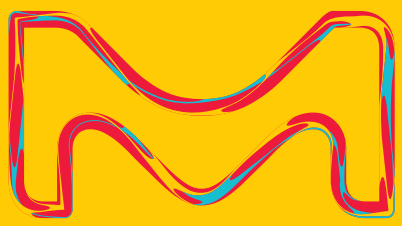
Merck

Cell Marque™ Tissue Diagnostics

IMMUNOHISTOCHEMISTRY

Reference Guide Supplement



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Life Science business
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Darmstadt, Germany.

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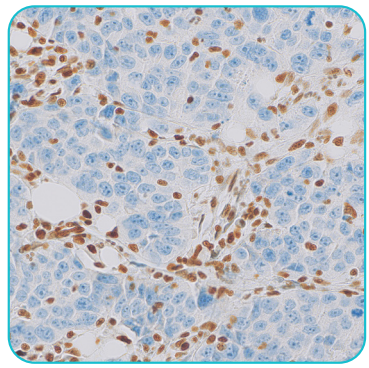
Lab & Production Materials

Cell Marque™ primary antibodies are developed and manufactured under a robust quality system to ensure reliable, reproducible results to support your clinical pathology needs.

ARID1A (EP303)

Rabbit Monoclonal Primary Antibody

ARID1A is a subunit of the switching defective/sucrose non-fermenting (SWI/SNF) chromatin remodeling complex and is involved in recruiting mismatch repair (MMR) proteins during DNA replication. ARID1A gene mutations often lead to a loss of expression of the ARID1A protein, which can result in increased mutagenesis.[1] Loss of ARID1A expression may be observed in colorectal and endometrioid carcinomas, as well as ovarian serous carcinomas in lower frequencies.[1-5] In colorectal carcinomas, loss of ARID1A protein expression is linked to somatic hypermethylation and the associated phenotypes which are characterized by MMR-deficiency, BRAF V600E mutation, older age, medullary morphology, and poor differentiation.[1]



Above: ARID1A - Loss of expression in colorectal cancer

Control: Colorectal carcinoma (Nuclear); Endometrial carcinoma: endometrioid type (Nuclear)

Ordering Information:

Cat. No.	Description
407R-14	0.1 mL concentrate
407R-15	0.5 mL concentrate
407R-16	1.0 mL concentrate
407R-17	1.0 mL predilute ready-to-use
407R-18	7.0 mL predilute ready-to use

Regulatory Designation: IVD

Associated Specialties:
Anatomic pathology, Gastrointestinal (GI) pathology

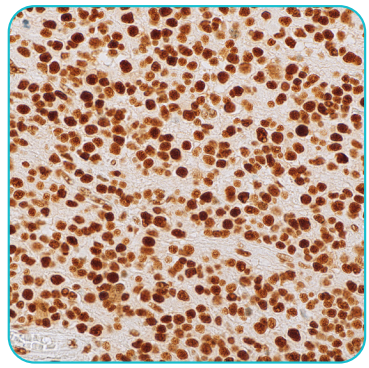
References and Additional Product Information:

CELL MARQUE RabMAb® Technology from Abcam

ATRX

Rabbit Polyclonal Antibody

Diffuse gliomas are classified based on histological and molecular features to achieve an integrated diagnosis. Molecular diagnostic markers include IDH mutation, 1p/19q co-deletion, and TP53 mutation. ATRX is a chromatin remodeling protein and its mutation status may be used as a molecular diagnostic marker within the diffuse glioma classification algorithm. Anti-ATRX is used to identify mutant ATRX by a loss of ATRX expression in neoplastic cells when compared with internal positive controls (endothelial cells, glia, and neurons). Grade II/III astrocytoma classification includes IDH mutant, ATRX mutant, and 1p/19q retention, while grade II/III oligodendroglioma includes IDH mutant, ATRX wildtype, and 1p/19q co-deletion; p53 expression may also serve as an aid in diagnosis. ATRX mutation is frequently, but not always, mutually exclusive with 1p/19q co-deletion.[1-6]



Above: ATRX on oligodendroglioma

Control: Astrocytoma (Nuclear); Glioblastoma (Nuclear); Brain (Nuclear); Oligodendroglioma (Nuclear)

Ordering Information:

Cat. No.	Description
485A-14	0.1 mL concentrate
485A-15	0.5 mL concentrate
485A-16	1.0 mL concentrate
485A-17	1.0 mL predilute ready-to-use
485A-18	7.0 mL predilute ready-to-use

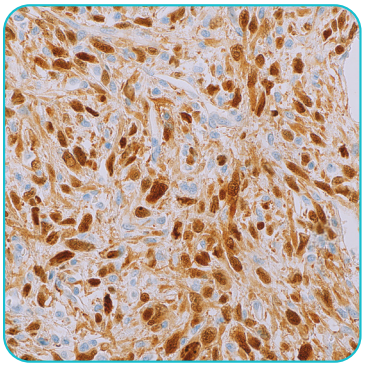
Regulatory Designation: IVD

Associated Specialties:
Neuropathology

References and Additional Product Information:

CDK4 (DCS-31)

Mouse Monoclonal Antibody



Well-differentiated liposarcoma is a malignant, non-metastasizing tumor that can present with similar histological characteristics as benign lipoma lesions and has a higher recurrence rate. The CDK4 protein is frequently overexpressed in well-differentiated liposarcoma due to gene amplification of the 12q13-15 chromosomal region that harbors the CDK4 gene, but amplification and subsequent overexpression is rarely observed in lipomas. Due to CDK4 protein expression differences between these lesions, anti-CDK4 antibody can be used in an immunohistochemistry panel as an aid in the differential diagnosis between well-differentiated liposarcoma and lipoma.[1,2,3]

Above: CDK4 on dedifferentiated liposarcoma

Control: Well-differentiated liposarcoma (Nuclear); Dedifferentiated liposarcoma (Nuclear)

Associated Specialties:
Soft tissue pathology

References and Additional Product Information:

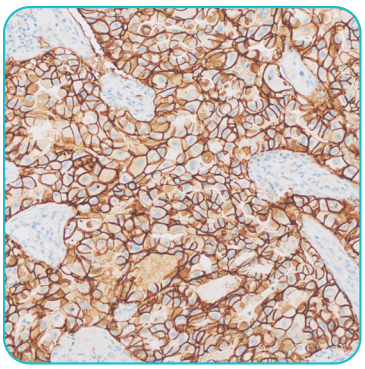
Ordering Information:

Cat. No.	Description
478M-94	0.1 mL concentrate
478M-95	0.5 mL concentrate
478M-96	1.0 mL concentrate
478M-97	1.0 mL predilute ready-to-use
478M-98	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Claudin-4 (EP417)

Rabbit Monoclonal Primary Antibody



The claudin-family proteins are a group of tight-junction membranous proteins responsible for paracellular molecular flow between adjacent cells of the epithelium.[1] In normal kidney, claudin-4 plays a key role in paracellular ion reabsorption.[2] Claudin-4 is expressed in most epithelial cells yet is absent in mesothelial cells, making it of great use in characterizing epithelial malignincies.[3] Immunohistochemical identification of this antigen may help identify poorly differentiated lung adenocarcinoma from lesions of mesothelial origin.[4] Likewise, identification of claudin-4 expression by IHC may be useful in characterizing breast and endometrial lesions.[5,6]

Above: Claudin-4 on lung adenocarcinoma

Control: Lung adenocarcinoma (Membranous)

Associated Specialties:
Cytopathology,
Pulmonary pathology

References and Additional Product Information:

CELL MARQUE
RabMAb
Technology from Abcam

Ordering Information:

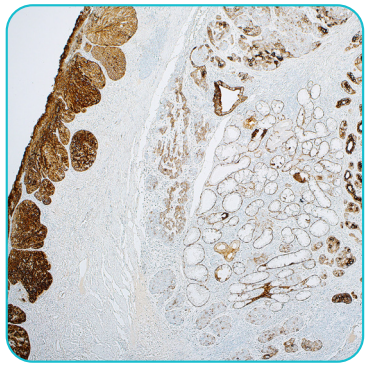
Cat. No.	Description
468R-14	0.1 mL concentrate
468R-15	0.5 mL concentrate
468R-16	1.0 mL concentrate
468R-17	1.0 mL predilute ready-to-use
468R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Cytokeratin 5 & 6 (EP24 & EP67)

Rabbit Monoclonal Primary Antibody

Twenty identified cytokeratins make up a complex family of intermediate filaments.[1] Cytokeratin 5 (58kDa) & cytokeratin 6 (56kDa) are type II high molecular weight keratins that are expressed in a broad range of normal tissues including breast, prostate, mesothelium, skin and esophagus.[1-3] Anti-Cytokeratin 5 & 6 is a useful immunohistochemical marker in the identification of mesothelioma and lung squamous cell carcinoma.[1]



Ordering Information:

Cat. No.	Description
356R-14	0.1 mL concentrate
356R-15	0.5 mL concentrate
356R-16	1.0 mL concentrate
356R-17	1.0 mL predilute ready-to-use
356R-18	7.0 mL predilute ready-to use

Regulatory Designation: IVD

Associated Specialties:
Anatomic pathology, Cytopathology

References and Additional Product Information:

CELL MARQUE RabMAb® Technology from Abcam

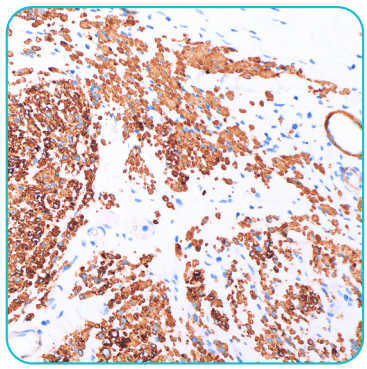
Above: Cytokeratin 5 & 6 on esophageal squamous cell carcinoma

Control: Mesothelioma (Cytoplasmic); Prostate (Cytoplasmic); Lung squamous cell carcinoma (Cytoplasmic)

h-Caldesmon (hHCD)

Mouse Monoclonal Antibody

Caldesmon is a protein that facilitates the regulation of cellular contraction through complexing with calmodulin, tropomyosin, and actin. Its high molecular weight isoform (h-caldesmon) has been identified to have restricted expression in visceral and vascular smooth muscle cells. In particular, strong expression of h-caldesmon has been observed in non-neoplastic uterine myometrium while being entirely absent in the endometrial layer.[1] In spindle cell tumor pathology, overlapping immunohistochemical staining profiles between smooth muscle cells and myofibroblastic cells has not allowed for reliable identification of true smooth muscle tumors. Immunohistochemical detection of h-caldesmon has been demonstrated to aid in the distinguishing smooth muscle tumors, such as leiomyoma and leiomyosarcoma from myofibroblastic lesions, such as inflammatory myofibroblastic tumors and fibromatoses.[2]



Ordering Information:

Cat. No.	Description
451M-14	0.1 mL concentrate
451M-15	0.5 mL concentrate
451M-16	1.0 mL concentrate
451M-17	1.0 mL predilute ready-to-use
451M-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Associated Specialties:
Anatomic pathology, Soft tissue pathology

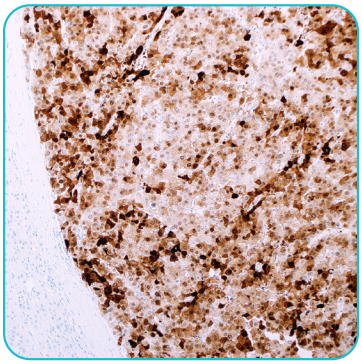
References and Additional Product Information:

Above: h-Caldesmon on leiomyosarcoma

Control: Stomach (Cytoplasmic); Smooth Muscle (Cytoplasmic); Bladder (Cytoplasmic); Colon (Cytoplasmic); Leiomyoma (Cytoplasmic)

Heat Shock Protein 70 (EP377)

Rabbit Monoclonal Primary Antibody



The Heat Shock Protein 70 family of highly conserved chaperone proteins increase in expression upon exposure to stress factors such as temperature shock, hypoxia, oxidative stress, and pH change.[1] This promotes cell survival by repairing misfolded proteins and preventing protein aggregates, among other functions.[1] Likewise, tumor cells can use this mechanism to confer a survival advantage as demonstrated in Heat Shock Protein 70 overexpression in hepatocellular carcinoma.[1-5]

Above: Heat Shock Protein 70 on hepatocellular carcinoma (HCC)

Control: Hepatocellular carcinoma (Cytoplasmic, Nuclear)

Associated Specialties:
Gastrointestinal (GI) pathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

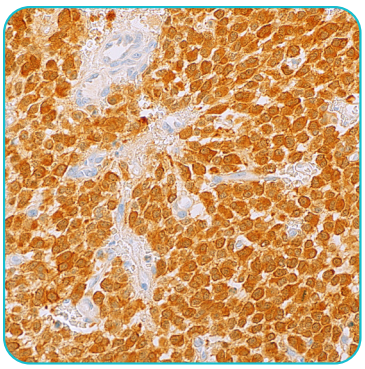
Ordering Information:

Cat. No.	Description
460R-14	0.1 mL concentrate
460R-15	0.5 mL concentrate
460R-16	1.0 mL concentrate
460R-17	1.0 mL predilute ready-to-use
460R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

IDH1 R132H (MRQ-67)

Rabbit Monoclonal Antibody



Isocitrate dehydrogenase1 (IDH1) functions as an enzyme in the Krebs (citric acid) cycle and is biologically active in the cytoplasmic and peroxisomal compartments under normal conditions. The occurrence of heterozygous missense mutations at an arginine residue at codon 132 (R132) within the coding region for the substrate binding site of IDH1 has been described to promote oncogenesis in several malignancies.[1] Of the identified mutant variants, a histidine substitution (R132H) is one of the more frequently observed point mutations in certain tumor groups of gliomas.[2] Mutations involving IDH1 have been implicated as early events during gliomagenesis and IDH1 mutation status was incorporated into the 2016 WHO Classification of Tumors of the Central Nervous System as a new parameter for sub-classifying diffuse astrocytic and oligodendrogliomal tumors.[3,4] Immunohistochemical identification of IDH1 R132H immunoreactivity can be used as a tool in screening tumors that may be harboring this mutation, such as low grade diffuse and anaplastic astrocytomas, oligodendrogliomas, and secondary glioblastomas.

Above: IDH1 R132H on astrocytoma

Control: Astrocytoma (Cytoplasmic); Oligodendroglioma (Cytoplasmic); Glioblastoma (Cytoplasmic); Acute myeloid leukemia (Cytoplasmic)

Associated Specialties:
Neuropathology, Anatomic pathology, Hematopathology

References and Additional Product Information:

Ordering Information:

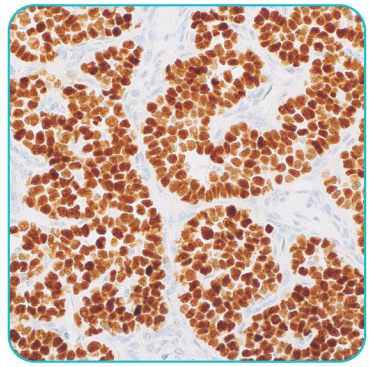
Cat. No.	Description
456R-34	0.1 mL concentrate
456R-35	0.5 mL concentrate
456R-36	1.0 mL concentrate
456R-37	1.0 mL predilute ready-to-use
456R-38	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

INSM1 (MRQ-70)

Rabbit Monoclonal Antibody

Insulinoma-associated protein 1 (INSM1) is a transcriptional factor with a zinc finger DNA-binding domain that is involved in neuroendocrine cell differentiation as a transcriptional repressor.[1] INSM1 expression has been observed during embryonic development in the cerebellum, spinal cord, olfactory epithelium, pancreas, and gastrointestinal tract[2-4]; however, expression in healthy adult tissues is limited to neuroendocrine cells. INSM1 is over expressed in neuroendocrine neoplasms including carcinoids, small cell carcinomas, and neuroendocrine carcinomas. This helps in identification of neuroendocrine tumors and their distinction from other lesions, such as adenocarcinomas, which exhibit little to no INSM1 expression[5-6].



Above: INSM1 on carcinoid

Control: Pancreas (Nuclear)

Ordering Information:

Cat. No.	Description
475R-94	0.1 mL concentrate
475R-95	0.5 mL concentrate
475R-96	1.0 mL concentrate
475R-97	1.0 mL predilute ready-to-use
475R-98	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

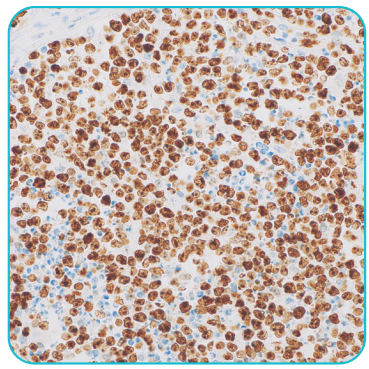
Associated Specialties:
Anatomic pathology

References and Additional Product Information:

Ki-67 (MRQ-64)

Rabbit Monoclonal Antibody

Ki-67 (MRQ-64) is an antibody designed to target Ki-67 antigen-a nuclear protein encoded by the MKI67 gene whose presence correlates with G1, S, G2, and the mitotic phases of the cell cycle.[1] Though its specific role is largely postulated and still yet to be determined, Ki-67's presence during cellular division makes it an excellent target for labeling rapidly growing malignancies.[2] Given that its presence correlates with cell proliferation, the immunohistochemical labeling of Ki-67 antigen may be useful in characterizing a lesion's growth fraction. It has been demonstrated that identifying this antigen by IHC is useful in characterizing lesions of the breast, lymphoid cells, astrocytes, and uterus.[3-9]



Above: Ki-67 on Burkitt's Lymphoma

Control: Tonsil (Nuclear); Breast duct carcinoma in situ (Nuclear); Burkitt lymphoma (Nuclear)

Ordering Information:

Cat. No.	Description
275R-34	0.1 mL concentrate
275R-35	0.5 mL concentrate
275R-36	1.0 mL concentrate
275R-37	1.0 mL predilute ready-to-use
275R-38	7.0 mL predilute ready-to-use
275R-30	25.0 mL predilute ready-to-use

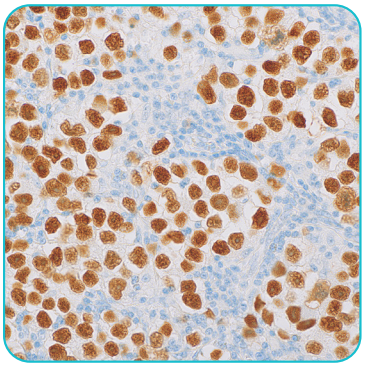
Regulatory Designation: IVD

Associated Specialties:
Breast/Gynecological pathology, Anatomic pathology

References and Additional Product Information:

MAGEC2 (EP405)

Rabbit Monoclonal Primary Antibody



Melanoma-associated antigen C2 (MAGEC2), encoded by the testis cancer gene CT10, belongs to a family of proteins that bind E3 RING ubiquitin ligases via a common MAGE homology domain.[1-3] The MAGE-RING complexes that are formed enhance the activity of the ubiquitin ligase binding partners. In vitro studies suggest that MAGEC2, which binds to TRIM28, is involved in tumorigenesis through the increased degradation of p53.[4] In germ cell tumors, aberrant expression of MAGEC2 is exhibited in seminomas, but is absent in yolk sac tumor and embryonal carcinoma.[5-7]

Above: MAGEC2 on seminoma

Control:
Seminoma (Nuclear)

Associated Specialties:
Genitourinary (GU) pathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

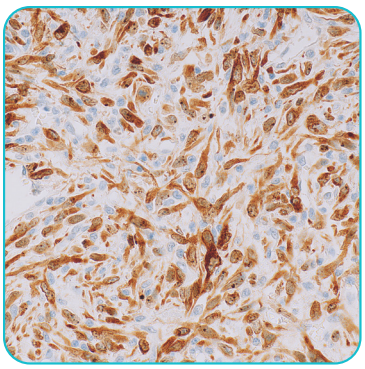
Ordering Information:

Cat. No.	Description
477R-14	0.1 mL concentrate
477R-15	0.5 mL concentrate
477R-16	1.0 mL concentrate
477R-17	1.0 mL predilute ready-to-use
477R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

MDM2 (IF2)

Mouse Monoclonal Antibody



Mouse double minute protein 2 (MDM2) is a gene encoded on the 12q13-14 chromosomal sequence.[1-5] It encodes for a 483 amino acid residue protein which binds to the amino-terminal transcription region of p53.[2,5] MDM2 has been shown to negatively regulate the tumor-suppressor activity of p53 by three mechanisms: blocking p53 transcription, binding to p53 causing it to be exported from the nucleus, and accelerating the destruction of p53.[1] MDM2 up-regulation has been shown in liposarcoma while being absent in lipoma.[2,4] Therefore, anti-MDM2 has been demonstrated to be a potentially useful tool in distinguishing well-differentiated liposarcoma (atypical lipomatous tumor) from lipoma, with the neoplastic cells positive in the former lesion and negative in lipoma.[2,4]

Above: MDM2 on dedifferentiated liposarcoma

Control: Well-differentiated liposarcoma (Nuclear); Dedifferentiated liposarcoma (Nuclear)

Associated Specialties:
Soft tissue pathology

References and Additional Product Information:

Ordering Information:

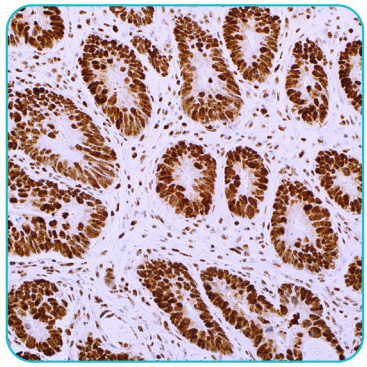
Cat. No.	Description
479M-94	0.1 mL concentrate
479M-95	0.5 mL concentrate
479M-96	1.0 mL concentrate
479M-97	1.0 mL predilute ready-to-use
479M-98	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

MLH1 (M1)

Mouse Monoclonal Antibody

MLH1 is a mismatch repair protein involved in recognition and repair of spontaneous errors that arise during cellular DNA replication. The inactivation of MLH1 results in impaired DNA mismatch repair caused by deficient MLH1 expression. This can be observed in several malignancies, not the least of which are colorectal carcinoma and endometrial carcinoma. Anti-MLH1 is useful in the identification of the MLH1 protein in normal and neoplastic tissues and in identifying loss of MLH1 expression in tumors with a dysfunctional DNA mismatch repair system.[1-3]



Above: MLH1 on colorectal carcinoma

Control: Colorectal carcinoma (Nuclear); Colon (Nuclear); Endometrial carcinoma (Nuclear)

Ordering Information:

Cat. No.	Description
285M-24	0.1 mL concentrate
285M-25	0.5 mL concentrate
285M-26	1.0 mL concentrate
285M-27	1.0 mL predilute ready-to-use
285M-28	7.0 mL predilute ready-to-use
285M-20	25.0 mL predilute ready-to-use

Regulatory Designation: IVD

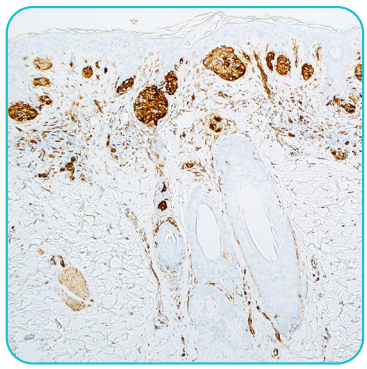
Associated Specialties:
Gastrointestinal (GI) pathology

References and Additional Product Information:

Nestin (EP287)

Rabbit Monoclonal Primary Antibody

Nestin is a class VI intermediate filament (IF) protein. Nestin is expressed in neural progenitor cells during development of the central nervous system and peripheral nervous system. Cytoplasmic anti-nestin staining mostly occurs under pathological conditions. It has been reported that nestin expression is significantly increased in melanoma and correlated with more advanced stages of the disease.[1] Nestin immunoreactivity is also reported in melanoma cells of HMB-45-negative amelanotic and melanotic, non-desmoplastic melanoma.[2] Nestin is also useful in subclassifying breast carcinoma.[3] Only cytoplasmic staining is considered positive, whereas any nuclear staining is considered as background artifact.



Above: Nestin on melanoma

Control: Tonsil (Cytoplasmic)

Ordering Information:

Cat. No.	Description
388R-14	0.1 mL concentrate
388R-15	0.5 mL concentrate
388R-16	1 mL concentrate
388R-17	1 mL predilute
388R-18	7 mL predilute

Regulatory Designation: IVD

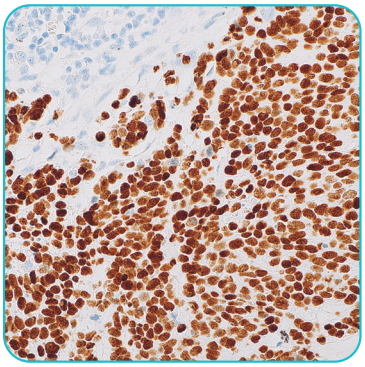
Associated Specialties:
Dermatopathology,
Neuropathology,
Anatomic pathology

References and Additional Product Information:

CELL MARQUE
RabMAb®
Technology from Abcam

p40 (ZR8)

Rabbit Monoclonal Antibody



p40 is an isoform of p63, a transcription factor that regulates many cell activities, including cell proliferation, maintenance, and differentiation. It performs as a sensitive and specific tool for aiding in the identification of squamous cell carcinoma of the lung. In addition to its utility as a squamous differentiation marker, p40 has also been proven to be a valuable marker for highlighting myoepithelial and basal cell populations in prostate, breast, skin, and salivary gland.[1-5] Strong p40 expression is frequently observed in esophageal cancerous squamous lesions.[6] Immunohistochemical detection of p40 can also be helpful in identifying urothelial carcinoma.[7] In cases of prostate carcinoma, p40 is almost always found to be negative for basal cell staining.[8]

Above: p40 on lung squamous cell carcinoma

Control: Lung squamous cell carcinoma (Nuclear); Urothelial carcinoma (Nuclear); Prostate (Nuclear)

Associated Specialties:
Breast/Gynecological pathology, Genitourinary (GU) pathology, Pulmonary pathology

References and Additional Product Information:

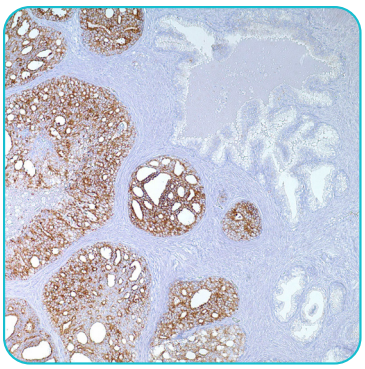
Ordering Information:

Cat. No.	Description
483R-14	0.1 mL concentrate
483R-15	0.5 mL concentrate
483R-16	1.0 mL concentrate
483R-17	1.0 mL predilute ready-to-use
483R-18	7.0 mL predilute ready-to-use
483R-10	25.0 mL predilute ready-to-use

Regulatory Designation: IVD

P504s (13H4)

Rabbit Monoclonal Antibody



P504s, a cytoplasmic 382-amino acid protein also called alpha-methylacyl-CoA racemase (AMACR), plays a role in the beta-oxidation of branched-chain fatty acids and fatty acid derivatives.[1-2] While P504s may be expressed in various normal tissue types, it is rarely detected in benign prostate tissue.[3] P504s immunohistochemistry is useful as an aid in identifying prostate carcinomas.[1-5]

Above: P504s on prostate adenocarcinoma

Control: Prostate adenocarcinoma (Cytoplasmic)

Associated Specialties:
Genitourinary (GU) pathology

References and Additional Product Information:

Ordering Information:

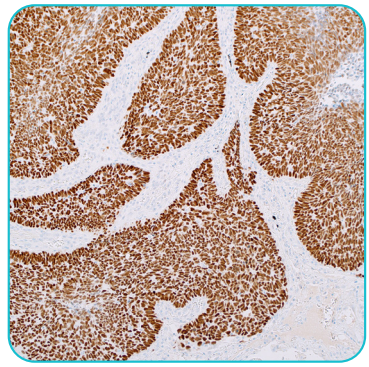
Cat. No.	Description
504R-14	0.1 mL concentrate
504R-15	0.5 mL concentrate
504R-16	1.0 mL concentrate
504R-17	1.0 mL predilute ready-to-use
504R-18	7.0 mL predilute ready-to-use
504R-10	25.0 mL predilute ready-to-use

Regulatory Designation: IVD

p53 (EP9)

Rabbit Monoclonal Primary Antibody

Anti-p53 tumor suppressor protein antibody recognizes a 53 kDa phosphoprotein, identified as p53 suppressor gene product. It reacts with the mutant as well as wild type p53, although significant accumulation of the mutant form of p53 protein due to longer half-life is the basis for the test using the IHC technique.[1] Nuclear staining with this antibody has been shown in breast carcinoma, lung carcinoma, colorectal carcinoma, and urothelial carcinoma.[2-8]



Above: p53 on lung squamous cell carcinoma

Control: Colorectal carcinoma (Nuclear); Urothelial carcinoma (Nuclear); Ovarian serous carcinoma (Nuclear); Breast ductal carcinoma in-situ (Nuclear)

Ordering Information:

Cat. No.	Description
453R-24	0.1 mL concentrate
453R-25	0.5 mL concentrate
453R-26	1.0 mL concentrate
453R-27	1.0 mL predilute ready-to-use
453R-28	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Associated Specialties:
Anatomic pathology

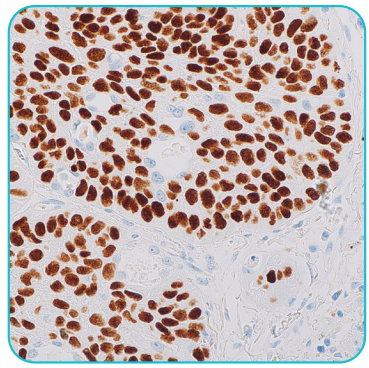
References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

p63 (EP174)

Rabbit Monoclonal Primary Antibody

p63 is a transcription factor that regulates many cell activities, including cell proliferation, maintenance, differentiation, adhesion, and apoptosis.[1] It has been found to be a sensitive and specific marker of myoepithelial and basal cell populations in prostate, breast, skin, and salivary gland. Additionally, p63 has also demonstrated immunohistochemical utility in identifying benign and malignant breast lesions.[2] In prostatic carcinomas, it can also be used to recognize benign glands adjacent to malignant glands.[3] p63 can also be used to differentiate adenocarcinoma of the lungs, where it is usually negative, from squamous cell carcinoma, which can be useful for advanced stages of the carcinoma where surgery is no longer an option.[4]



Above: p63 on lung squamous cell carcinoma

Control: Lung squamous cell carcinoma (Nuclear); Prostate (Nuclear)

Ordering Information:

Cat. No.	Description
482R-14	0.1 mL concentrate
482R-15	0.5 mL concentrate
482R-16	1.0 mL concentrate
482R-17	1.0 mL predilute ready-to-use
482R-18	7.0 mL predilute ready-to-use
482R-10	25.0 mL predilute ready-to-use

Regulatory Designation: IVD

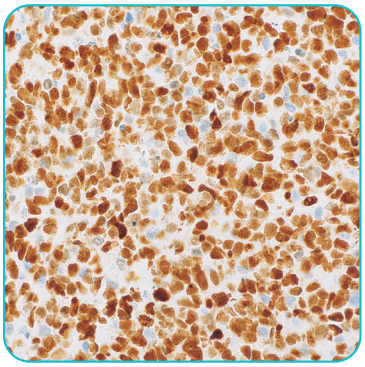
Associated Specialties:
Breast/Gynecological pathology, Genitourinary (GU) pathology, Pulmonary pathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

PAX-7 (MRQ-69)

Mouse Monoclonal Antibody



Above: PAX-7 on rhabdomyosarcoma

Control: Rhabdomyosarcoma (Nuclear); Ewing's sarcoma (Nuclear)

The paired-box (PAX) family of proteins are key transcriptional regulators involved in early critical development.[1] The PAX-7 transcription factor has important functions in mammalian myogenesis and early neural development, with a particularly crucial role in specification and self-renewal of skeletal muscle tissue.[2,3] A high frequency of strong PAX-7 nuclear expression has been identified predominantly in rhabdomyosarcomas, preferentially in the embryonal subtype, and Ewing's sarcoma, with reactivity being absent in related malignancies such as leiomyosarcoma, lymphoblastic lymphoma, neuroblastoma, carcinoid tumor, gastrointestinal stromal tumor, and small cell lung carcinoma. Immunohistochemical detection of PAX-7 protein can be used as a tool in distinguishing embryonal rhabdomyosarcoma and Ewing's sarcoma from histologic mimics.[4,5]

Associated Specialties:
Pediatric pathology, Soft tissue pathology

References and Additional Product Information:

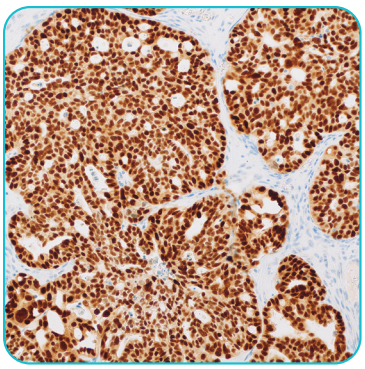
Ordering Information:

Cat. No.	Description
481M-94	0.1 mL concentrate
481M-95	0.5 mL concentrate
481M-96	1.0 mL concentrate
481M-97	1.0 mL predilute ready-to-use
481M-98	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

PAX-8 (SP348)

Rabbit Monoclonal Antibody



Above: PAX-8 on ovarian serous carcinoma

Control: Renal cell carcinoma (Nuclear); Ovarian serous carcinoma (Nuclear); Papillary thyroid carcinoma (Nuclear); Fallopian Tube (Nuclear)

PAX-8 is a transcription factor expressed during embryonic development of Müllerian organs, kidney, and thyroid, with continued expression in neoplastic transformation of some epithelial cell types of these mature tissues.[1] It can be useful for marking several types of carcinoma including, but not limited to, ovarian serous carcinoma, clear cell renal cell carcinoma and papillary thyroid carcinoma.[1-5] Certain anti-PAX-8 antibodies may react with lymphocytes and their neoplasms, which has been attributed to cross-reactivity with PAX-5 due to sequence homology between PAX-8 and PAX-5, but clone SP348 does not exhibit reactivity in these cell types.[6]

Associated Specialties:
Anatomic pathology

References and Additional Product Information:

Ordering Information:

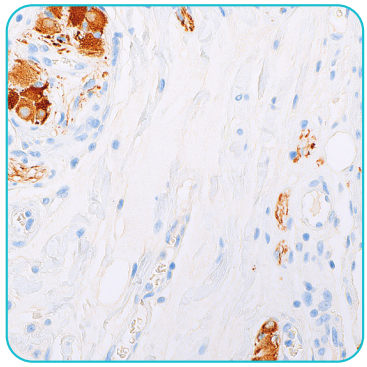
Cat. No.	Description
363R-34	0.1 mL concentrate
363R-35	0.5 mL concentrate
363R-36	1.0 mL concentrate
363R-37	1.0 mL predilute ready-to-use
363R-38	7.0 mL predilute ready-to-use
363R-30	25.0 mL predilute ready-to-use

Regulatory Designation: IVD

Peripherin (8G2)

Mouse Monoclonal Antibody

Peripherin is a type III intermediate filament protein localized in the cytoplasm of ganglion cells and in a granular pattern in nerve fibers comprising the peripheral nervous system, which extends to many tissues throughout the body including the salivary gland, small intestine, prostate, stomach, and colon.[1] The specific expression of peripherin in ganglia provides utility in the identification of immature ganglion cells in infant or newborn biopsies where there may be morphological ambiguity with other cell types such as endothelial cells, fibroblasts, or inflammatory cells. Likewise, peripherin labeling can be used for visualizing ganglion cell distribution where reduction or loss of observed labeling is correlative with the reduction or loss of ganglion cell presence. The use of anti-peripherin in tracking the reduction or loss of ganglion cells in the submucosal and myenteric layers of the colon wall can act as a valuable tool in identifying patients suspected of recto-sigmoid Hirschsprung disease and other forms of colonic aganglionosis.[2-4]



Above: Peripherin on submucosal ganglion cells in small intestine wall

Control: Colon (Cytoplasmic)

Ordering Information:

Cat. No.	Description
476M-14	0.1 mL concentrate
476M-15	0.5 mL concentrate
476M-16	1.0 mL concentrate
476M-17	1.0 mL predilute ready-to-use
476M-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

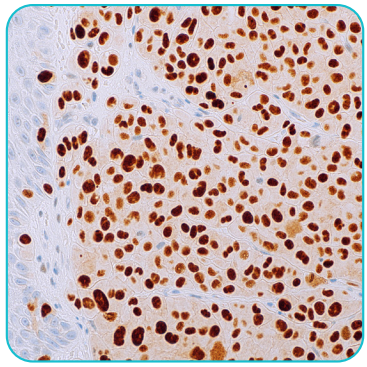
Associated Specialties:
Pediatric pathology

References and Additional Product Information:

PRAME (EP461)

Rabbit Monoclonal Primary Antibody

PRAME (PReferentially-expressed Antigen in MElanoma) is a gene encoded on the 22q11-22 chromosomal sequence and encodes a 509 amino acid residue protein.[1] PRAME is a melanoma antigen that is preferentially expressed in tumors and is recognized by cytotoxic T lymphocytes.[2,3] PRAME can be used to distinguish between malignant melanoma cells and nevus cells,[4] and therefore may be useful for diagnostic purposes to support a suspected case of melanoma. PRAME is considered a cancer-testis antigen (CTA)[5] and is not strongly expressed in most other normal tissues. PRAME is positively expressed in about half of uveal melanomas,[6] and the majority of mucosal melanomas.[7]



Above: PRAME on skin melanoma

Control: Melanoma (Nuclear)

Ordering Information:

Cat. No.	Description
484R-14	0.1 mL concentrate
484R-15	0.5 mL concentrate
484R-16	1.0 mL concentrate
484R-17	1.0 mL predilute ready-to-use
484R-18	7.0 mL predilute ready-to-use
484R-10	25.0 mL predilute ready-to-use

Regulatory Designation: IVD

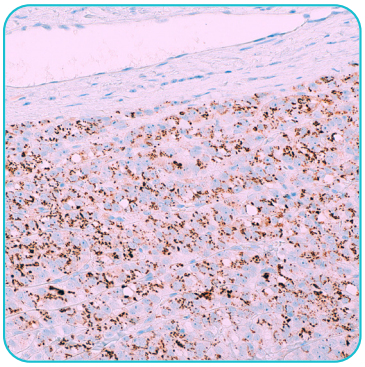
Associated Specialties:
Dermatopathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

Prostein (EP381)

Rabbit Monoclonal Primary Antibody



Prostein is a type IIIA transmembrane protein comprising a cleavable signal peptide and 11 transmembrane domains.[1] *In vitro* studies demonstrate that prostein transcription and expression is androgen responsive.[1] Prostein expression was found to be restricted to tissues of prostatic origin such as non-neoplastic prostate, prostate lesions, and malignant prostate tissues.[1-3] Due to its high specificity, immunohistochemical detection of prostein may have utility in distinguishing prostatic carcinoma from the carcinomas of bladder, kidney, lung and colorectum.

Above: Prostein on prostate

Control: Prostate (Cytoplasmic); Prostate carcinoma (Cytoplasmic)

Associated Specialties:
Anatomic pathology, Genitourinary (GU) pathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

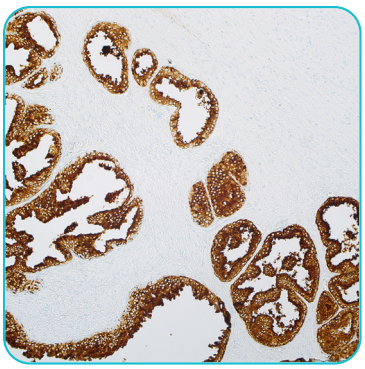
Ordering Information:

Cat. No.	Description
450R-14	0.1 mL concentrate
450R-15	0.5 mL concentrate
450R-16	1.0 mL concentrate
450R-17	1.0 mL predilute ready-to-use
450R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

PSA (EP109)

Rabbit Monoclonal Primary Antibody



Prostate-Specific Antigen (PSA) is a 33 kDa protein primarily produced by the prostatic epithelium and the epithelial lining of the periurethral glands.[1] PSA is strongly expressed in both normal and neoplastic prostatic tissue. Anti-PSA is most useful in determining the prostatic origin of carcinomas in non-prostate tissues (metastatic disease) using IHC techniques.[1-4]

Above: PSA on prostate gland

Control: prostate, prostate carcinoma (cytoplasmic)

Associated Specialties:
Anatomic pathology, Genitourinary (GU) pathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

Ordering Information:

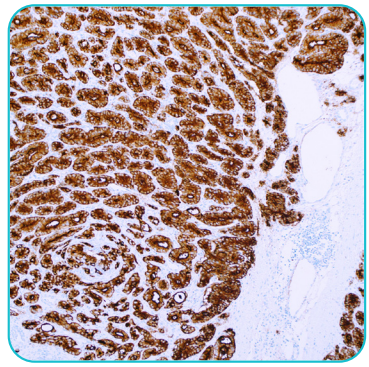
Cat. No.	Description
324R-14-RUO	0.1 mL concentrate
324R-15-RUO	0.5 mL concentrate
324R-16-RUO	1 mL concentrate
324R-17-RUO	1 mL predilute
324R-18-RUO	7 mL predilute

Regulatory Designation: RUO

PSMA (EP192)

Rabbit Monoclonal Primary Antibody

Prostate-specific membrane antigen (PSMA) is a type II transmembrane glycoprotein with enzymatic activity.[1,2] PSMA is expressed in normal prostate epithelial cells as well as prostate neoplastic cells. It has been demonstrated that PSMA expression is increased in prostate cancer and is correlated with disease progression.[2] Although highly sensitive and specific for prostate, PSMA also labels a subset of non-prostate tissues, including the small intestine and kidney.[2,3] PSMA is useful for identifying metastatic prostate carcinoma[4] and distinguishing prostate carcinoma from urothelial carcinoma.[5]



Above: PSMA on prostate carcinoma

Control: Prostate (Cytoplasmic, Membranous)

Ordering Information:

Cat. No.	Description
327R-14	0.1 mL concentrate
327R-15	0.5 mL concentrate
327R-16	1.0 mL concentrate
327R-17	1.0 mL predilute ready-to-use
327R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Associated Specialties:
Anatomic Pathology, Genitourinary (GU) pathology

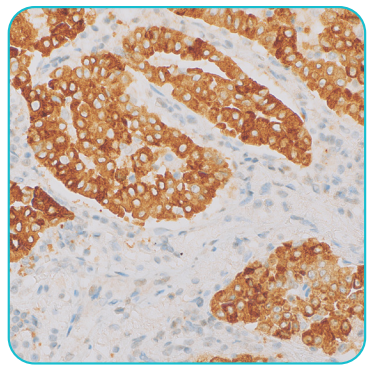
References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

ROS1 (MRQ-68)

Rabbit Monoclonal Antibody

ROS1 (MRQ-68) is an antibody designed to target the c-terminal region of the ROS1 protein. ROS1 encodes a membranous protein with a single transmembrane domain comprising an intracellular-facing receptor tyrosine kinase at the c-terminal region, and an extracellular N-terminal domain comprising fibronectin-like repeats.[1] ROS1 is believed to be expressed during development; however, its normal purpose and functionality have not been well-defined.[2] Upregulated ROS1 expression occurs in lesions as a result of chromosomal rearrangement of ROS1 attached to one of several possible characterized gene partners which are more constitutively expressed.[3,4] Of the characterized gene rearrangements that can occur, the receptor tyrosine kinase region is usually conserved when paired with an upstream gene partner.[3,4]



Above: ROS1 on lung adenocarcinoma

Control: ROS1+ Lung Adenocarcinoma (Cytoplasmic, Membranous)

Ordering Information:

Cat. No.	Description
469R-94	0.1 mL concentrate
469R-95	0.5 mL concentrate
469R-96	1.0 mL concentrate
469R-97	1.0 mL predilute ready-to-use
469R-98	7.0 mL predilute ready-to-use

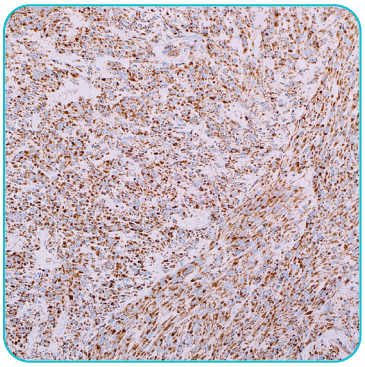
Regulatory Designation: IVD

Associated Specialties:
Anatomic pathology

References and Additional Product Information:

SDHB (EP288)

Rabbit Monoclonal Primary Antibody



Succinate dehydrogenase B (SDHB) is an iron-sulfur subunit of mitochondrial complex II, a respiratory complex that catalyzes the oxidation of succinate in the mitochondrial membrane.[1-2] Many cancers are generally positive for SDHB, including renal cell carcinomas (RCC) and gastrointestinal stromal tumors (GIST). However, a subset of RCC and GIST tumors that are associated with SDH mutations, Carney-Stratakis Syndrome or Carney Triad exhibit a loss of SDHB expression.[3-4]

Above: SDHB on GIST

Control: Gastrointestinal stromal tumor (Cytoplasmic)

Associated Specialties:
Anatomic pathology
Gastrointestinal (GI) pathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

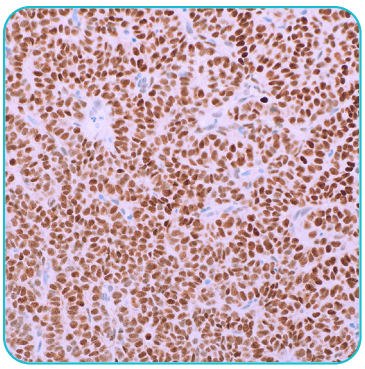
Ordering Information:

Cat. No.	Description
466R-14	0.1 mL concentrate
466R-15	0.5 mL concentrate
466R-16	1.0 mL concentrate
466R-17	1.0 mL predilute ready-to-use
466R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

SF-1 (EP434)

Rabbit Monoclonal Primary Antibody



As both a nuclear receptor and nuclear transcription factor, Steroidogenic factor-1 (SF-1) serves as an important modulator of steroidogenesis.[1,2] It has been demonstrated that SF-1 serves as a "master regulator" in varying facets of development and function in both reproductive and adrenal tissues.[1] Immunohistochemical detection of SF-1 in testicular tissue may provide value for distinguishing sex-cord stromal tumors, including Leydig cell, Sertoli cell and granulosa cell neoplasms, from other tumors.[2,3] In addition, SF-1 detection may have utility in distinguishing primary adrenal cortical lesions from their histologic mimics such as renal clear cell carcinoma.[4]

Above: SF-1 on granulosa cell tumor

Control: Adrenocortical carcinoma (Nuclear); Testis (Nuclear); Granulosa cell tumor (Nuclear)

Associated Specialties:
Anatomic pathology
Genitourinary (GU) pathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

Ordering Information:

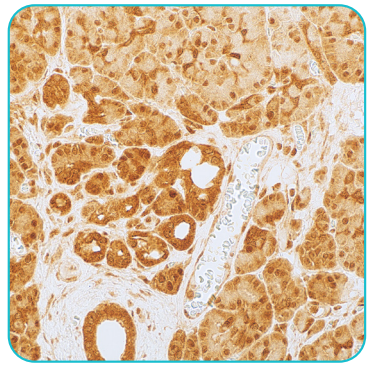
Cat. No.	Description
462R-14	0.1 mL concentrate
462R-15	0.5 mL concentrate
462R-16	1.0 mL concentrate
462R-17	1.0 mL predilute ready-to-use
462R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

SMAD4 (MRQ-72)

Rabbit Monoclonal Antibody

Mothers Against Decapentaplegic Homolog 4 (SMAD4) is a transcription factor that is involved in TGFβ signaling pathways and acts as a tumor suppressor.[1] SMAD4 is commonly expressed in a variety of cancers, including pancreatic ductal adenocarcinoma (PDA), colorectal carcinoma (CRC), hepatocellular carcinoma (HCC), and gastric carcinomas, as well as non-neoplastic liver, pancreas, and colon.[2-5] However, a loss of expression has been observed in a subset of PDA, CRC and gastric carcinomas due to a variety of mutations including nonsense, missense, deletions, and splice site changes.[2-4,6] In contrast, SMAD4 is over-expressed in HCC compared to the weak expression that is exhibited in non-neoplastic liver.[5]



Above: SMAD4 on pancreatic tissue

Control: Pancreas (Cytoplasmic, Nuclear)

Ordering Information:

Cat. No.	Description
487R-94	0.1 mL concentrate
487R-95	0.5 mL concentrate
487R-96	1.0 mL concentrate
487R-97	1.0 mL predilute ready-to-use
487R-98	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

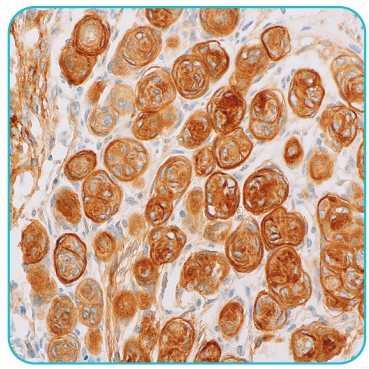
Associated Specialties:
Gastrointestinal (GI) pathology

References and Additional Product Information:

Somatostatin Receptor 2A (EP149)

Rabbit Monoclonal Primary Antibody

Somatostatin Receptor 2A (SSTR2A) is a protein highly expressed in pancreas binding somatostatin and inhibiting pancreatic enzyme secretion.[1] SSTR2A is used as a marker for identifying meningioma from other spindle-cell tumors such as solitary fibrous tumor.[2,3] SSTR2A is more frequently expressed in higher grade meningiomas and associated to its microvessel proliferation.[4] SSTR2A has demonstrated utility as a diagnostic marker for follicular dendritic cell sarcomas and some other related tumors.[5]



Above: Somatostatin receptor 2A on meningioma

Control: Meningioma (Cytoplasmic, Membranous); Pancreas (Cytoplasmic, Membranous); Lymph node (Cytoplasmic, Membranous)

Ordering Information:

Cat. No.	Description
486R-14	0.1 mL concentrate
486R-15	0.5 mL concentrate
486R-16	1.0 mL concentrate
486R-17	1.0 mL predilute ready-to-use
486R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Associated Specialties:
Anatomic pathology, Neuropathology

References and Additional Product Information:

CELL MARQUE RabMAb® Technology from Abcam

TCL1 (EP105)

Rabbit Monoclonal Primary Antibody

Above: TCL1 on lymph node with follicular lymphoma

Control: Tonsil (Cytoplasmic, Nuclear); Follicular lymphoma (Nuclear)

T-cell leukemia/lymphoma protein 1 (TCL1, TCL1A, p14TCL1) is a 14 kDa product of the TCL1 gene. TCL1 protein is normally found in the nucleus and cytoplasm of lymphoid lineage cells during early embryogenesis. Chromosomal translocations may lead to overexpression of TCL1, resulting in T-cell leukemia and B-cell lymphoma.[1-3] TCL1 binds to a novel site in the pleckstrin homology (PH) domain, resulting in activation and nuclear translocation of Akt by overexpressed TCL1 which may promote an anti-apoptotic response; this may normally serve to promote growth during development but may lead to malignancy when TCL1 is overexpressed.[4] TCL1 is expressed in differentiated B-cells under both reactive and neoplastic conditions, antigen committed B-cells, and in germinal center B-cells. TCL1 is down-regulated in the latest stage of B-cell differentiation.[5,6] TCL1 is overexpressed in Burkitt lymphoma, chronic lymphocytic leukemia, mantle cell lymphoma, and follicular lymphoma.[2,7,8]

Associated Specialties:
Hematopathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

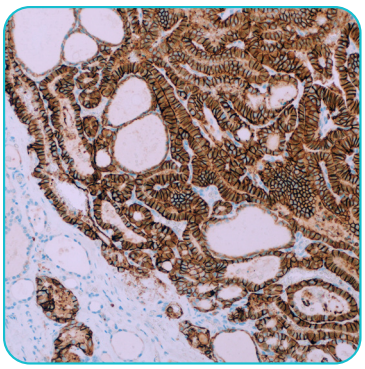
Ordering Information:

Cat. No.	Description
357R-14	0.1 mL concentrate
357R-15	0.5 mL concentrate
357R-16	1.0 mL concentrate
357R-17	1.0 mL predilute ready-to-use
357R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

TROP2 (EP431)

Rabbit Monoclonal Primary Antibody



Above: TROP2 on papillary thyroid carcinoma

Control: Papillary thyroid carcinoma (Cytoplasmic, Membranous)

Trophoblast antigen 2 (TROP2) is a transmembrane glycoprotein that transduces intracellular calcium signals.[1] The overexpression of TROP2 has been linked to tumor progression due to its involvement in the regulation of multiple vital cell processes including migration, proliferation, and invasion.[2] TROP2 exhibits strong, diffuse staining in papillary thyroid carcinoma, while staining in other thyroid lesions, such as follicular thyroid adenomas and carcinomas, is limited to rare, focal, or scattered cells.[3,4] An increase in TROP2 expression has also been observed in colorectal carcinomas and ovarian serous carcinomas compared to non-neoplastic ovary and colon.[5]

Associated Specialties:
Anatomic pathology, Cytopathology

References and Additional Product Information:

CELL MARQUE RabMAb Technology from Abcam

Ordering Information:

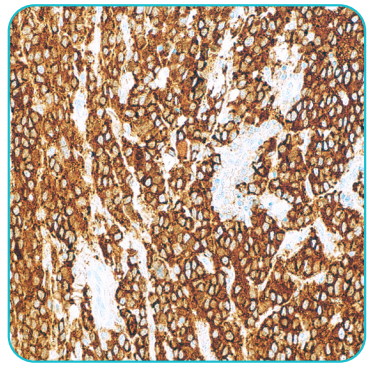
Cat. No.	Description
465R-14	0.1 mL concentrate
465R-15	0.5 mL concentrate
465R-16	1.0 mL concentrate
465R-17	1.0 mL predilute ready-to-use
465R-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Tyrosine Hydroxylase (LNC1)

Mouse Monoclonal Antibody

Tyrosine Hydroxylase (TYH) is the rate-limiting enzyme of catecholamine biosynthesiss.[1,2] TYH uses tetrahydrobiopterin and molecular oxygen to convert tyrosine to L-DOPA, a precursor to dopamine. Anti-TYH is sensitive and specific for peripheral neuroblastic tumors in the differential diagnosis from other tumors of childhood and shows high diagnostic utility. Anti-TYH has been shown to positively label all pheochromocytomas and sympathetic paragangliomas, and thus aids in differentiating them from their histologic mimics such as adrenocortical neoplasms.[3,4]



Above: Tyrosine Hydroxylase on neuroblastoma

Control:
Neuroblastoma (Cytoplasmic)

Ordering Information:

Cat. No.	Description
490M-14	0.1 mL concentrate
490M-15	0.5 mL concentrate
490M-16	1.0 mL concentrate
490M-17	1.0 mL predilute ready-to-use
490M-18	7.0 mL predilute ready-to-use

Regulatory Designation: IVD

Associated Specialties:
Pediatric pathology

References and Additional Product Information:

Sigma-Aldrich®

Lab & Production Materials

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Rocklin, CA 95677
USA

cellmarque.com

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Fax: **+1 916-746-8989**
Email: **international@milliporesigma.com**

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