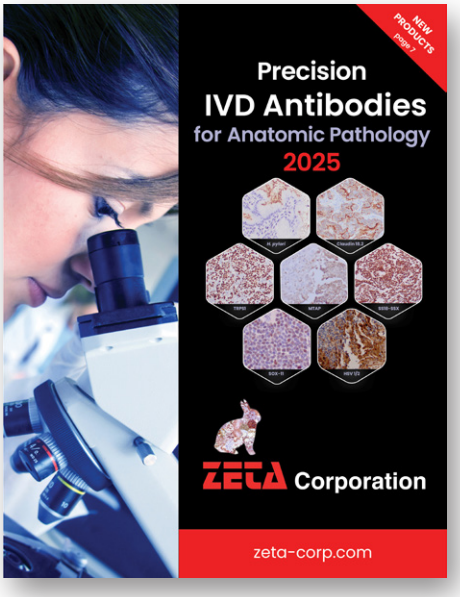
Zeta TBS plus Tween 20 pH 7.4, (20X) 500 ml **Cat#: ZD5**
Optimal formulation of pH stabilizers, salts and detergents for removal excess material from the tissue sample.

Zeta PBS plus Tween 20 pH 7.6 (20X), 1L **Cat#: ZD3**
Optimal formulation of pH stabilizers, salts and detergents designed to effectively remove excess material from microtiter plate wells.

Zeta PAP Pen **Cat#: ZD1**
PAP-Pen (Liquid Blocker) makes a water repellent barrier for manual IHC staining.

On the cover...

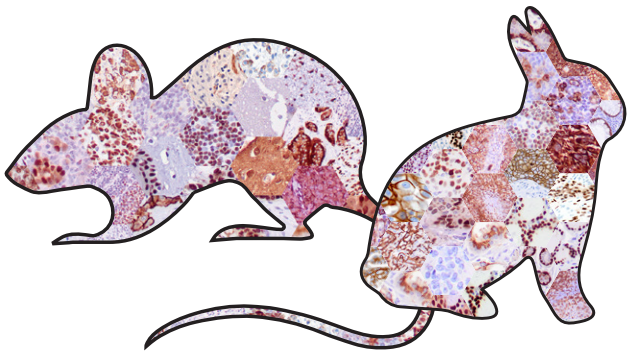




2025 Catalog...

Download:
zeta-corp.com/products-recombinant-ivd-antibodies

Printed Copy:
Please email your contact info
and mailing address to sales@zeta-corp.com



ZETA Corporation

Website: zeta-corp.com
Email: sales@zeta-corp.com
Phone US: (626) 355-2053
Fax US: (626) 836-9149

P.O. Box 282
Sierra Madre, CA
91025-0285 USA