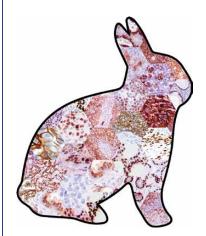




Target-Validated and Characterized CE/IVD Antibodies for Anatomic Pathology

### **NEW PRODUCTS - August 2023**

RAbMono™ (Rabbit Monoclonal) Markers



#### Superior specificity, low background and high affinity.

RAbMono rabbit monclonals designed and developed at Zeta are uniquely produced and target-validated for IHC on FFPE tissue sections. In contrast to typical mouse monoclonal technology, Zeta has achieved a unique and effective rabbit monoclonal production platform based on our unmatched expertise in the field.

Generally, Rabbit Monoclonals are characterized by 10 to 100 times higher affinity than Mouse Monoclonals. The rabbit's immune system is better equipped to generate a response to smaller antigens that are not detected in mice. As a result, Rabbit Monoclonals are becoming increasingly popular in immunohistochemical detection of tumor markers in humans.

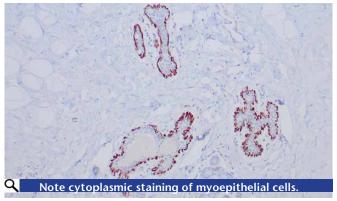
*Note:* All antibodies are offered in different format and size with the Suffix after the Catalog #s; "L", "S" & "T" for Concentrated antibodies in 1.0 ml, 0.5 ml & 0.1 ml sizes and Suffix "P" for Ready To Use (RTU) in 7 ml.

# Caldesmon (clone ZR413) IVD

Recognizes a protein of 150kDa (high molecular weight variant of Caldesmon). Two closely related variants of human caldesmon have been identified, which are different in their electrophoretic mobility and cellular distribution. The h-caldesmon variant (120'150kDa) is predominantly expressed in smooth muscle, whereas l-caldesmon (70'80kDa) is found in non-muscle tissue and cells. Neither of the two variants has been detected in skeletal muscle. This MAb recognizes only the 150kDa variant... (more)

Species: Rabbit Monoclonal Cat#: Z2769

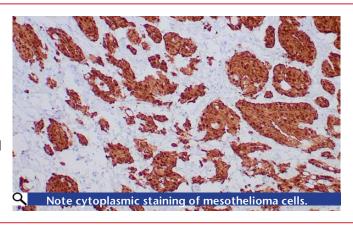
IHC: Normal human breast tissue stained with ZR413



### **Calretinin** (clone ZR415)

Recognizes a protein of about 29kDa, which is identified as Calretinin (also known as Calbindin 2). Calretinin is a vitamin D-dependent calcium-binding protein involved in calcium signaling. It is present in subsets of neurons throughout the brain and spinal cord, including sensory ganglia. Antibody to calretinin is useful in differentiating mesothelioma from adenocarcinomas of the lung. It also aids in differentiating adrenal cortical neoplasms from pheochromocytomas.

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2771</u> **IHC:** Human mesothelioma stained with ZR415

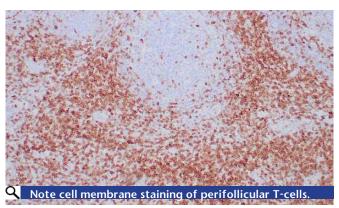


### **CD7** (clone ZR416)

#### **IVD**

Recognizes a protein of 40kDa, identified as CD7 (also known as gp40, Leu9). CD7 is a member of the immunoglobulin gene superfamily. Its N-terminal amino acids 1-107 are highly homologous to Ig kappa-L chains whereas the carboxyl-terminal region of the extracellular domain is proline-rich and has been postulated to form a stalk from which the Ig domain projects. CD7 is expressed on the majority of immature and mature T-lymphocytes, and and T cell leukemia. It is also found on natural killer cells, a... (more)

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2772</u> **IHC:** Human tonsil stained with ZR416



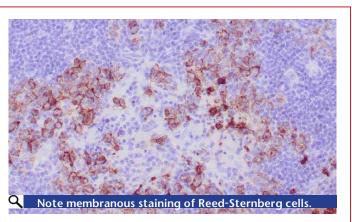
# **CD15** (clone ZR417)

#### **IVD**

3-fucosyl-N-acetyllactosamine (3-FAL) or CD15 or X-hapten plays a role in mediating phagocytosis, bactericidal activity, and chemotaxis. It is present on 95% of granulocytes including neutrophils and eosinophils and to a lesser degree on monocytes. CD15 is also expressed in Reed-Sternberg cells and some epithelial cells. CD15 antibody is very useful in the identification of Hodgkins disease. CD15 is occasionally expressed in large cell lymphomas of both B and T phenotypes which have a distinct histological appearance.

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2773</u>

IHC: Human Hodgkin's lymphoma stained with ZR417

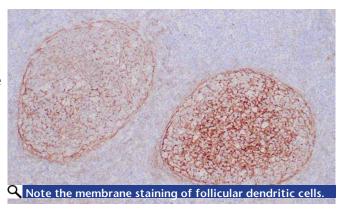


### **CD21** (clone ZR419)

#### **IVD**

Recognizes a protein of 140kDa, which is identified as the complement receptor 2 (CR2) / CD21. This protein is expressed strongly on mature B cells, follicular dendritic cells and weakly on immature thymocytes and T lymphocytes. In B-cell ontogeny, CD21 appears after the pre-B-stage, is maintained during peripheral B-cell development and is lost upon terminal differentiation into plasma cells. CD21 expression is also gradually lost after stimulation of B cells in vitro. CD21 functions as receptor for C3d, C3dg and ... (more)

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2775</u> **IHC:** Human tonsil stained with ZR419



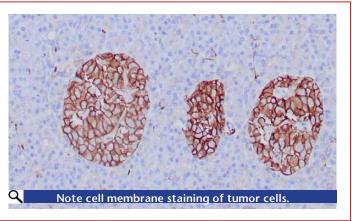
# **CD56** (clone ZR421)

#### IVD

This MAb reacts with an extracellular domain (close to the transmembrane) of CD56/NCAM. Three isoforms of neural cell adhesion molecule (NCAM) are produced by differential splicing of the RNA transcript from a single gene. The 135kDa isoform is the basic molecule, which is glycosylated or sialylated to produce the mature species. Anti-CD56 recognizes two proteins of the neural cell adhesion molecule, the basic molecule expressed on most neuroectodermally derived tissues and neoplasms (e.g. retinoblastoma, medulloblastomas, astrocytomas, neuroblastomas ... (more)

**Species:** Rabbit Monoclonal **Cat#: Z2777** 

IHC: Human neuroendocrine carcinoma stained with ZR421

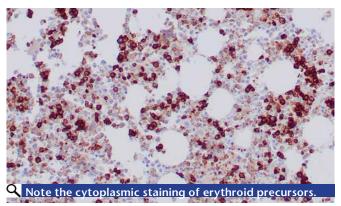


### **CD71** (clone ZR422)

#### **IVD**

Recognizes a ~90-95kDa protein identified as cell surface transferrin receptor (CD71), a disulfide-bonded homodimeric glycoprotein of 180-190kDa (Workshop IV). This MAb is highly specific to CD71 and shows no cross-reaction with other related proteins. Ligand for transferrin receptor is the serum iron transport protein, transferrin. This receptor is broadly distributed in carcinomas, sarcomas, leukemias, and lymphomas. CD71/Transferrin receptor has been reported to be associated with cell proliferation... (more)

**Species:** Rabbit Monoclonal **Cat#:** <u>72778</u> **IHC:** Bone marrow stained stained with ZR422



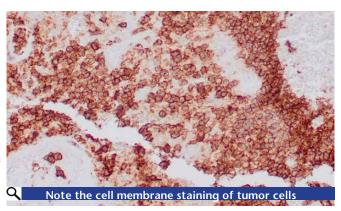
### **CD99** (clone ZR423)

#### **IVD**

Recognizes a sialoglycoprotein of 27-32kDa, identified as CD99, or MIC2 gene product, or E2 antigen. MIC2 gene is located in the pseudo-autosomal region of the human X and Y chromosome. MIC2 gene encodes two distinct proteins, which are produced by alternative splicing of the CD99 gene transcript and are identified as bands of 30 and 32kDa (p30/32). Although its function is not fully understood, CD99 is implicated in various cellular processes including homotypic aggregation of T cells, upregulation... (more)

Species: Rabbit Monoclonal Cat#: Z2779

IHC: Human Ewing sarcoma stained stained with ZR423

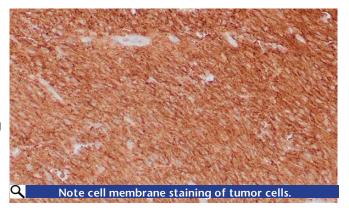


### **CD117** (clone ZR424)

#### IVD

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 .... (more)

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2780</u> **IHC:** Human GIST stained stained with ZR424

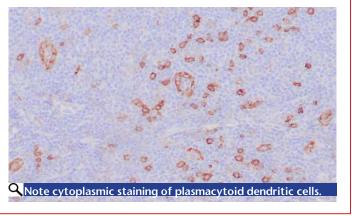


# **CD123** (clone ZR425)

#### IVD

CD123 is an interleukin 3 specific subunit of a heterodimeric cytokine receptor. The receptor is comprised of a ligand specific alpha subunit and a signal transducing beta subunit shared by the receptors for interleukin 3 (IL3), colony stimulating factor 2 (CSF2/GM-CSF), and interleukin 5 (IL5). The binding of this protein to IL3 depends on the beta subunit. The beta subunit is activated by the ligand binding, and is required for the biological activities of IL3. This gene and the gene encoding the colony stimulating... (more)

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2781</u> **IHC:** Human tonsil stained with ZR425



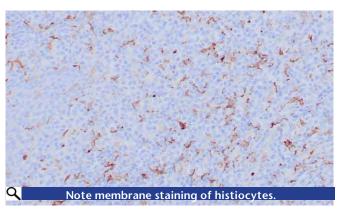
# **CD163** (clone ZR426)

#### IVD

This MAb recognizes a protein of 140kDa, identified as CD163. It has been identified as an acute phase-regulated transmembrane protein whose function is to mediate the endocytosis of haptoglobin-hemoglobin complexes. This receptor is expressed on the surface of monocytes with low expression and on tissue macrophages, histiocytes with high expression. Staining with anti-CD163 has been helpful to distinguish synovial macrophages from synovial intimal fibroblasts in rheumatoid arthritis, where its... (more)

Species: Rabbit Monoclonal Cat#: Z2782

IHC: Human lymph node stained stained with ZR426

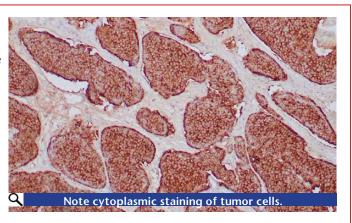


# Chromogranin A (clone ZR427) IVD

Chromogranin A is present in neuroendocrine cells throughout the body, including the neuroendocrine cells of the large and small intestine, adrenal medulla and pancreatic islets. It is an excellent marker for carcinoid tumors, pheochromocytomas, paragangliomas, and other neuroendocrine tumors. Co-expression of chromogranin A and neuron specific enolase (NSE) is common in neuroendocrine neoplasms. Reportedly, co-expression of certain keratins and chromogranin indicates neuroendocrine... (more)

Species: Rabbit Monoclonal Cat#: Z2783

IHC: Human neuroendocrine tumor stained with ZR427

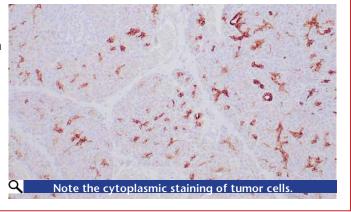


### Cytokeratin 7 (clone ZR428) IVD

Recognizes an intermediate filament protein (IFP) of 55kDa, which is identified as cytokeratin 7. This MAb is highly specific to cytokeratin 7 and shows no cross-reaction with other IFPs. Cytokeratin 7 is a basic cytokeratin, which 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. This MAb is highly useful in distinguishing ovarian carcinomas (keratin 7+) from colon carcinomas (keratin 7-).

Species: Rabbit Monoclonal Cat#: Z2784

IHC: Human ovarian carcinoma stained with ZR428

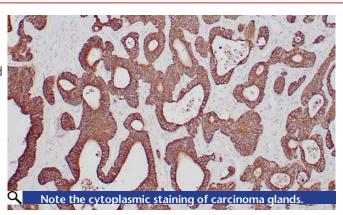


# Cytokeratin 20 (clone ZR429) IVD

This MAb recognizes an intermediate filament protein of 46kDa, identified as cytokeratin 20 (CK20). CK20 is abundantly expressed in goblet cells and enterocytes of the gastrointestinal tract. It is a useful marker of pancreatic and colorectal cancer. CK20 is expressed under normal, hyperplastic and neoplastic conditions. It has been detected in adenocarcinomas of the colon, stomach and biliary tract. Breast carcinomas are generally non-reactive.

**Species:** Rabbit Monoclonal **Cat#:** <u>**Z2785**</u>

IHC: Human colon carcinoma stained with ZR429

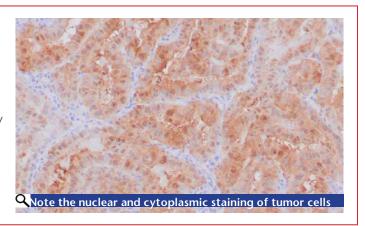


### Galectin-3 (clone ZR430) IVD

Galectin-3 is a member of the beta-galactosidase-binding lectin family. It is associated with cell growth, adhesion, inflammation, mRNA processing, and apoptosis. Aberrant expression of Galectin-3 is related to malignant transformation and metastasis in carcinomas of the breast, colon and thyroid. Galectin-3 reactivity can be seen in the nucleus of neutrophils, vascular endothelium, carcinomas of the colon, breast, and thyroid. Galectin-3 may be useful in the differentiation of benign and... (more).

Species: Rabbit Monoclonal Cat#: **Z2786** 

IHC: Human thyroid papillary carcinoma stained with ZR430

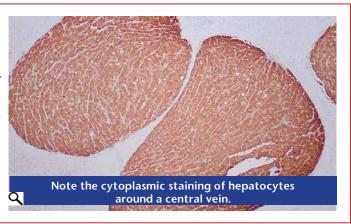


### Glutamine synthetase (clone ZR431) IVD

Glutamine synthetase (Gl Syn) forms a homo-octamer that serves as a catalyst for the amination of glutamic acid to form glutamine. This enzyme is a marker for astrocytes, which serve as the primary site of conversion of glutamic acid to glutamine in the brain. Induction of glutamine synthetase is seen upon astrocyte cell contact with neurons. Elevated expression of glutamine synthetase in glial cells has been shown to protect neurons from degeneration due to excess glutamate. Glutamine synthetase is ... (more).

**Species:** Rabbit Monoclonal **Cat#**: <u>Z2787</u>

IHC: Human liver stained with ZR431

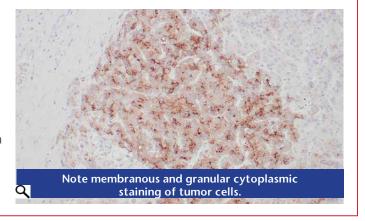


### Glypican 3 (clone ZR405) IVD

Glypican-3 (GPC3) is a glycosylphospatidyl inositol-anchored membrane protein, which may also be found in a secreted form. Anti-GPC3 has been identified as a useful tumor marker for the diagnosis of hepatocellular carcinoma (HCC), hepatoblastoma, melanoma, testicular germ cell tumors, and Wilms tumor. In patients with HCC, GPC3 is overexpressed in neoplastic liver tissue and elevated in serum, but is undetectable in normal liver, benign liver, and the serum of healthy donors. (more).

Species: Rabbit Monoclonal Cat#: <u>Z2761</u>

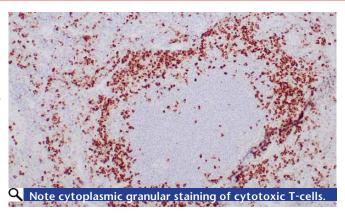
IHC: Human hepatocellular carcinoma stained with ZR405



# **Granzyme B** (clone ZR432) IVD

Granzyme B is a member of the granule serine protease family stored specifically in NK cells or cytotoxic T cells. Cytolytic T lymphocytes (CTL) and natural killer (NK) cells share the ability to recognize, bind, and lyse specific target cells. They are thought to protect their host by lysing cells bearing on their surface 'nonself' antigens, usually peptides or proteins resulting from infection by intracellular pathogens. Granzyme B is crucial for the rapid induction of target cell apoptosis by CTLs in the ... (more).

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2788</u> **IHC:** Human tonsil stained with ZR432

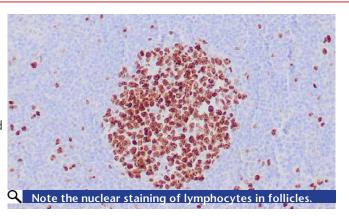


### **Ki-67** (clone ZR433)

#### IVD

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 patients. Ki-67 expression may also prove to ... (more).

**Species:** Rabbit Monoclonal **Cat#: Z2789** IHC: Human tonsil stained with ZR433

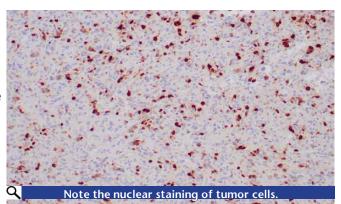


### MGMT (clone ZR434)

IVD

Cancer chemotherapeutic alkylating agents (e.g. BCNU,) act by inducing formation of lethal cross-links at the O6-alkylguanine position in DNA. MGMT transfers alkyl adducts from the O6-position of guanine in DNA (prior to cross-link formation) to a cysteine residue in its own sequence, thereby restoring DNA to its intact state. This transfer inactivates the MGMT enzyme and is irreversible; hence the levelof MGMT in a cell is directlyproportional to the level of DNA-damage it can tolerate. (more).

Species: Rabbit Monoclonal Cat#: Z2790 IHC: Human colon carcinoma stained with ZR434



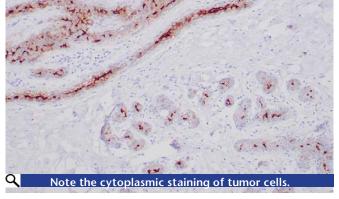
### **MUC-1** (clone ZR435)

IVD

Reacts with MUC1. The dominant epitope of this MAb has not yet been determined. MUC1 is a large cell surface mucin glycoprotein expressed by most glandular and ductal epithelial cells and some hematopoietic cell lineages. It is expressed on the most secretory epithelium, including the mammary gland and some hematopoietic cells. It is expressed abundantly in lactating mammary glands and over-expressed abundantly in >90% of breast carcinomas and metastases. Transgenic MUC1 has ... (more).

Species: Rabbit Monoclonal Cat#: Z2791

**IHC:** Human cholangiocarcinoma stained with ZR435

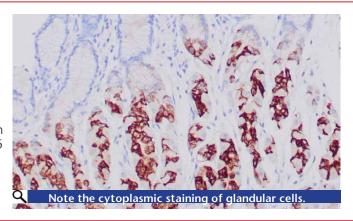


# **MUC-6** (clone ZR437)

IVD

The MUC6 gastric mucin is a secreted glycoprotein that plays an essential role in epithelial cyto-protection from acid, proteases, pathogenic microorganisms, and mechanical trauma in the gastrointestinal tract. Mucin 6 expression is highest in the stomach and gall bladder, with lower expression in the terminal ileum and right colon. In gastric cancer, Mucin 6 has an altered expression. In normal stomach, Mucin 6 is associated with Lewis type 2; Mucin 6 is also expressed in gastric metaplasia, duodenum and ... (more).

Species: Rabbit Monoclonal Cat#: Z2793 **IHC:** Human gastric mucosa stained with ZR437

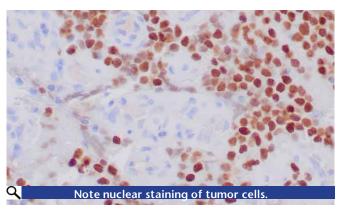


### **NKX2.2** (clone ZR438)

#### IVD

Expression of NKX2.2 has been found in neuroendocrine tumors of the gut, making it a potential marker for the study of gastrointestinal neuroendocrine tumors. More recently, NKX2.2 protein was identified as a target of EWS-FLI-1, the fusion protein specific to Ewing sarcoma, and was shown to be differentially upregulated in Ewing sarcoma on the basis of array-based gene expression analysis. It acts as a valuable marker for Ewing sarcoma, with a sensitivity of 93% and a specificity of 89%, and aids in the differential diagnosis of small round cell tumors. (more).

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2794</u> **IHC:** Human Ewing sarcoma stained with ZR438

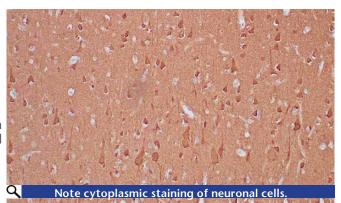


# NSE (clone ZR406)

#### **IVD**

Recognizes a protein of about 50kDa, which is identified as gamma-enolase. Three isoenzymes of enolases are identified, alpha, beta and gamma. Alpha-isoform is expressed in most tissues, whereas beta-form is expressed predominantly in muscle tissue whereas gamma-enolase is found only in nervous tissue. These isoforms exist as both homodimers and heterodimers, and they play a role in converting phosphoglyceric acid to phosphenolpyruvic acid in the glycolytic pathway. NSE-gamma is a useful ... (more).

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2762</u> **IHC:** Human cerebellum stained with ZR406

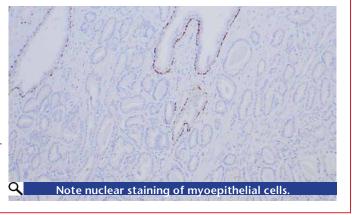


### **p63** (clone ZR439)

#### **IVD**

p63 is a homolog of the tumor suppressor p53. It is identified in basal cells in the epithelial layers of a variety of tissues, including epidermis, cervix, urothelium, breast and prostate. p63 was detected in nuclei of the basal epithelium in normal prostate glands; however, it was not expressed in malignant tumors of the prostate. As a result, p63 has been reported as a useful marker for differentiating benign from malignant lesions in the prostate, particularly when used in combination with markers of high molecular weight cytokeratins and the prostate-specific ... (more).

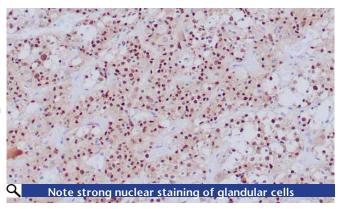
**Species:** Rabbit Monoclonal **Cat#:** <u>Z2795</u> **IHC:** Human breast stained with ZR439



### PIT-1/POU1F1 (clone ZR440) IVD

Transcriptional regulators play a critical role in development by mediating tissue- and cell-specific transcription. POU domain factors are transcriptional regulators characterized by a bipartite DNA binding domain consisting of two highly conserved regions, tethered by a variable linker of 14-26 amino acids. Pit-1, also known as growth hormone factor-1 (GHF-1), a member of the POU homeodomain family, is essential for the normal development of the anterior pituitary gland, where it is required to form ... (more).

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2796</u> **IHC:** Human pituitary stained with ZR440

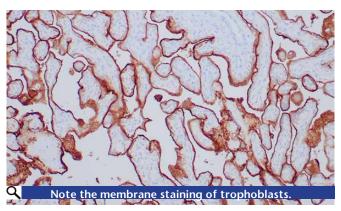


### PLAP (clone ZR441)

#### IVD

Reacts with a 70kDa membrane-bound isozyme (Regan and Nagao type) of Placental Alkaline Phosphatase (PLAP) occurring in the placenta during the 3rd trimester of gestation. It is highly specific for PLAP and shows no cross-reaction with other isozymes of alkaline phosphatase. Anti-PLAP reacts with germ cell tumors and can discriminate between these and other neoplasms. Somatic neoplasms e.g. breast, gastrointestinal, prostatic, and urinary cancers may also immunoreact with antibodies to PLAP. Anti-PLAP positivity in conjunction with anti-keratin negativity favors ... (more).

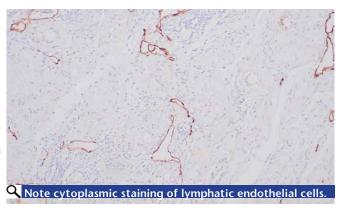
**Species:** Rabbit Monoclonal **Cat#:** <u>Z2797</u> **IHC:** Human placenta stained with ZR441



### Podoplanin (clone ZR442) IVD

Recognizes a muco-protein of 38-43kDa, which is identified as Podoplanin (PDPN). It is located in stromal cells of peripheral lymphoid tissue and thymic epithelial cells. As a regulator of the lymphatic endothelium, podoplanin probably plays a role in maintaining the unique shape of podocytes. It is selectively expressed in lymphatic endothelium as well as lymphangiomas, Kaposi sarcomas, and in a subset of angiosarcomas with probable lymphatic differentiation. Recent studies have also shown podoplanin to be a highly sensitive and relatively specific marker for... (more).

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2798</u> **IHC:** Human testicle stained with ZR442

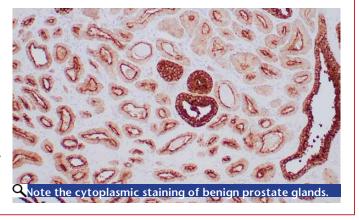


### **PSAP** (clone ZR443) IVD/RUO

Recognizes a protein of 52kDa, identified as prostate specific acid phosphatase (PSAP). This enzyme catalyzes the conversion of orthophosphoric monoester to alcohol and orthophosphate. It is synthesized under androgen regulation and is secreted by the epithelial cells of the prostate gland. PSAP is found in non-neoplastic adult and fetal prostatic glands, primary and metastatic prostatic carcinomas. It shows no staining in granulocytes, osteoclasts, parietal cells of the stomach, liver cells, renal cell or breast carcinomas.

Species: Rabbit Monoclonal Cat#: <u>Z2799</u>

IHC: Human prostate stained with ZR443

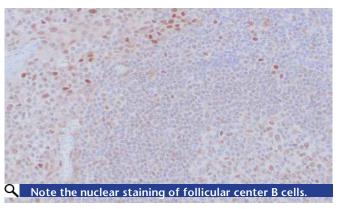


# **Rb** (clone ZR444)

#### **IVD**

Recognizes a 105kDa phosphoprotein, identified as retinoblastoma (Rb) gene product. It shows no cross reaction with p107 or p130. It reacts with the hyper-phosphorylated as well as the un (under) phosphorylated form of the Rb protein. Retinoblastoma gene product plays a key role in cell cycle control. It has been identified as a tumor suppressor gene whose loss of its function leads to tumor development. It is widely expressed in a variety of human tissues including breast, esophageal, squamous cell and ... (more).

**Species:** Rabbit Monoclonal **Cat#:** <u>Z2800</u> **IHC:** Human tonsil stained with ZR444

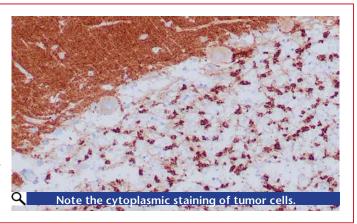


### Synaptophysin (clone ZR445) IVD

Recombinant rabbit monoclonal antibody recognizes a protein of 38kDa that is identified as synaptophysin. It is an N-glycosylated integral membrane protein found in neurons and endocrine cells. Identifies normal neuroendocrine cells and neuroendocrine neoplasms. Diffuse, finely granular, cytoplasmic staining is observed, which probably correlates with the distribution of the antigen within neurosecretory vesicles. Synaptophysin is an independent, broad-range marker of neural and neuroendocrine differentiation.

Species: Rabbit Monoclonal Cat#: <u>Z2801</u>

IHC: Human neuroendocrine tumor stained with ZR445



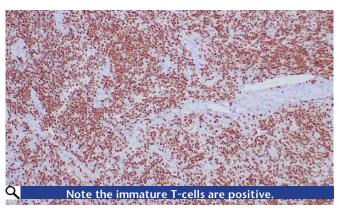
### TdT (clone ZR446)

IVD

Terminal deoxynucleotidyl transferase (TdT) is an unusual deoxynucleotide polymerizing enzyme with a molecular weight of about 58 kDa found normally only in B- and T-cell lymphoblasts/prelymphocytes. TdT generates antigen receptor diversity by synthesizing non-germ line elements (N-regions) at the junctions of rearranged lg heavy chain and T cell receptor gene segments. Rare TdT-positive cells are regularly detected in the thymus and bone marrow. Typically, TdT expression in the thymus is very ... (more).

**Species:** Rabbit Monoclonal **Cat#: Z2802** 

IHC: Human type B1 thymoma stained with ZR446





# **ZETA** Corporation

Website: <u>zeta-corp.com</u>

Email: info@zeta-corp.com

Phone US: (626) 355-2053 Fax US: (626) 836-9149

P.O. Box 282

Sierra Madre, CA 91025-0285 USA

CE/IVD