CFDA CE IVD

Vol 1

ANTIBODY CATALOG

GenomeMe®

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Antibody Catalog

GenomeMe®

Letter from our CEO

Dear Laboratory Professional,

GenomeMe® is proud to present the 1st edition of our Antibody Catalog, introducing you to our targeted portfolio of GeneAb™ mouse and rabbit monoclonal antibodies. We listened carefully to the needs of specialists like you and innovated **over 260 new CE-IVD marked and CFDA (2017.226) certified antibodies** against key targets most impactful for furthering human health. Carefully engineered to deliver the highest quality of consistent, specific, and sensitive stains, we created GeneAb™ to empower you to make a confident diagnosis every time.

With a belief that Precision Medicine starts with Precision Diagnostics, GenomeMe®'s vision is to be the leading manufacturer of Precision Diagnostic solutions. Founded in 2015 in Vancouver, B.C., Canada, we have since established over 9,000sqf of state-of-the-art ISO 13485:2003 and 2012 certified facility, fully equipped for the R&D and manufacturing of world-class molecular pathology antibodies. With our team of dedicated experts specializing in a variety of clinical diagnostic fields, we aim to provide all the tools you need to deliver precise treatments tailored to your patient's unique needs.

From diagnosis to prognosis to therapy—we are there with you, supporting your daily efforts to improve patient lives. We invite you to explore our catalog and discover the perfect solution for your laboratory.

Working with you to advance human health,

Mohammad Tabesh

Chief Executive Officer

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Monday through Friday, 9:00 a.m. to 5:00 p.m. (PST).

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Orders may be submitted online, by phone, by email, or by standard mail:

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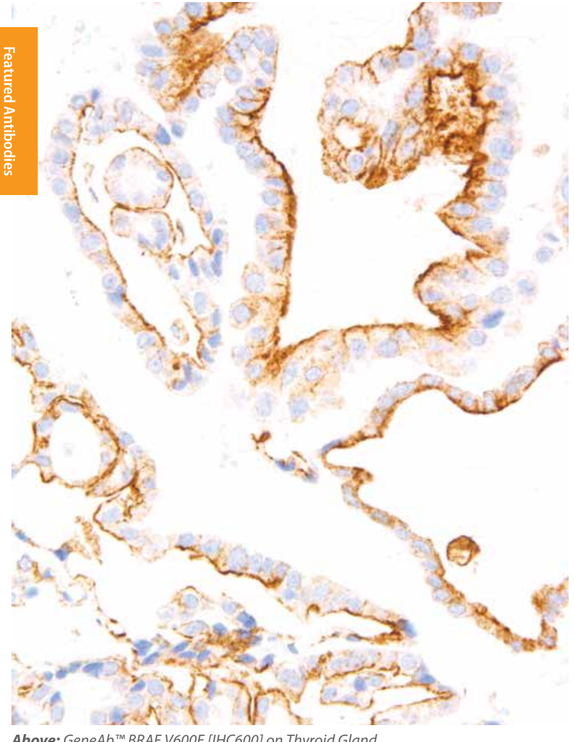
Technical Support
A Technical Service Representative will be happy to assist you with your questions via email, at Tech.Support@GenomeMe.ca, or via telephone during our Operating Hours, at +1 (604) 244-9962.

FEATURED ANTIBODIES

BRAF V600E

Clone: IHC600 | **Source:** Mouse Monoclonal | **Positive Control:** Colorectal Adenocarcinoma, Thyroid Papillary Carcinoma with the BRAF V600E Mutation



Above: *GeneAb™ BRAF V600E [IHC600] on Thyroid Gland*

Description

Serine/Threonine-Protein Kinase B-Raf (BRAF) is a cytoplasmic serine-threonine kinase of the RAF family, which mediates downstream cellular responses to growth signals through the mitogen-activated protein kinase (MAPK) signaling pathway. Oncogenic mutations in the BRAF gene, 80% of which are a single V600E substitution within the kinase domain, constitutively activate the MAPK signaling pathway and result in increased cell proliferation and apoptosis resistance. The V600E mutation is observed in colorectal cancer, non-Hodgkin's lymphoma, papillary thyroid carcinoma, malignant melanoma, non-small-cell lung carcinoma, and lung adenocarcinoma. BRAF V600E is therefore an important immunohistochemical marker for tumour diagnosis and prognosis.

References

1. Li WQ, et al. Mol Cancer. 2006; 5:2. 2. Davies H, et al. Nature. 2002; 417:949-54. 3. Benlloch S, et al. J Mol Diagn. 2006; 8:540-3. 4. Gear H, et al. Invest Ophthalmol Vis Sci. 2006; 45:2484-8. 5. Capper D, et al. Acta Neuropathol. 2011; 122:11-19.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC600-100	$210
1 ml, Concentrate	IHC600-1	$980
7 ml, Predilute	IHC600-7	$520
3 Positive Control Slides	IHC600-PC	$275

Designations

IVD: RUO:

HER2/neu

Clone: IHC002 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma

Description

The **HER2/neu (c-erbB-2)** proto-oncogene is a transmembrane receptor tyrosine kinase that is clinically indicated in a number of carcinomas. Overexpression of the c-erbB-2 protein has been associated with ductal breast cancer, as well as pulmonary and gastric adenocarcinomas. A correlation between HER2 and p53 has also been documented, as overexpression of both proteins has been associated with early invasion and metastasis in bladder cancer.

References

1. Suthipintawong C, et al. Diagn Cytopathol. 1997; 17:127-33. 2. Alexiev BA, et al. Gen Diagn Pathol. 1997; 142:271-9. 3. Fernández Aceñero MJ, et al. Gen Diagn Pathol. 1997; 142:289-96. 4. Koeppen HKW, et al. Histopathology. 2001; 38:96-104. 5. Moch H, et al. Virchows Arch A Pathol Anat Histopathol. 1993; 423:329-34. 6. Cetin B, et al. Transl Gastroenterol Hepatol. 2016; 1:59.

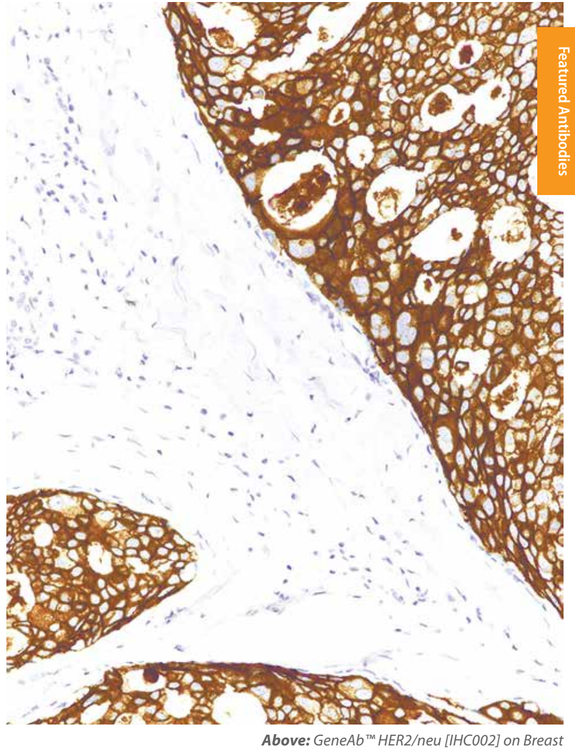
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC002-100	$145
1 ml, Concentrate	IHC002-1	$925
7 ml, Predilute	IHC002-7	$300
25 ml, Predilute	IHC002-25	$1,040
3 Positive Control Slides	IHC002-PC	$160

Designations

IVD: RUO:

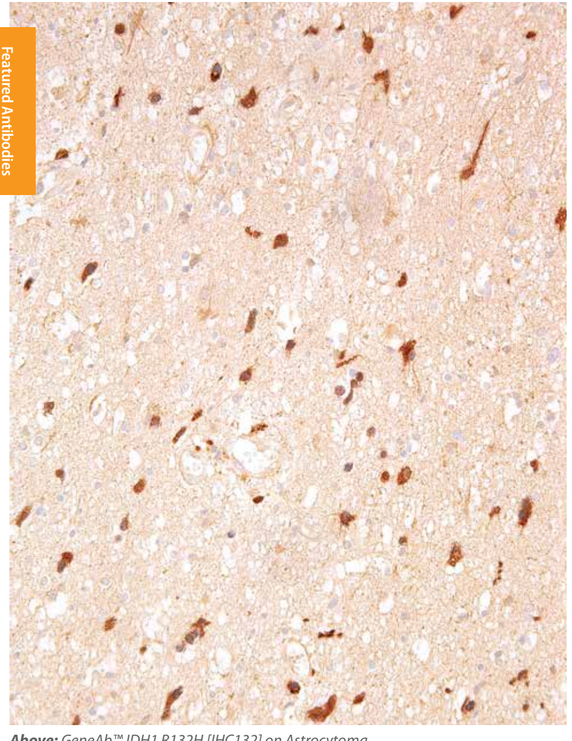


Above: *GeneAb™ HER2/neu [IHC002] on Breast*

GeneAb™

IDH1 R132H

Clone: IHC132 | **Source:** Mouse Monoclonal | **Positive Control:** Astrocytoma



Above: *GeneAb™ IDH1 R132H [IHC132] on Astrocytoma*

Description

Isocitrate Dehydrogenase 1 (IDH1) is a soluble, cytosolic enzyme involved in the TCA metabolic cycle. The most notable mutation in this enzyme, R132H, is clinically indicated in the majority of astrocytomas and oligodendroglial tumours, with the mutation being associated with more favourable prognosis and increased survival in those patients. IDH1 R132H is also useful in the differential diagnosis between anaplastic glioma and glioblastoma.

References

1. Cui D, et al. Int J Biochem Cell Biol. 2016;71:72-81. 2. Balss J, et al. Acta Neuropathol. 2008; 116:597-602. 3. Capper D, et al. Brain Pathol. 2010; 20:245-54. 4. Camelo-Piragua S, et al. Acta Neuropathol. 2010; 119:509-11.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC132-100	$425
1 ml, Concentrate	IHC132-1	$1,700
7 ml, Predilute	IHC132-7	$980
3 Positive Control Slides	IHC132-PC	$520

Designations

IVD: RUO:

GeneAb™

Ki-67

Clone: IHC067 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Ki-67 is a nuclear, non-histone protein that is expressed only during active phases of the cell cycle (G1, S, G2 and M), but not in the resting phases (G0 and G1 early phase). Although the antigen has also been associated with ribosomal RNA transcription, it is strongly linked to cell proliferation and has thus been indicated as an effective marker in grading the proliferation rate of tumours, including those of the brain, breast, cervix, and prostate.

References

1. Mckeever P, et al. J Neuropathol Exp Neurol. 1998; 57:931-6. 2. Coons SW, et al. Neurosurgery. 1997; 41:878-84. 3. Allegra CJ, et al. J Clin Oncol. 2003; 21:241-50. 4. Pathmanathan N, et al. J Clin Pathol. 2013; 66:512-6. 5. Jansen R, et al. Br J Cancer. 1998; 78:460-65. 6. Goodson WH, et al. Breast Cancer Res Treat. 1998; 49:155-64. 7. Rossi S, et al. Am J Clin Pathol. 2005; 124:295-302. 8. Pena LL, et al. J Vet Diag Invest. 1998; 10:237-46. 9. Gibbons D, et al. Comparison Mod Pathol. 1997; 10:409-13.

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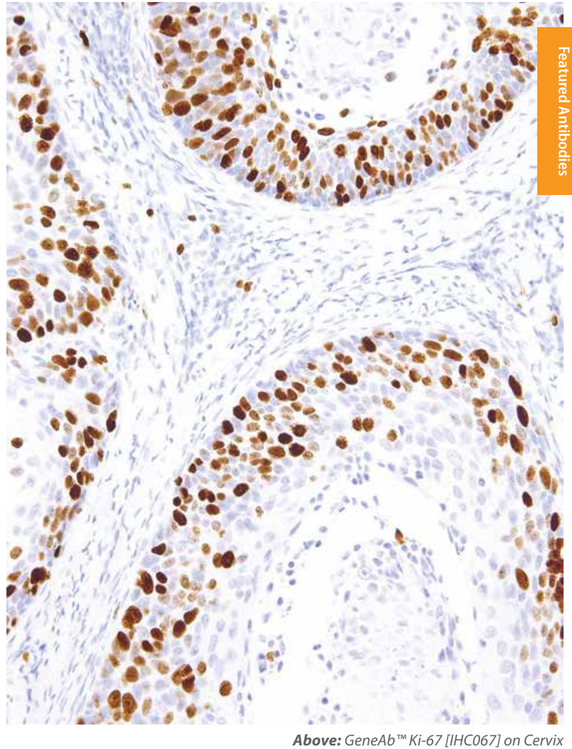
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC067-100	$190
1 ml, Concentrate	IHC067-1	$855
7 ml, Predilute	IHC067-7	$360
25 ml, Predilute	IHC067-25	$1,285
3 Positive Control Slides	IHC067-PC	$115

Designations

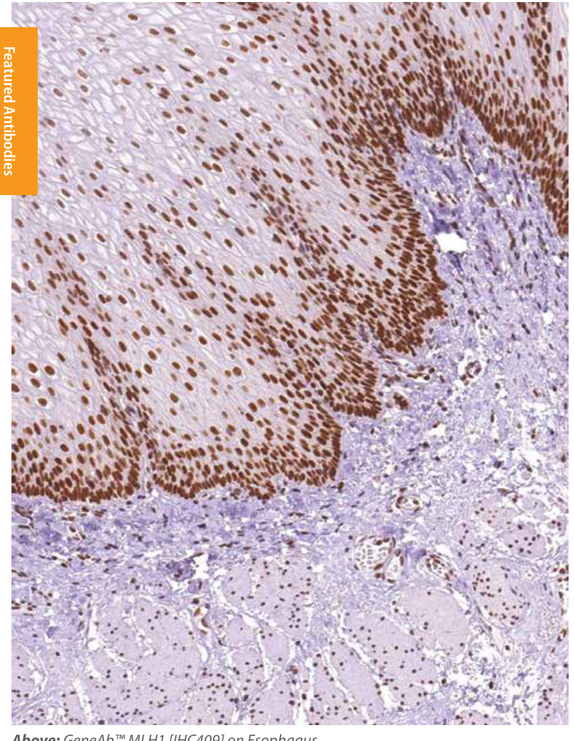
IVD: RUO:



Above: *GeneAb™ Ki-67 [IHC067] on Cervix*

MLH1

Clone: IHC409 | **Source:** Mouse Monoclonal | **Positive Control:** Colon, Colon Carcinoma



***Above:** GeneAb™ MLH1 [IHC409] on Esophagus*

Description

MutL Homolog 1 (MLH1) is a protein involved in the mismatch-repair pathway. This protein is commonly associated with hereditary non-polyposis colorectal cancer, as the MLH1 gene is frequently mutated in patients with this cancer. Studies have shown MLH1 to be deficient in a high percentage of patients with microsatellite instability, as well as endometrial and ovarian cancers. Use of Anti-MLH1 is optimized when paired in an IHC panel with MSH6, MSH2, and PMS2. Anti-MLH1 is useful in the detection of MLH1 in a number of normal and neoplastic tissues, and for identifying a loss of MLH1 in tumours that are microsatellite-unstable.

References

1. Pal T, et al. Cancer. 2008; 113:733-42. 2. Wright CL, et al. Am J Surg Pathol. 2003; 27:1393-406. 3. Brueckl WM, et al. Anticancer Res. 2003: 23:1773-8. 4. Rigau V, et al. Arch Pathol Lab Med. 2003; 127:694-700. 5. Renkonen E, et al. J Clin Oncol. 2003; 21:3629-37. 6. Hoedema R, et al. Am Surg. 2003; 69:387-92. 7. Christensen M, et al. Cancer. 2002; 95:2422-30. 8. Wahlberg SS, et al. Cancer Res. 2002; 62:3485-92. 9. Lanza G, et al. Mod Pathol. 2002; 15:741-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC409-100	$165
1 ml, Concentrate	IHC409-1	$635
7 ml, Predilute	IHC409-7	$465
25 ml, Predilute	IHC409-25	$1,405
3 Positive Control Slides	IHC409-PC	$160

Designations

IVD: RUO:

MSH2

Clone: IHC410 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Mucosa, Colon Carcinoma

Description

MutS Homolog 2 (MSH2) is a protein involved in the mismatch-repair pathway. This protein is commonly associated with hereditary non-polyposis colorectal cancer, and mutations in this gene are correlated with the development of sporadic colorectal carcinoma. Expression levels of MSH2 are abnormally low in a high percentage of patients with microsatellite instability, as well as endometrial and ovarian cancers. Use of Anti-MSH2 is optimized when paired in an IHC panel with antibodies against MSH6, MLH1, and PMS2. Reports have shown Anti-MSH2 to be useful in the detection of the protein in a number of normal and neoplastic tissues, and for identifying a loss of MSH2 in tumours that are microsatellite-unstable.

References

1. Pal T, et al. Cancer. 2008; 113:733-42. 2. Brueckl WM, et al. Anticancer Res. 2003; 23:1773-8. 3. Rigau V, et al. Arch Pathol Lab Med. 2003; 127:694-700. 4. Renkonen E, et al. J Clin Oncol. 2003; 21:3629-37. 5. Hoedema R, et al. Am Surg. 2003; 69:387-92. 6. Christensen M, et al. Cancer. 2002; 95:2422-30. 7. Wahlberg SS, et al. Cancer Res. 2002; 62:3485-92. 8. Lanza G, et al. Mod Pathol. 2002; 15:741-9. 9. Thibodeau SN, et al. Cancer Res 1996; 56:4836-40.

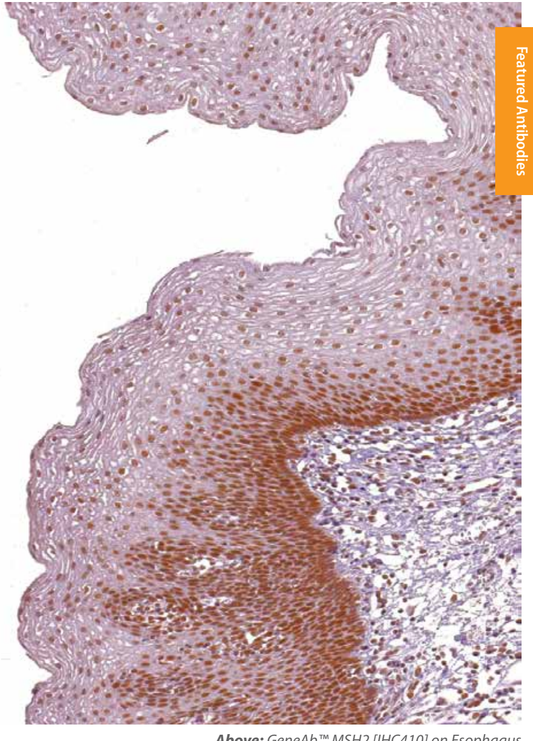
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC410-100	$150
1 ml, Concentrate	IHC410-1	$620
7 ml, Predilute	IHC410-7	$305
25 ml, Predilute	IHC410-25	$1,235
3 Positive Control Slides	IHC410-PC	$160

Designations

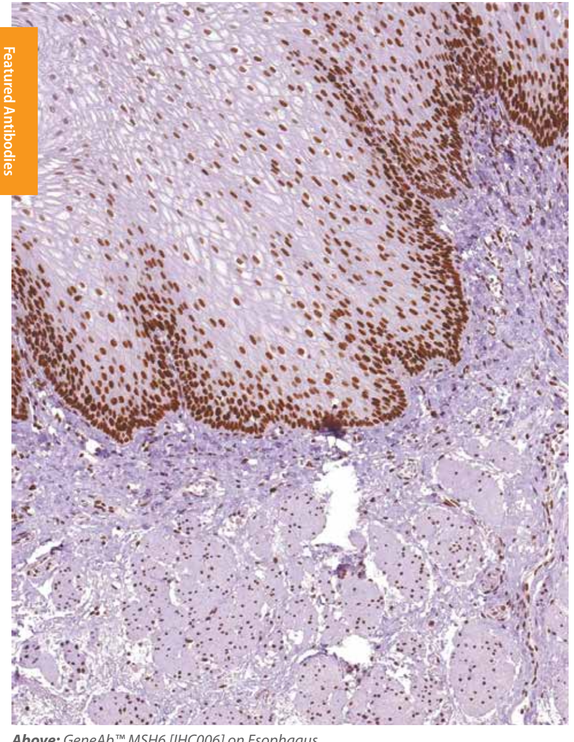
IVD: RUO:



***Above:** GeneAb™ MSH2 [IHC410] on Esophagus*

MSH6

Clone: IHC006 | **Source:** Mouse Monoclonal | **Positive Control:** Colon, Colon Carcinoma



Above: *GeneAb™ MSH6 [IHC006] on Esophagus*

Description

MutS Homolog 6 (MSH6) is a protein involved in the mismatch repair pathway. This protein is commonly associated with hereditary non-polyposis colorectal cancer, and mutations in this gene are correlated with the development of sporadic colorectal carcinoma. Studies have shown that mutations in MSH6, when co-indicated with mutations in MSH1 and MSH2, contribute to the development of sporadic colorectal carcinoma. Use of Anti-MSH2 is optimized when paired with MSH6, MLH1, and PMS2 in an IHC panel.

References

1. Lagerstedt Robinson K, et al. J Natl Cancer Inst. 2007; 99:291-9. 2. Niessen RC, et al. Gut. 2006; 55:1781-8. 3. Hansen TP, et al. Appl Immunohistochem Mol Morphol. 2006; 14:115-21. 4. Lawes DA, et al. Br J Cancer. 2005; 93:472-7. 5. Stormorken AT, et al. J Clin Oncol. 2005; 23:4705-12. 6. Rigau V, et al. Arch Pathol Lab Med. 2003; 127:694-700. 7. Renkonen E, et al. J Clin Oncol. 2003; 21:3629-37.

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Order Information

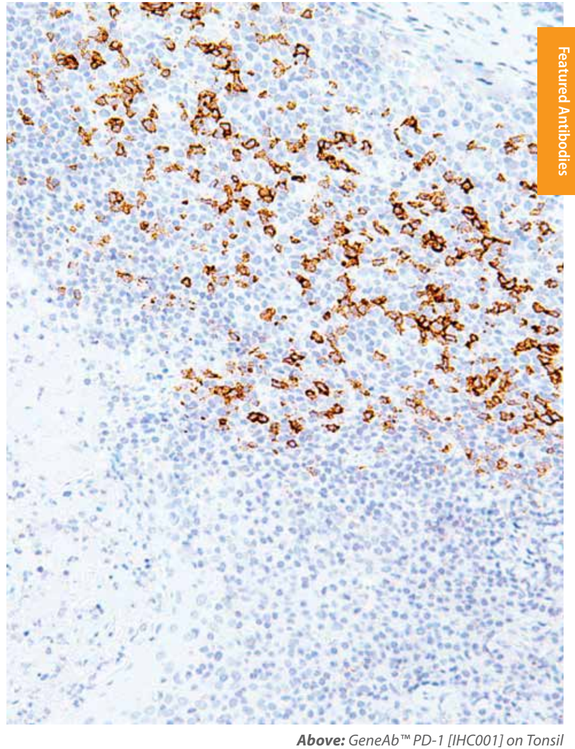
Format	Cat. No.	Price
0.1 ml, Concentrate	IHC006-100	$130
1 ml, Concentrate	IHC006-1	$540
7 ml, Predilute	IHC006-7	$295
25 ml, Predilute	IHC006-25	$1,235
3 Positive Control Slides	IHC006-PC	$160

Designations

IVD: RUO:

PD-1

Clone: IHC001 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node



Above: *GeneAb™ PD-1 [IHC001] on Tonsil*

Description

Programmed Death 1 (PD-1) is a member of the CD28/CTLA-4 family of T-cell regulators, expressed as a co-receptor on the surface of activated T-cells, B-cells, and macrophages. New studies have suggested that the PD-1/PD-L1 signaling pathway may be linked to anti-tumour immunity, as PD-L1 has been shown to induce apoptosis of activated T-cells or inhibit activity of cytotoxic T-cells. In comparison to CD10 and Bcl-6, PD-1 is expressed by fewer B-cells and has therefore been considered a more specific and useful diagnostic marker for angioimmunoblastic T-cell lymphoma. Therapies targeted toward the PD-1 receptor have shown remarkable clinical responses in patients with various types of cancer, including non-small-cell lung cancer, melanoma, and renal-cell cancer.

References

1. Dorfman DM, et al. Am J Surg Pathol. 2006; 30:802-10. 2. Hamanishi J, et al. Proc Natl Acad Sci USA. 2007; 104:3360-5. 3. Kobayashi M, et al. J Rheumatol. 2005; 32:2156-63. 4. Konishi J, et al. Clin Cancer Res. 2004; 10:5094-100. 5. Mataki N, et al. Am J Gastroenterol. 2007; 102:302-12. 6. Kim JW, et al. Oncology (Williston Park). 2014; 28:15-28.

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Order Information

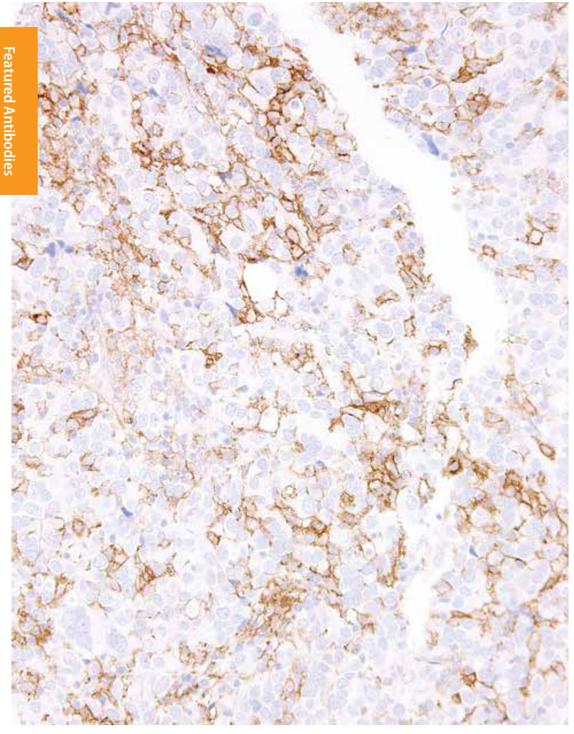
Format	Cat. No.	Price
0.1 ml, Concentrate	IHC001-100	$100
1 ml, Concentrate	IHC001-1	$295
7 ml, Predilute	IHC001-7	$245
3 Positive Control Slides	IHC001-PC	$115

Designations

IVD: RUO:

PD-L1

Clone: IHC411 | **Source:** Rabbit Monoclonal | **Positive Control:** Tonsil, Lung Adenocarcinoma



Above: *GeneAb™ PD-L1 [IHC411] on Lung*

Description

Programmed Death-Ligand 1 (PD-L1), CD274, or **B7 Homolog 1 (B7-H1),** is a transmembrane protein involved in suppressing the immune system and rendering tumour cells resistant to lysis through binding of the Programmed Death-1 (PD-1) receptor. Overexpression of PD-L1 may allow cancer cells to evade the actions of the host immune system. In renal cell carcinoma, upregulation of PD-L1 has been linked to increased tumour aggressiveness and risk of death. When considered in adjunct with CD8+ tumour-infiltrating lymphocyte density, expression levels of PD-L1 may be a useful predictor of multiple cancer types, including stage III non-small-cell lung cancer, hormone receptor negative breast cancer, and sentinel lymph node melanoma.

References

1. Ostrand-Rosenberg S, et al. J Immunol. 2014; 193:3835-41. 2. Tokito T, et al. Eur J Cancer. 2016; 55:7-14. 3. Park IH, et al. Clin Breast Cancer. 2016; 16:51-8. 4. Kakavand H, et al. Mod Pathol. 2015; 28: 1535-44. 5. Xia B, et al. Immunotherapy. 2016; 8:279-98. 6. Patel SP, et al. Mol Cancer Ther. 2015; 14:847-56. 7. Singh BP, et al. Cancers (Basel). 2016; 8. 8. Chemnitz JM, et al. J Immunol. 2004; 173:945–54. 9. Thompson RH, et al. Proc Natl Acad Sci USA. 2004; 101:17174–9.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC411-100	$125
1 ml, Concentrate	IHC411-1	$570
7 ml, Predilute	IHC411-7	$285
3 Positive Control Slides	IHC411-PC	$150

Designations

IVD: RUO:

PMS2

Clone: IHC412 | **Source:** Mouse Monoclonal | **Positive Control:** Colon

Description

Postmeiotic Segregation Increased 2 (PMS2) is a DNA repair protein involved in mismatch repair. Mutations and deficiencies in the PMS2 gene have been linked to microsatellite instability and malignancies such as hereditary nonpolyposis colorectal cancer and endometrial cancer. Expression levels of the PMS2 protein may be useful as a screening tool for Lynch syndrome after a colorectal cancer diagnosis. Anti-PMS2 is recommended to be used as part of a panel along with antibodies against MSH1, MSH2, and MLH6.

References

1. Cohn DE, et al. Int J Gynecol Cancer. 2008; 18:136-40. 2. Modica I, et al. Am J Surg Pathol. 2007; 31:744-51. 3. Sordet C, et al. Joint Bone Spine. 2006; 73:646-54. 4. Balogh GA, et al. Int J Mol Med. 2006; 18:853-7. 5. Halvarsson B, et al. Fam Cancer. 2006; 5:353-8. 6. Gologan A, et al. Clin Lab Med. 2005; 25:179-96. 7. Lagerstedt Robinson K, et al. J Natl Cancer Inst. 2007; 99:291-9. 8. Hendriks YM, et al. Gastroenterology. 2006; 130:312-22. 9. Truninger K, et al. Gastroenterology. 2005; 128:1160-71. 10. Hampel H, et al. N Engl J Med. 2005; 352:1851-60. 11. Warusavitarne J, et al. Int J Colorectal Dis. 2007; 22:739-48. 12. Gill S, et al. Clin Cancer Res. 2005; 11:6466-71. 13. Modica I, et al. Am J Surg Pathol. 2007; 31:744-51. 14. Shia J, et al. Am J Surg Pathol. 2009; 33:1639-45. 15. Kets CM, et al. Mod Pathol. 2006; 19:1624-30.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC412-100	$230
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7 ml, Predilute	IHC412-7	$185
25 ml, Predilute	IHC412-25	$1,185
3 Positive Control Slides	IHC412-PC	$160

Designations

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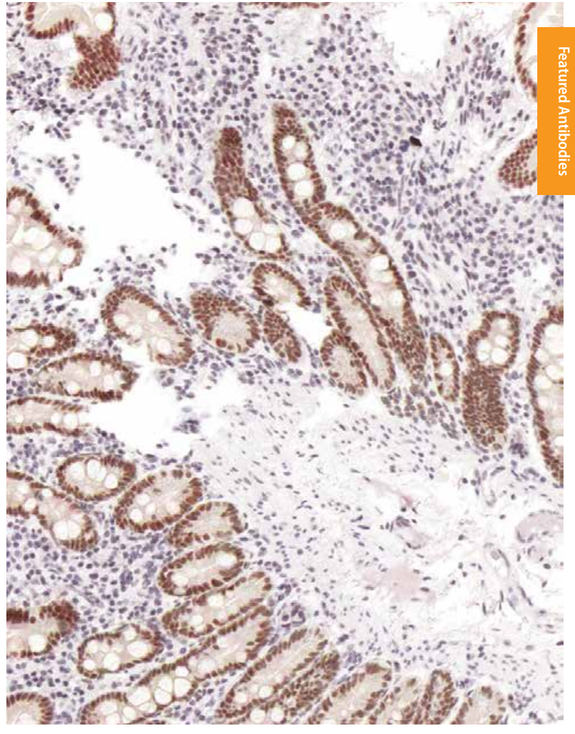
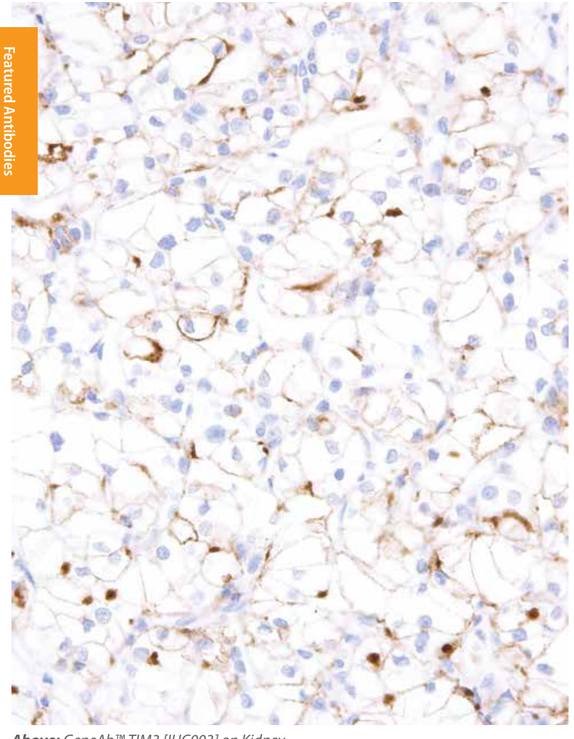


Above: *GeneAb™ PMS2 [IHC412] on Duodenum*

GeneAb™

TIM3

Clone: IHC003 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ TIM3 [IHC003] on Kidney*

Description

T-Cell Immunoglobulin and Mucin-Domain-Containing Molecule-3 (TIM3) is present on T-helper type 1 lymphocytes and other immune cells, including dendritic cells and natural killer cells. TIM3 is overexpressed in CD4+ tumour-infiltrating lymphocytes, including those with non-small cell lung cancer associated with poor prognoses. TIM3 has recently emerged as a potential target for cancer immunotherapy.

References

1. Monney L, et al. Nature. 2002; 415:536-41. 2. Sánchez-Fueyo A, et al. Nat Immunol. 2003; 4:1093-101. 3. Anderson AC. Cancer Immun Res. 2014; 2:393-8. 4. Gao X, et al. PLoS One. 2012; 7:e30676.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC003-100	$210
1 ml, Concentrate	IHC003-1	$980
7 ml, Predilute	IHC003-7	$520
3 Positive Control Slides	IHC003-PC	$275

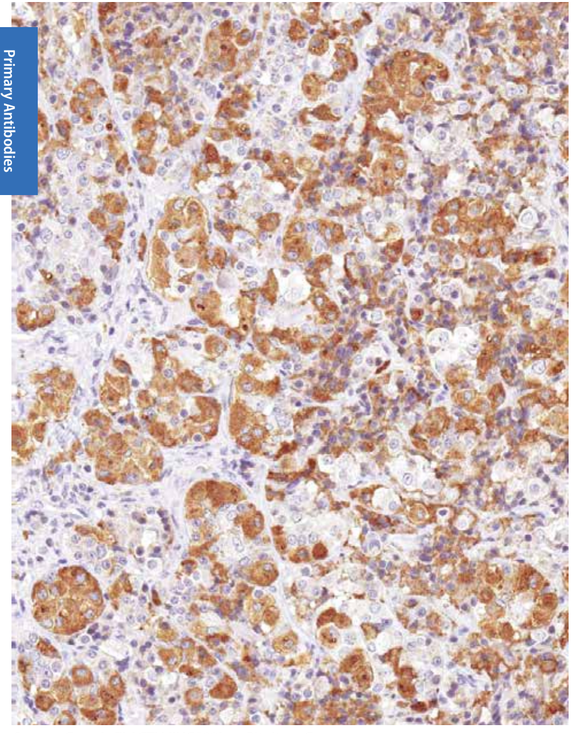
Designations

IVD: RUO:

PRIMARY ANTIBODIES

ACTH

Clone: IHC503 | **Source:** Mouse Monoclonal | **Positive Control:** Pituitary Gland



Above: *GeneAb™ ACTH [IHC503] on Pituitary Gland*

Description

Adrenocorticotropic Hormone (ACTH or Corticotropin) is a peptidic hormone synthesized in the anterior pituitary gland. The primary application of Anti-ACTH is in the identification of pituitary tumours and the study of pituitary disease. The Anti-ACTH antibody reacts with ACTH-producing cells (corticotrophs). It may also cause paraneoplastic syndromes by secreting ACTH from other tumours, such as some small cell carcinomas of the lung.

References

1. Pizarro CB, et al. Braz J Med Biol Res. 2004; 37:235-43. 2. Viacava P, et al. J Endocrinol Invest. 2003; 26:23-8. 3. Kageyama K, et al. Am J Med Sci. 2002; 324:326-30. 4. Fan X, et al. J Histochem Cytochem. 2002; 50:1509-16.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC503-100	$100
1 ml, Concentrate	IHC503-1	$340
7 ml, Predilute	IHC503-7	$195
3 Positive Control Slides	IHC503-PC	$100

Designations

IVD: RUO:

Actin, Muscle Specific

Clone: IHC505 | **Source:** Mouse Monoclonal | **Positive Control:** Skeletal Muscle

Description

Actin is part of the cytoskeletal system of every cell type. It can be classified based on isoelectric points as alpha, beta, and gamma. **Muscle Specific Actin** includes those of the alpha and gamma isotypes. Skeletal, smooth, and cardiac muscle cells will all stain positively with Anti-Muscle Specific Actin, but mesenchymal cells, not including myoepithelium, will stain negatively. Normal and neoplastic non-muscle cells, including vascular endothelial and connective tissues, carcinomas, melanomas, and lymphomas, will also be negative for muscle specific actin. The use of Anti-Muscle Specific Actin in concert with Anti-Smooth Muscle Actin can allow for differentiation between rhabdomyosarcoma and leiomyosarcoma, as muscle specific actin is found in rhabdomyoblasts, while smooth muscle actin is found in leiomyosarcomas.

References

1. Schmidt RA, et al. Am J Pathol. 1988; 131:19-28. 2. Azumi N, et al. Mod Pathol. 1988; 1:469-74. 3. Rangdaeng L, et al. Am J Clin Pathol. 1991; 96:32-45. 4. Tsukada T, et al. Am J Pathol. 1987; 127:389-402.

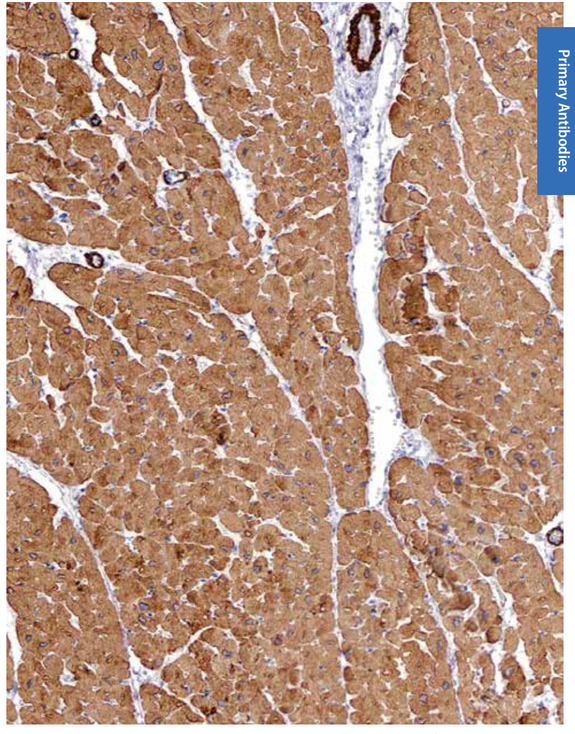
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC505-100	$110
1 ml, Concentrate	IHC505-1	$255
7 ml, Predilute	IHC505-7	$145
3 Positive Control Slides	IHC505-PC	$115

Designations

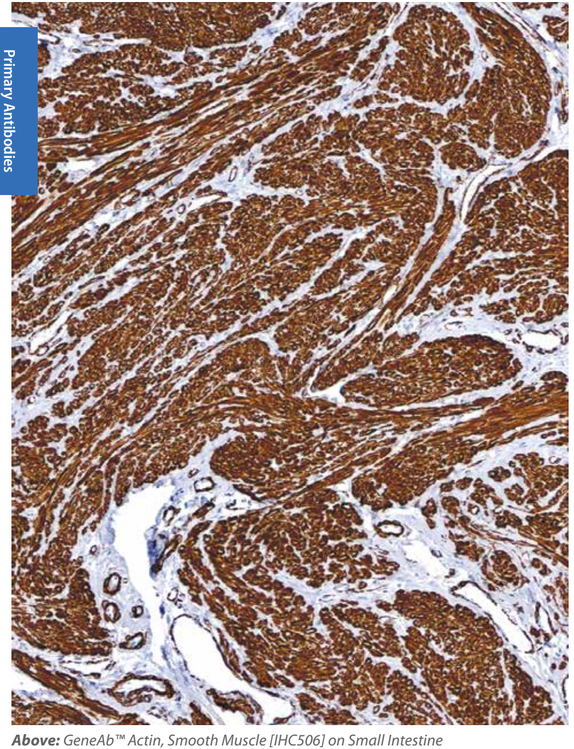
IVD: RUO:



Above: *GeneAb™ Actin, Muscle Specific [IHC505] on Heart*

Actin, Smooth Muscle

Clone: IHC506 | **Source:** Mouse Monoclonal | **Positive Control:** Appendix, Uterus, Vessel Wall



Above: *GeneAb™ Actin, Smooth Muscle [IHC506] on Small Intestine*

Description

Actin is part of the cytoskeletal system of all cell types. **Smooth Muscle Actin** is found in myofibroblasts and myoepithelium, but not in cardiac or skeletal muscles. Labeling of smooth muscle actin in concert with muscle specific actin staining can allow for differentiation between rhabdomyosarcoma and leiomyosarcoma, as muscle specific actin is found in rhabdomyoblasts, while smooth muscle actin is found in leiomyosarcomas.

References

1. Cooke PH. J Cell Biol. 1976; 68:539-56. 2. Gown AM, et al. J Cell Biol. 1985; 100:807-13. 3. Lazarides E. J Histochem Cytochem. 1975; 223:507-28.

Reference Panels

pg.

- Soft Tissue.....302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC506-100	$120
1 ml, Concentrate	IHC506-1	$255
7 ml, Predilute	IHC506-7	$145
25 ml, Predilute	IHC506-25	$405
3 Positive Control Slides	IHC506-PC	$115

Designations

IVD: RUO:

AEG1

Clone: IHC507 | **Source:** Mouse Monoclonal | **Positive Control:** Glioblastoma

Description

Astrocyte Elevated Gene-1 Protein (AEG1) is an oncoprotein involved in many hallmarks of aggressive cancer progression such as apoptosis evasion, cell movement, transformation, invasion, angiogenesis, metastasis, and drug resistance. AEG1 plays an important role in anchorage-independent growth of cancer cells, which allow for tumour cell expansions. It is also implicated in diverse physiological and pathological processes, such as development, inflammation, neurodegeneration, migraine, and Huntington's disease. AEG1 is found to be overexpressed in melanoma, malignant glioma, and breast cancer, and is associated with poor clinical outcomes in hepatocellular carcinoma. The protein is a potential therapeutic target for reducing metastasis and enhancing chemotherapy.

References

1. Brown DM, et al. Cancer Cell. 2004; 5:365-74. 2. Yoo BK, et al. J Clin Invest. 2009; 119:465-77. 3. Hu G, et al. Cancer Cell. 2009; 15:9-20. 4. Yoo BK, et al. Pharmacol Ther. 2011; 130:1-8.

Reference Panels

pg.

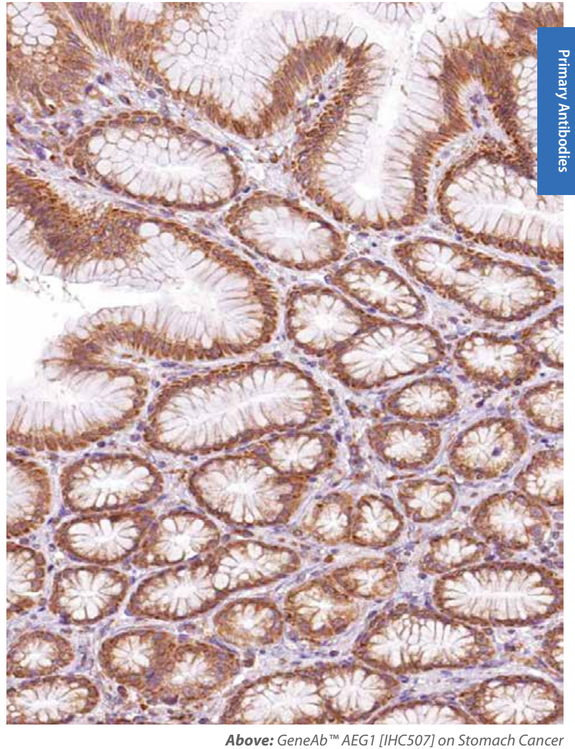
- Neuropathology.....299

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC507-100	$210
1 ml, Concentrate	IHC507-1	$980
7 ml, Predilute	IHC507-7	$520
3 Positive Control Slides	IHC507-PC	$275

Designations

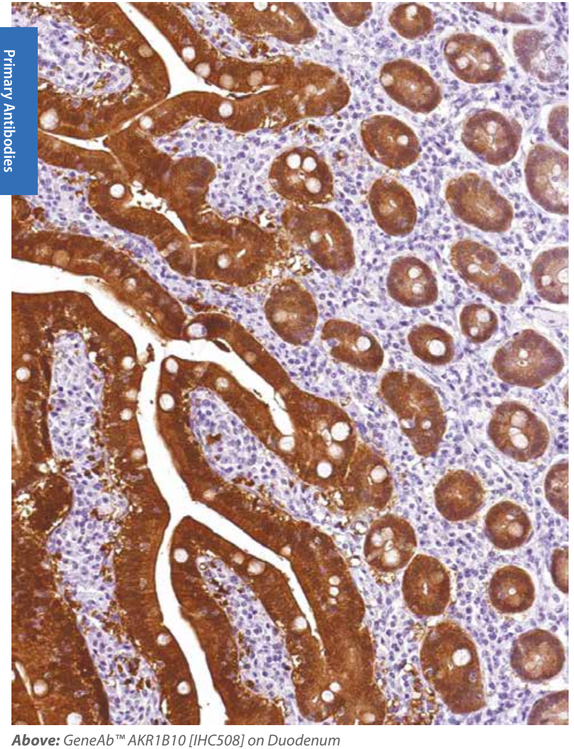
IVD: RUO:



Above: *GeneAb™ AEG1 [IHC507] on Stomach Cancer*

AKR1B10

Clone: IHC508 | **Source:** Mouse Monoclonal | **Positive Control:** Hepatocellular Carcinoma



Above: *GeneAb™ AKR1B10 [IHC508] on Duodenum*

Description

Aldo-Keto Reductase Family 1 Member B10 (AKR1B10) is an enzyme of the aldo-keto reductase superfamily, and catalyzes the reduction of aliphatic and aromatic aldehydes. AKR1B10 is commonly expressed in adrenal glands, the small intestine, and colon tissues. AKR1B10 staining is useful in the recognition of liver carcinogenesis.

References

1. Hyndman DJ, et al. Biochim Biophys Acta. 1998; 1399: 198-202. 2. Cao D, et al. J Biol Chem. 1998; 273:11429-35. 3. Scuric Z, et al. Heptology. 1998; 27: 943-50.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC508-100	$210
1 ml, Concentrate	IHC508-1	$980
7 ml, Predilute	IHC508-7	$520
3 Positive Control Slides	IHC508-PC	$275

Designations

IVD: RUO:

ALK

Clone: IHC509 | **Source:** Mouse Monoclonal | **Positive Control:** Anaplastic Large Cell Lymphoma

Description

Anaplastic Lymphoma Kinase (ALK) is a receptor tyrosine kinase which plays a role in brain and nervous system development. ALK is typically expressed at low levels in regions of the developing central and peripheral nervous system, such as the neonatal brain and spinal cord. The most common genetic alterations of this gene are chromosomal translocations, which result in multiple ALK fusion proteins that are involved in tumourigenesis, as in the case of anaplastic large cell lymphoma (ALCL), lung adenocarcinoma, and inflammatory myofibroblastic tumours. Aberrant ALK expression is also found in other tumours such as familial neuroblastoma, non-small cell lung carcinoma (NSCLC), and brain cancers.

References

1. Iwahara T, et al. Oncogene. 1997; 14: 439-49. 2. Falini B, et al. Am J Pathol. 1998; 153:875-86. 3. Mino-Kenudson M, et al. Clin Cancer Res. 2010; 16:1561-71. 4. Paik JH, et al. J Thorac Oncol. 2011; 6:466-72. 5. Mossé YP, et al. Nature. 2008; 455:930-5. 6. Kim H, et al. J Thorac Oncol. 2011; 6:1359-66.

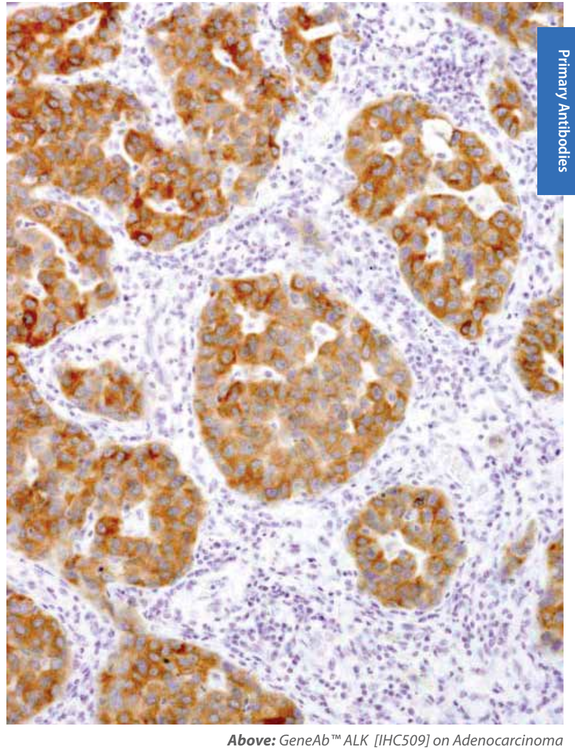
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC509-100	$160
1 ml, Concentrate	IHC509-1	$880
7 ml, Predilute	IHC509-7	$390
3 Positive Control Slides	IHC509-PC	$205

Designations

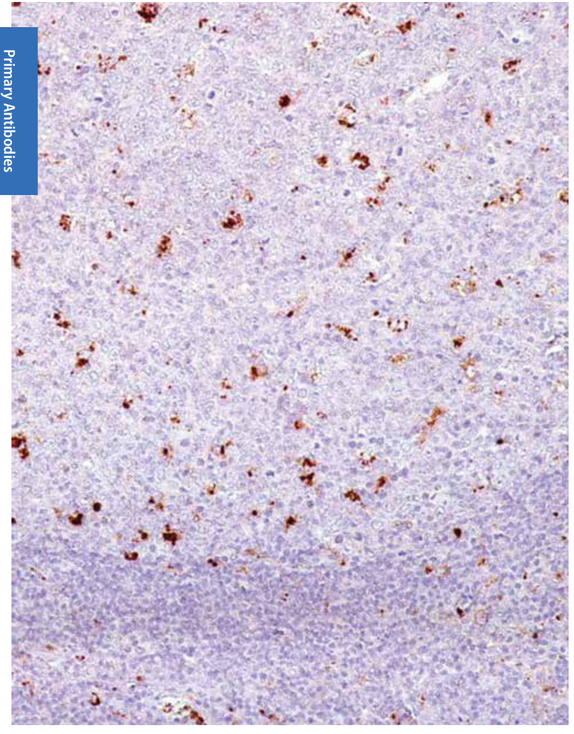
IVD: RUO:



Above: *GeneAb™ ALK [IHC509] on Adenocarcinoma*

α1-Antichymotrypsin

Clone: IHC501 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ α1-Antichymotrypsin [IHC501] on Tonsil*

Description

α1-Antichymotrypsin (AACT or ACT) is a protease inhibitor that is proposed to act as an anti-inflammatory agent and control immunologic functions. AACT is expressed in mast cells, endothelial cells, and breast and intestinal epithelial cells. Other studies have also found AACT overexpression in neural tissues of those affected by Alzheimer's disease. The major application of AACT labeling is to identify histiocytes and histiocyte-derived cancer cells. Some reports have found acinar pancreatic and salivary cancers to be stained by AACT.

References

1. Niki T, et al. Gen Diagn Pathol. 1995; 141: 21-7. 2. Padmanabhan J. Brain. 2006; 129: 3020-34.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC501-100	$100
1 ml, Concentrate	IHC501-1	$340
7 ml, Predilute	IHC501-7	$195
3 Positive Control Slides	IHC501-PC	$100

Designations

IVD: RUO:

α1-Antitrypsin

Clone: IHC502 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

α1-Antitrypsin (A1AT or AAT) is a protease inhibitor synthesized by the liver which plays a role in acute inflammation. The application of A1AT staining is to identify A1AT deficiency, as well as hepatic cancers and benign and malignant yolk sac carcinomas. Some reports have found A1AT staining to be useful for recognizing benign and malignant histiocytic tumours, and screening patients with cryptogenic cirrhosis, liver disease, or portal fibrosis of unknown etiology.

References

1. Clausen PP. Acta Pathol Microbiol Scand A. 1980; 88:299-306.

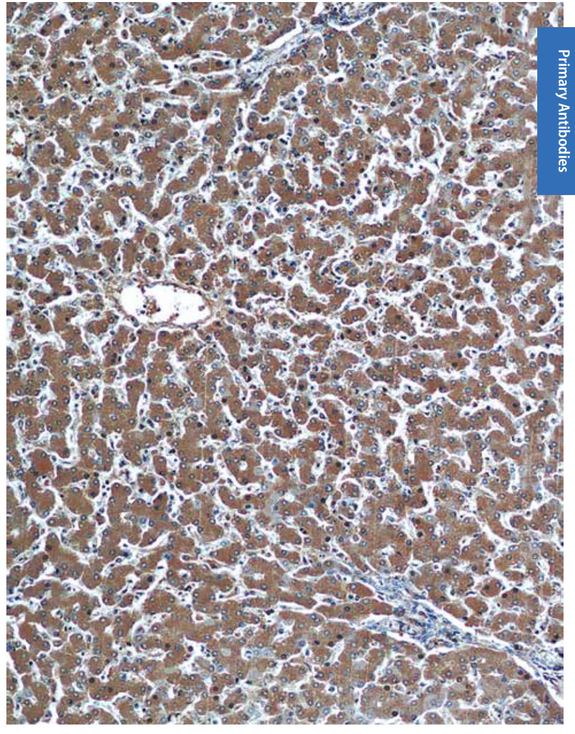
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC502-100	$100
1 ml, Concentrate	IHC502-1	$340
7 ml, Predilute	IHC502-7	$195
3 Positive Control Slides	IHC502-PC	$100

Designations

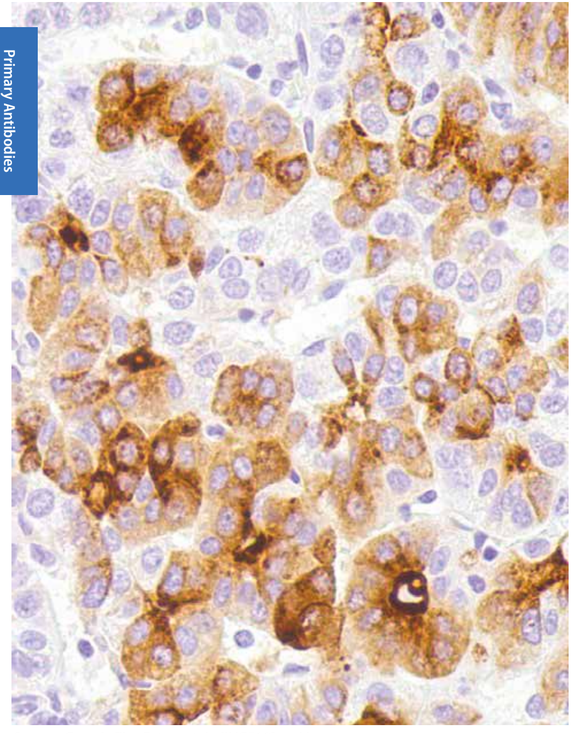
IVD: RUO:



Above: *GeneAb™ α1-Antitrypsin [IHC502] on Liver*

α-Fetoprotein

Clone: IHC510 | **Source:** Mouse Monoclonal | **Positive Control:** Fetal Liver



Above: *GeneAb™ α-Fetoprotein [IHC510] on Liver*

Description

α-Fetoprotein (AFP) is a major plasma glycoprotein seen in hepatocytes of fetal liver and in hepatoma. Elevated levels of AFP in adult serum may be indicative of hepatocellular carcinoma, hepatoid adenocarcinoma, germ cell tumours, or yolk sac tumours. In hepatocellular carcinoma, AFP expression usually indicates malignancy in a hepatocellular nodule and hepatic histogenesis of a malignancy.

References

1. Mizejewski GJ. Exp Biol Med. 2001; 226:377-408. 2. Peyrol S, et al. Digestion. 1978; 18:351-70. 3. Caruso RA. Eur J Basic Appl Histochem. 1991; 35:203-9. 4. Tsung SH. Arch Pathol Lab Med. 1977; 101:572-4. 5. Roth LM, et al. Cancer. 1976; 37:812-20.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC510-100	$110
1 ml, Concentrate	IHC510-1	$290
7 ml, Predilute	IHC510-7	$205
3 Positive Control Slides	IHC510-PC	$160

Designations

IVD: RUO:

Androgen Receptor

Clone: IHC511 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate Cancer

Description

Androgen Receptor (AR) is a transcriptional regulator with a broad array of functions. This marker is clinically significant in the understanding of tumour progression and tumour aggressiveness. The detection of AR by immunohistochemical staining is important for diagnosis of all types of prostate carcinoma, including both therapy-responsive and therapy-unresponsive disease states. Co-testing with AR and CK20 is used for differential diagnosis of desmoplastic trichoepithelioma (DTE) [CK20+/AR-], morpheaform basal cell carcinoma (BCC) [CK20-/AR+], and microcystic adnexal carcinoma (MAC) [CK20-/AR-].

References

1. Cordon-Cardo C, et al. J Clin Invest. 2007; 117:1876-83. 2. Gonzalez LO, et al. Histopathology. 2007; 50:866-74.

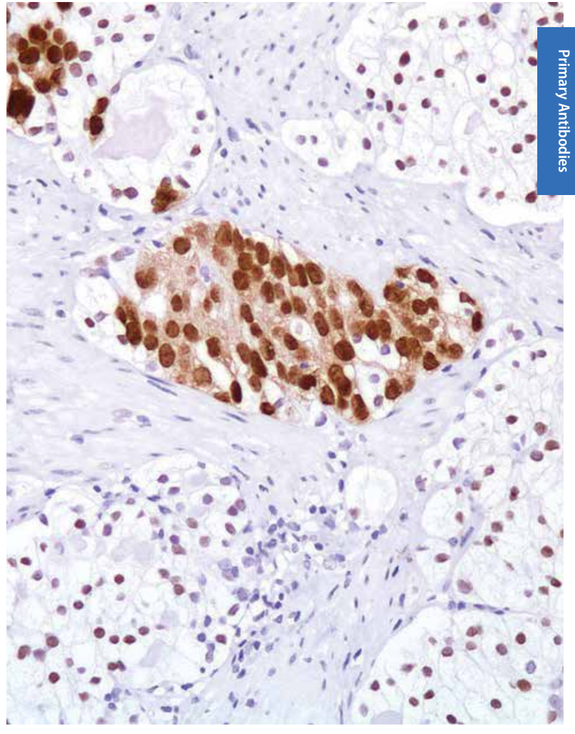
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC511-100	$150
1 ml, Concentrate	IHC511-1	$630
7 ml, Predilute	IHC511-7	$360
3 Positive Control Slides	IHC511-PC	$115

Designations

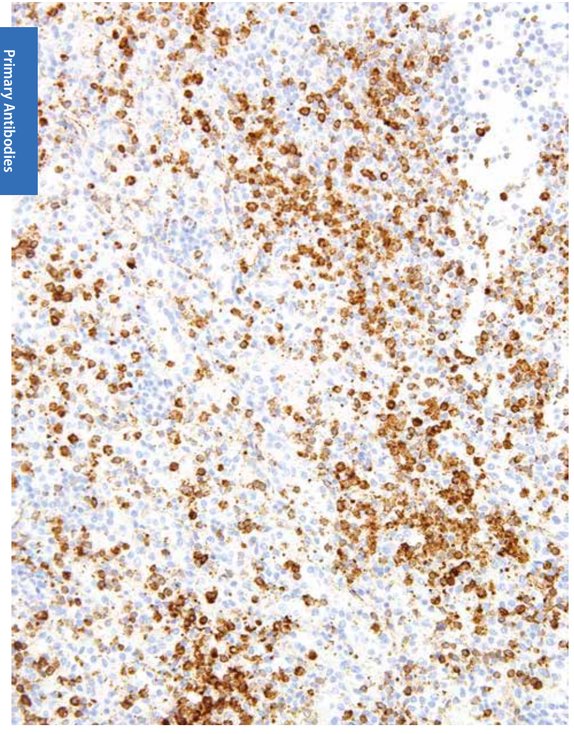
IVD: RUO:



Above: *GeneAb™ Androgen Receptor [IHC511] on Prostate Cancer*

Annexin A1

Clone: IHC512 | **Source:** Mouse Monoclonal | **Positive Control:** Hairy Cell Leukemia



Above: *GeneAb™ Annexin A1 [IHC512] on Spleen*

Description

Annexin A1 (ANXA1) is a membrane protein that plays a role in innate and adaptive immunity by controlling the biosynthesis of inflammation, prostaglandins, and leukotriene mediators. This target is overexpressed in 97% of all samples from patients with hairy cell leukemia, and is absent in other B-cell lymphomas. High ANXA1 expression is frequently associated with advanced stage esophageal and esophagogastric junction adenocarcinoma, and is also linked to advanced and metastatic disease states.

References

1. Tiacci E, et al. N Eng J Med. 2011; 364:2305-15. 2. Wang K, et al. Clin Cancer Res. 2006; 12:4598-604.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC512-100	$135
1 ml, Concentrate	IHC512-1	$355
7 ml, Predilute	IHC512-7	$310
3 Positive Control Slides	IHC512-PC	$160

Designations

IVD: RUO:

Arginase-1

Clone: IHC400 | **Source:** Mouse Monoclonal | **Positive Control:** Liver

Description

Arginase-1, encoded by the ARG1 gene, is a cytosolic metalloenzyme expressed predominantly in hepatocytes. Arginase-1 plays a key role in the urea cycle by catalyzing the hydrolysis of arginine to ornithine and urea. Argininemia is an inherited autosomal recessive disorder characterized by a buildup of arginine and ammonia in the blood. Anti-Arginase-1 is highly specific for hepatocytes, and is therefore a sensitive and specific marker of benign and malignant hepatic tumours.

References

1. Morris SM Jr. Br J Pharmacol. 2009; 157:922-30. 2. Uchino T, et al. Human Genetics. 2009; 96:255-60. 3. Yan BC, et al. Am J Surg Pathol. 2010; 34:1147-54.

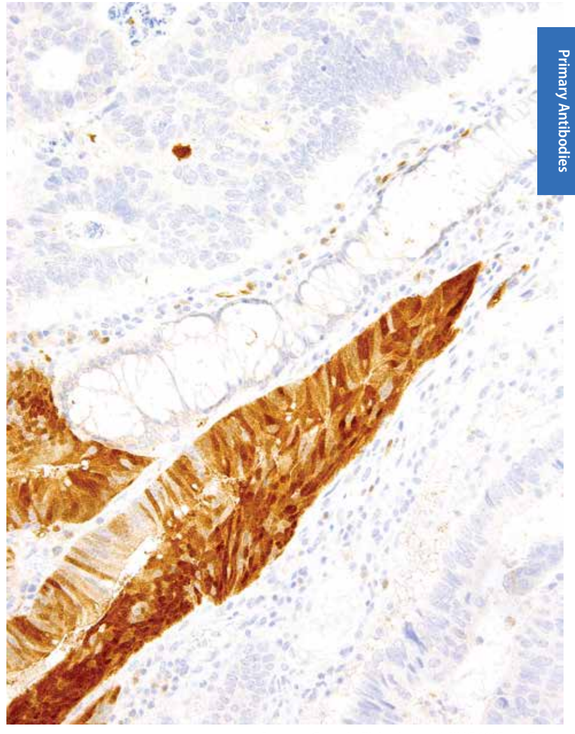
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC400-100	$135
1 ml, Concentrate	IHC400-1	$560
7 ml, Predilute	IHC400-7	$310
25 ml, Predilute	IHC400-25	$1,395
3 Positive Control Slides	IHC400-PC	$155

Designations

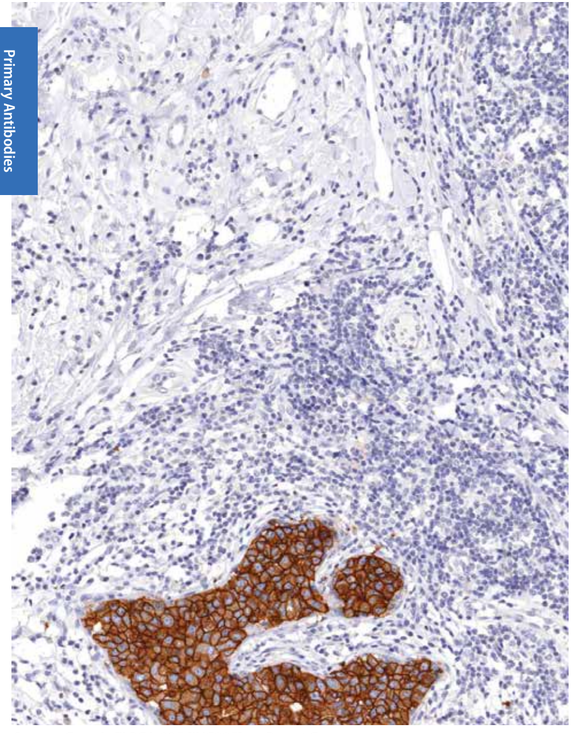
IVD: RUO:



Above: *GeneAb™ Arginase-1 [IHC400] on Colon*

BCA-225

Clone: IHC225 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma



Above: *GeneAb™ BCA-225 [IHC225] on Breast Cancer*

Description

BCA-225 is a unique glycoprotein linked to breast carcinoma. Unlike other antibodies against breast carcinoma, Anti-BCA-225 does not stain benign or malignant pancreas, stomach, colon, prostate, thyroid, parotid, or liver tissues, but can stain lung, endometrium, and ovarian adenocarcinomas.

References

1. Ceriani RL. Boston, Martinus, Nijhoff. 1985. 2. Loy TS, et al. Am J Clin Pathol. 1991; 96:326-9. 3. Ma CK, et al. Am J Clin Pathol. 1993; 99:551-7.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC225-100	$155
1 ml, Concentrate	IHC225-1	$510
7 ml, Predilute	IHC225-7	$425
3 Positive Control Slides	IHC225-PC	$115

Designations

IVD: RUO:

BCL2

Clone: IHC514 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

B-Cell Lymphoma 2 (BCL2) is involved in regulation of cell apoptosis by controlling mitochondrial permeability and release of cytochrome c. It also has critical roles in normal cell physiology related to neuronal activity, autophagy, calcium handling, mitochondrial dynamics, and energetics. BCL2 overexpression has been shown to promote cell survival by suppressing apoptosis, and is found to be correlated with poor disease prognosis in breast, prostate, ovarian, endometrial, and colon cancers. In follicular lymphoma, Anti-BCL2 reacts negatively with germinal centers and positively with neoplastic follicles. In lymphoid lesions, BCL2 staining is useful for distinguishing reactive and neoplastic follicular proliferations, and for identifying minimal residual disease in the bone marrow of follicular lymphoma patients. BCL2 is now a useful target of human cancer therapy.

References

1. Hardwick JM, et al. Cold Spring Harb Perspect Biol. 2013; 5:a008722. 2. Vaux DL, et al. Nature. 1988; 335:440-2.

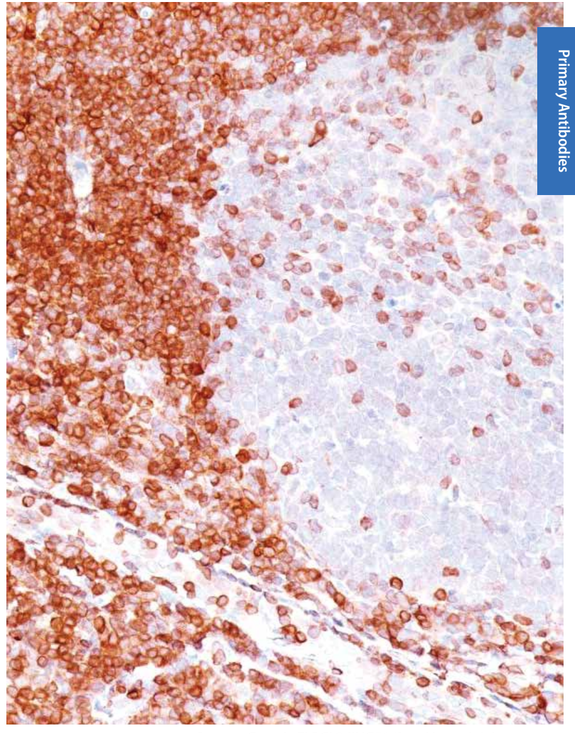
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC514-100	$120
1 ml, Concentrate	IHC514-1	$255
7 ml, Predilute	IHC514-7	$145
25 ml, Predilute	IHC514-25	$410
3 Positive Control Slides	IHC514-PC	$115

Designations

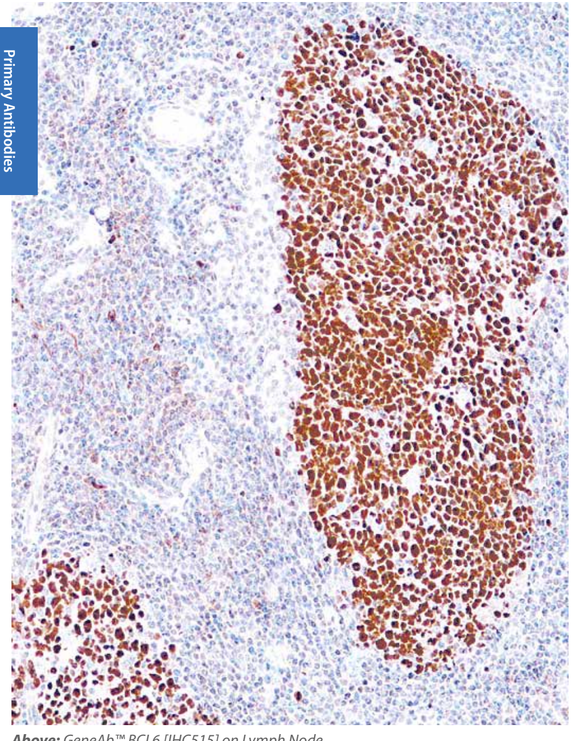
IVD: RUO:



Above: *GeneAb™ BCL2 [IHC514] on Hodgkin's Lymphoma*

BCL6

Clone: IHC515 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ BCL6 [IHC515] on Lymph Node*

Description

B-Cell Lymphoma 6 (BCL6) is a zinc finger transcription factor. BCL6 expression is seen in follicular lymphomas, Burkitt's lymphoma, angioimmunoblastic T-cell lymphoma, and nodular lymphocyte-predominant Hodgkin's lymphoma. Together with BCL2, BCL6 is often used to distinguish neoplastic follicles from those in benign hyperplasia, and to aid in the classification of mantle cell lymphomas and nodular lymphocyte-predominant Hodgkin's lymphoma.

References

1. Ye BH, et al. Science. 1993; 262:747-50. 2. Johnston RJ, et al. Science. 2009; 325:1006-10. 3. Dogan A, et al. Am J Surg Pathol. 2000; 24:846-52. 4. Falini B, et al. Blood. 1996; 87:465-71. 5. Kraus MD, et al. Am J Surg Pathol. 2000; 24:1068-78.

Reference Panels

pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC515-100	$100
1 ml, Concentrate	IHC515-1	$575
7 ml, Predilute	IHC515-7	$245
25 ml, Predilute	IHC515-25	$1,330
3 Positive Control Slides	IHC515-PC	$115

Designations

IVD: RUO:

BCL10

Clone: IHC513 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, MALT Lymphoma

Description

B-Cell Lymphoma/Leukemia 10 (BCL10) is an apoptotic regulatory molecule. It is an important marker for mucosa-associated lymphoid tissue (MALT) lymphoma and can be utilized in the classification of lymphomas.

References

1. Ye H, et al. Am J Pathol. 2000; 157:1147-54. 2. Willis TG, et al. Cell. 1999; 96:35-45.

Reference Panels

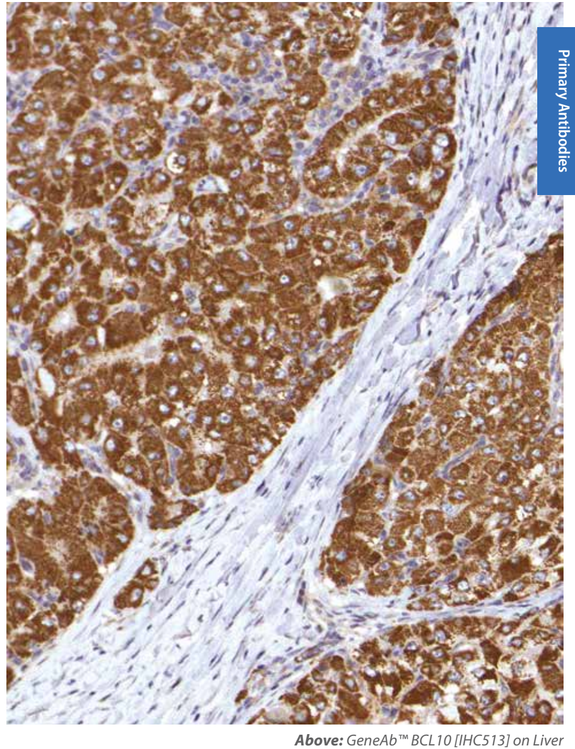
pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC513-100	$125
1 ml, Concentrate	IHC513-1	$485
7 ml, Predilute	IHC513-7	$260
3 Positive Control Slides	IHC513-PC	$140

Designations

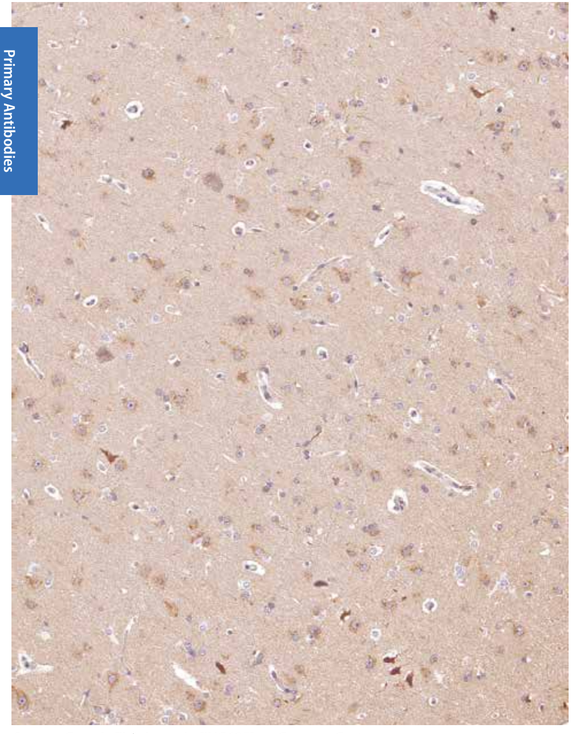
IVD: RUO:



Above: *GeneAb™ BCL10 [IHC513] on Liver*

β-Amyloid

Clone: IHC695 | **Source:** Mouse Monoclonal | **Positive Control:** Cerebral Cortex



Above: *GeneAb™ β-Amyloid [IHC695] on Cerebral Cortex*

Description

β-Amyloid, also known as **Aβ,** is a peptide derived from Amyloid Beta Precursor Protein (APP) which is known to form the protein basis of plaques clinically linked to Alzheimer's disease (AD). These extracellular plaque deposits of β-Amyloid are one of two pathologies that have been identified as being critical for diagnosis of AD, with the other being neurofibrillary tangles of the Tau protein. Anti-β-Amyloid has been used for the detection of APP and Aβ deposits in human brain tissue.

References

1. Murphy MP, LeVine H 3rd. J Alzheimers Dis. 2010; 19:311-23. 2. Sisodia DD, Price DL. FASEB J. 1995; 9:366-70. 3. Carter J, Lippa CF. Curr Mol Med. 2001; 1:733-7. 4. Bloom GS. JAMA Neurol. 2014; 71:505-8. 5. Aho L, et al. J Alzheimers Dis. 2010; 20:1015-28.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC695-100	$185
1 ml, Concentrate	IHC695-1	$765
7 ml, Predilute	IHC695-7	$415
3 Positive Control Slides	IHC695-PC	$125

Designations

IVD: RUO:

β-Catenin

Clone: IHC516 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Fibromatosis

Description

β-Catenin is a cytoplasmic protein with a dual role in cell-cell adhesion and gene expression. It is normally present in the submembranous regions of the cell, and nuclear accumulation of β-Catenin has been found to occur as a result of gene mutations. This accumulation is useful in identifying desmoid tumours (fibromatosis) in the abdomen and breast, and is therefore useful in differentiating other cell neoplasms in these regions.

References

1. Abraham S, et al. Hum Pathol. 2002; 33:39-46. 2. Montgomery E, et al. Am J Surg Pathol. 2002; 26:1296-301.

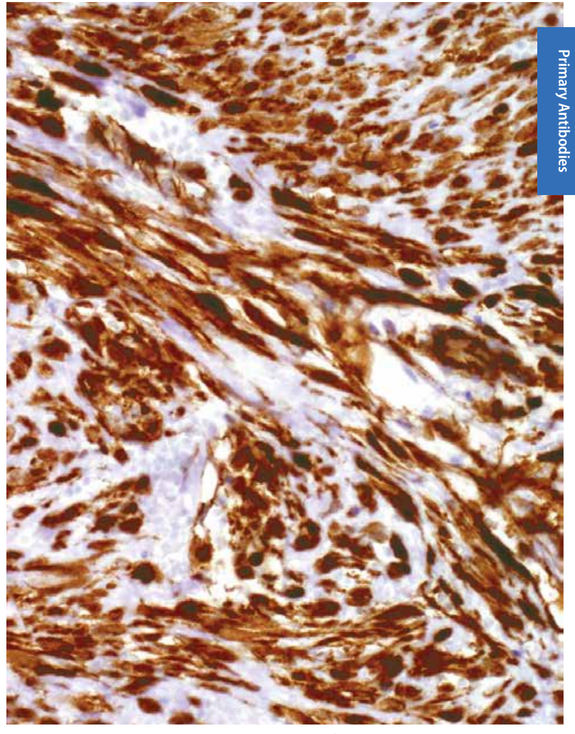
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC516-100	$90
1 ml, Concentrate	IHC516-1	$315
7 ml, Predilute	IHC516-7	$180
3 Positive Control Slides	IHC516-PC	$160

Designations

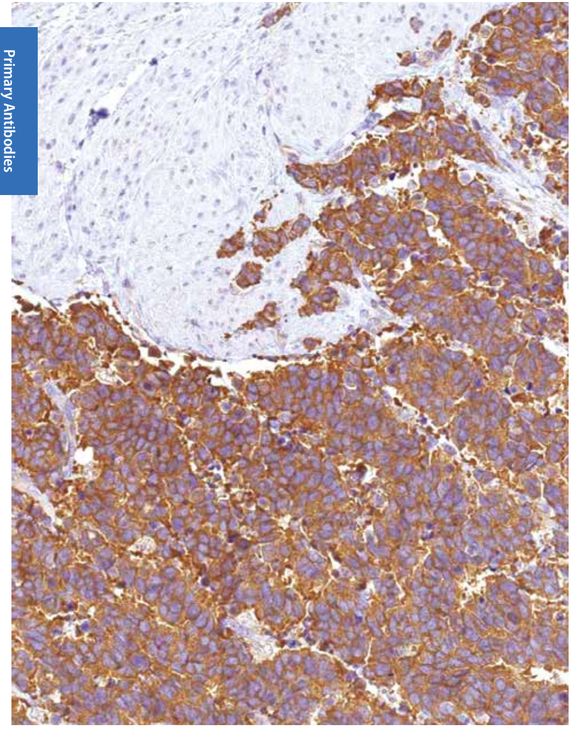
IVD: RUO:



Above: *GeneAb™ β-Catenin [IHC516] on Breast Cancer*

β-Tubulin III

Clone: IHC686 | **Source:** Mouse Monoclonal | **Positive Control:** Skin, Lung



***Above:** GeneAb™ β-Tubulin III [IHC686] on Carcinoid Tumour*

Description

β-Tubulin III is a component of microtubules, and Anti-β-Tubulin III stains neurons, but not glial cells. Anti-β-Tubulin III is useful in the prognosis of various cancers including breast, colorectal, gastric, lung, and ovarian carcinomas, as β-Tubulin III has been correlated with chemotherapy response, patient survival, and tumour aggressiveness.

References

1. Ferrandina G, et al. Clin Cancer Res. 2006; 12:2774-9. 2. Karki R, et al. Expert Opin Ther Targets. 2013; 17:461-72.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC686-100	$210
1 ml, Concentrate	IHC686-1	$980
7 ml, Predilute	IHC686-7	$520
3 Positive Control Slides	IHC686-PC	$275

Designations

IVD: RUO:

BG8, Lewis^{y}

Clone: IHC517 | **Source:** Mouse Monoclonal | **Positive Control:** Lung Adenocarcinoma

Description

BG8 Lewis^{y}, also known as **Lewis^{y} Blood Antigen** or simply **BG8,** is a blood group antigen that has been identified in many studies as a potential marker for differentiation between pulmonary adenocarcinoma (PACA) and epithelioid mesothelioma (EM). It has been reported that sensitivity of non-mesothelial antigens for adenocarcinoma is organ-dependent. When attempting to differentiate epithelioid mesothelioma from adenocarcinoma, BG8 Lewis^{y} performed at a sensitivity of 98% in the breast cancer group, and 100% in the lung cancer group.

References

1. Sheibani K, et al. Am J Surg Pathol. 1991; 15:779-84. 2. Marchevsky AM, et al. Appl Immunohistochem Mol Morphol. 2007; 15:140-4. 3. Davidson B, et al. Virchows Arch. 1999; 435:43-9. 4. Ordonez NG. Am J Surg Pathol. 2003; 27:1031-51. 5. Ordonez NG. Am J Surg Pathol. 2000; 24: 598-606. 6. Ordonez NG. Am J Clin Pathol. 1998; 109:85-9. 7. King JE, et al. Histopathology. 2006; 48:223-32. 8. Kao SC, et al. Pathology. 2011; 43:313-7. 9. Yaziji H, et al. Mod Pathol. 2006; 19:514-23.

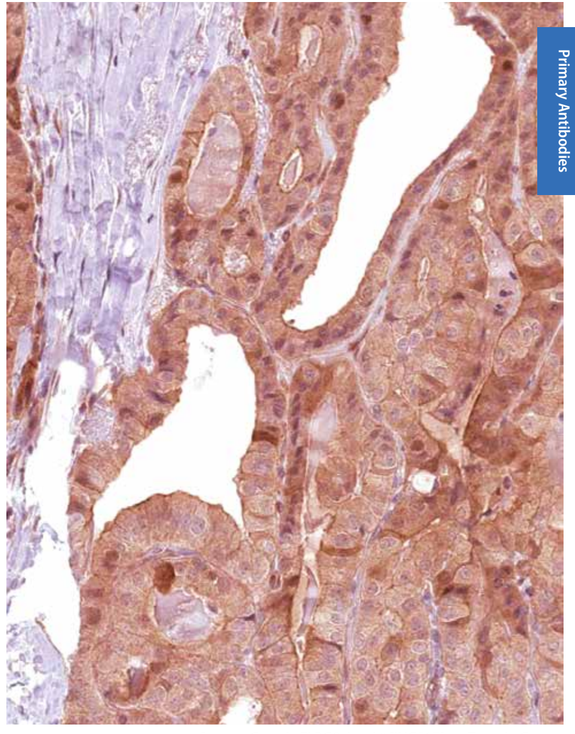
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC517-100	$165
1 ml, Concentrate	IHC517-1	$560
7 ml, Predilute	IHC517-7	$325
3 Positive Control Slides	IHC517-PC	$115

Designations

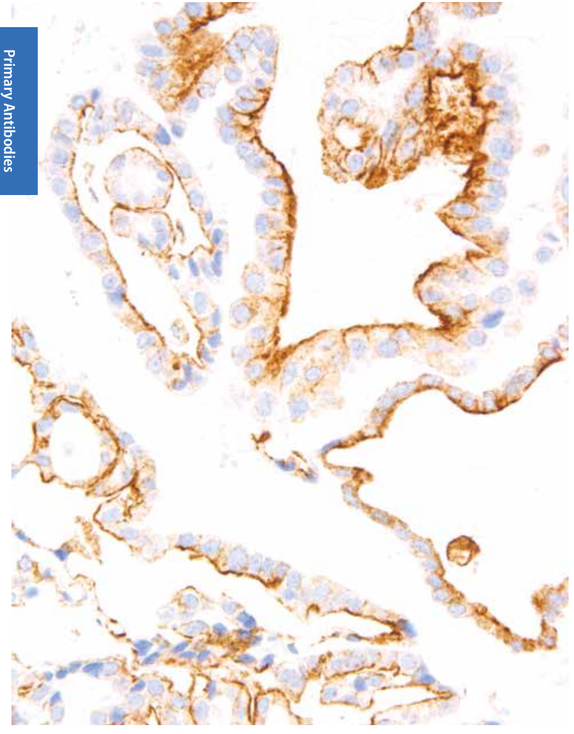
IVD: RUO:



***Above:** GeneAb™ BG8, Lewis^{y} [IHC517] on Thyroid Cancer*

BRAF V600E

Clone: IHC600 | **Source:** Mouse Monoclonal | **Positive Control:** Colorectal Adenocarcinoma, Thyroid Papillary Carcinoma with the BRAF V600E Mutation



Above: *GeneAb™ BRAF V600E [IHC600] on Thyroid Gland*

Description

Serine/Threonine-Protein Kinase B-Raf (BRAF) is a cytoplasmic serine-threonine kinase of the RAF family, which mediates downstream cellular responses to growth signals through the mitogen-activated protein kinase (MAPK) signaling pathway. Oncogenic mutations in the BRAF gene, 80% of which are a single V600E substitution within the kinase domain, constitutively activate the MAPK signaling pathway and result in increased cell proliferation and apoptosis resistance. The V600E mutation is observed in colorectal cancer, non-Hodgkin's lymphoma, papillary thyroid carcinoma, malignant melanoma, non-small-cell lung carcinoma, and lung adenocarcinoma. BRAF V600E is therefore an important immunohistochemical marker for tumour diagnosis and prognosis.

References

1. Li WQ, et al. Mol Cancer. 2006; 5:2. 2. Davies H, et al. Nature. 2002; 417:949-54. 3. Benlloch S, et al. J Mol Diagn. 2006; 8:540-3. 4. Gear H, et al. Invest Ophthalmol Vis Sci. 2006; 45:2484-8. 5. Capper D, et al. Acta Neuropathol. 2011; 122:11-19.

Reference Panels

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Dermatopathology	279
Genitourinary (GU)	284

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC600-100	$210
1 ml, Concentrate	IHC600-1	$980
7 ml, Predilute	IHC600-7	$520
3 Positive Control Slides	IHC600-PC	$275

Designations

IVD: RUO:

BRCA1

Clone: IHC401 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma

Description

BRCA1 (Breast-Cancer Susceptibility Gene 1) is a tumour suppressor protein involved in a number of cellular processes, including DNA repair and transcriptional regulation in response to DNA damage. Mutations and deficiencies in BRCA1 have been linked to poor prognosis in breast cancer; therefore, Anti-BRCA1 is used for rapid screening of the marker.

References

1. Ribeiro-Silva A, et al. Histopathology. 2005: 47:458-66. 2. Ansquer Y, et al. Anticancer Res. 2005: 25:4535-41. 3. Kurebayashi J, et al. Anticancer Res. 2006: 26:695-701. 4. Jarvis EM, et al. Cancer Genet Cytogenet. 1998: 101:109-15. 5. Yoshida K, et al. Cancer Sci. 2004; 95:866-71.

Reference Panels

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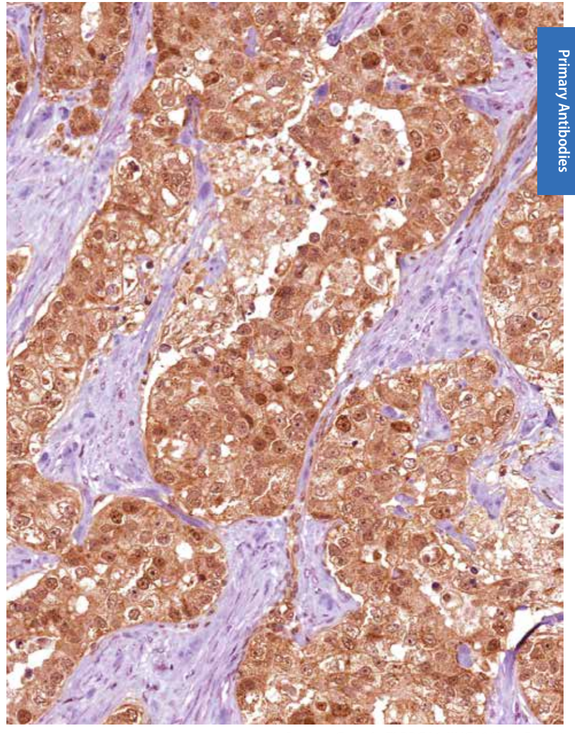
Breast/Gynecological	277
Cytopathology	n/a

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC401-100	$135
1 ml, Concentrate	IHC401-1	$510
7 ml, Predilute	IHC401-7	$270
3 Positive Control Slides	IHC401-PC	$145

Designations

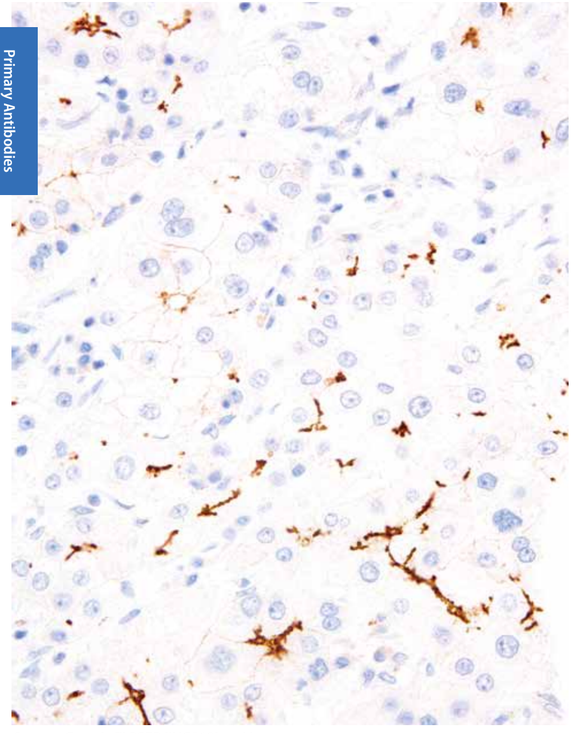
IVD: RUO:



Above: *GeneAb™ BRCA1 [IHC401] on Breast*

BSEP

Clone: IHC518 | **Source:** Mouse Monoclonal | **Positive Control:** Liver



Above: *GeneAb™ BSEP [IHC518] on Liver*

Description

Bile Salt Export Pump (BSEP) is a member of the ATP-binding cassette (ABC) transporters, and mediates the transport of bile acid, taurocholate, and other cholate conjugates across the hepatocyte canalicular membrane into the canaliculus. BSEP is associated with progressive familial intrahepatic cholestasis type 2 (PFIC2) and benign recurrent intrahepatic cholestasis type 2 (BRIC2). PFIC2 caused by mutations in the BSEP gene increases the risk of hepatocellular carcinoma in early life.

References

1. Strautnieks S, et al. Nat Genet. 1998; 20:233-8. 2. van Mil SW, et al. Gastroenterology. 2004; 127:379-84. 3. Noé J, et al. Gastroenterology. 2002; 123:1659-66. 4. Knisely AS, et al. Hepatology. 2006; 44:478-86. 5. Arrese M, et al. Pflügers Archiv. 2004; 449:123-31. 6. Jansen PL, et al. Gastroenterology. 1999; 117:1370-9.

Reference Panels

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Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC518-100	$210
1 ml, Concentrate	IHC518-1	$980
7 ml, Predilute	IHC518-7	$520
3 Positive Control Slides	IHC518-PC	$275

Designations

IVD: RUO:

C4d

Clone: IHC519 | **Source:** Mouse Monoclonal | **Positive Control:** Lymph Node, Tonsil, Acute Rejected Kidney Transplant

Description

C4d plays an integral role in the complement system. C4d has been established as a marker for antibody-mediated acute renal allograph rejection, and C4d staining is also used for identifying hyperactive rejection, acute cellular rejection, and borderline rejection during transplantation. Staining with C4d in concert with C3d is used to understand kidney graft survival and rejection.

References

1. Jianghua C, et al. Clin Transplant. 2005; 19:785-91. 2. Kayler LK, et al. Transplantation. 2008; 85:813-20. 3. Ranjan P, et al. Nephrol Dial Transplant. 2008; 23:1735-41. 4. Seemayer CA, et al. Nephrol Dial Transplant. 2007; 22:568-76. 5. Bouron-Dal Soglio D, et al. Hum Pathol. 2008; 39:1103-10.

Reference Panels

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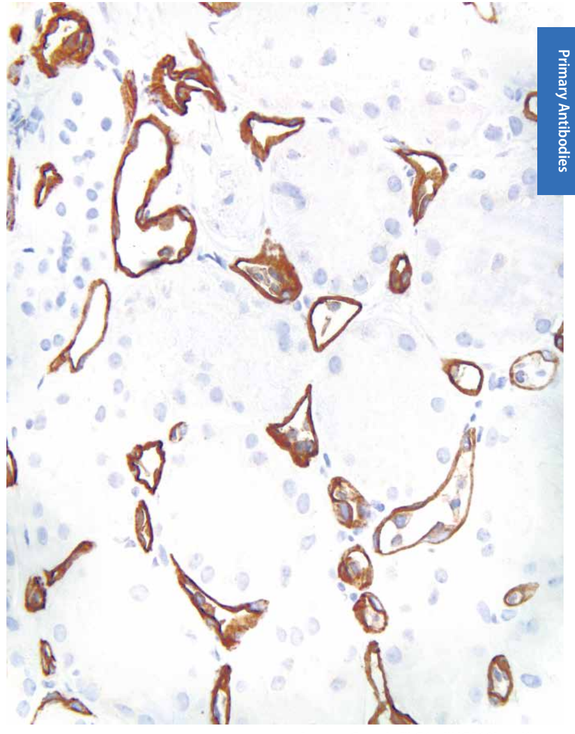
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC519-100	$140
1 ml, Concentrate	IHC519-1	$820
7 ml, Predilute	IHC519-7	$340
25 ml, Predilute	IHC519-25	$1,375
3 Positive Control Slides	IHC519-PC	$160

Designations

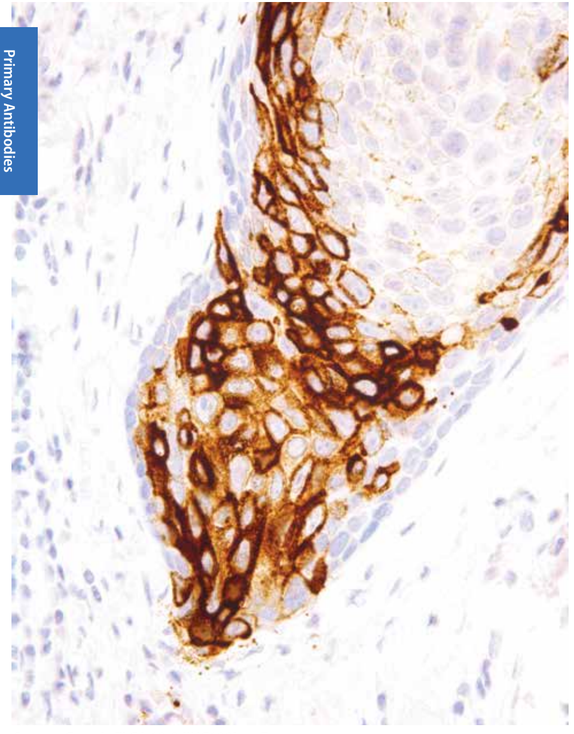
IVD: RUO:



Above: *GeneAb™ C4d [IHC519] on Kidney*

CA 19-9

Clone: IHC199 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma



Above: *GeneAb™ CA 19-9 [IHC199] on Esophagus*

Description

CA 19-9 is a secreted protein that is implicated in various cancers. It is overexpressed in salivary gland mucoepidermoid carcinomas and gastric, pancreatic, and colonic (gastrointestinal) adenocarcinomas, but is not expressed in breast, kidney, and prostate carcinomas. CA 19-9 staining is also implicated in Mirizzi's Syndrome or other bile duct and liver diseases.

References

1. Gatalica Z, et al. Hum Pathol. 1997; 28:400-3. 2. Encabo G, et al. Bull Cancer. 1986; 73:256. 3. Basso D, et al. Med Sci Res. 1989; 17:13-4. 4. Tabuchi Y, et al. Cancer. 1990; 66:1529-33.

Reference Panels

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- Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC199-100	$125
1 ml, Concentrate	IHC199-1	$765
7 ml, Predilute	IHC199-7	$285
3 Positive Control Slides	IHC199-PC	$115

Designations

IVD: RUO:

CA-125

Clone: IHC125 | **Source:** Mouse Monoclonal | **Positive Control:** Ovarian Serous Carcinoma

Description

CA-125 is normally found in epithelial cells of Fallopian tube, endometrium and endocervix, pancreas, colon, gall bladder, stomach, kidney, apocrine sweat gland, mammary gland, and mesothelial cell lining of pleura, pericardium, and the peritoneum. Anti-CA-125 reacts positively with ovarian malignancies, cervical carcinoma, seminal vesicle carcinoma, anaplastic lymphoma, and endometrial and bladder adenocarcinoma.

References

1. Mylonas I, et al. Anticancer Res. 2003; 23:1075-80. 2. Fukazawa I, et al. Arch Gynecol Obstet. 1988; 243:41-50. 3. Kabawat S, et al. Int J Gynecol Pathol. 1983; 2:275-85.

Reference Panels

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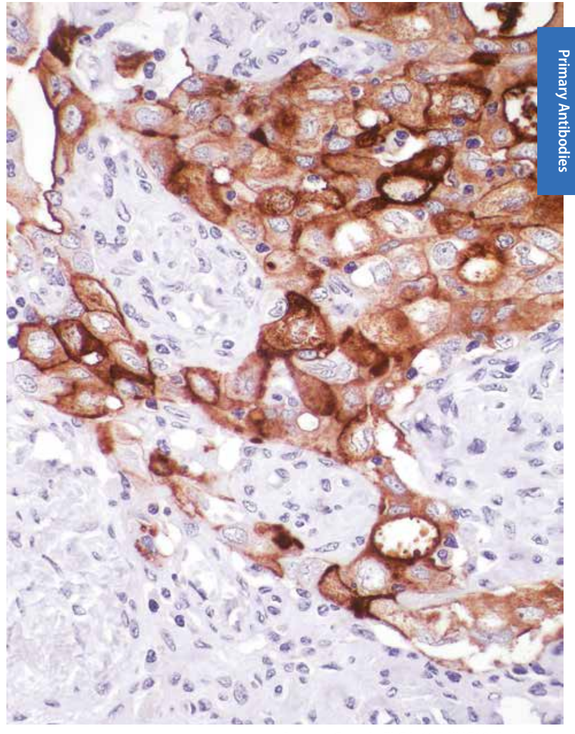
- Breast/Gynecological.....277

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC125-100	$75
1 ml, Concentrate	IHC125-1	$645
7 ml, Predilute	IHC125-7	$345
3 Positive Control Slides	IHC125-PC	$115

Designations

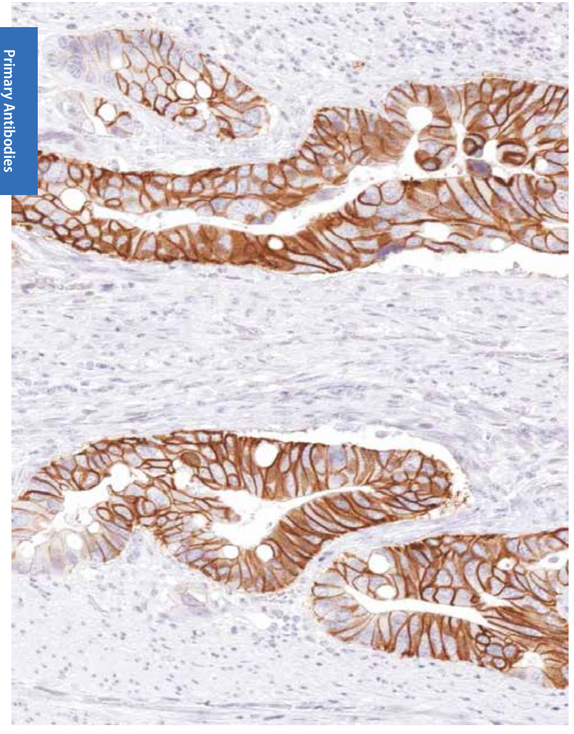
IVD: RUO:



Above: *GeneAb™ CA-125 [IHC125] on Ovary*

Cadherin-17

Clone: IHC520 | **Source:** Mouse Monoclonal | **Positive Control:** Colorectal Carcinoma



Above: *GeneAb™ Cadherin-17 [IHC520] on Colon*

Description

Cadherin-17 is a transmembrane glycoprotein. Anti-Cadherin-17 can be used to stain normal colonic, appendicular, and small intestinal epithelia. The antibody produces diffuse staining in colorectal adenocarcinoma, and focal or scattered staining in adenocarcinomas of the pancreas, bile duct, or stomach.

References

1. Su M, et al. Mod Pathol. 2008; 21:1379-86. 2. Gessner R, et al. Ann N Y Acad Sci. 2000; 915:136-43.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC520-100	$150
1 ml, Concentrate	IHC520-1	$620
7 ml, Predilute	IHC520-7	$375
3 Positive Control Slides	IHC520-PC	$305

Designations

IVD: RUO:

Calcitonin

Clone: IHC521 | **Source:** Mouse Monoclonal | **Positive Control:** Thyroid Gland, Thyroid Medullary Carcinoma

Description

Calcitonin is a polypeptide hormone formed by the proteolytic cleavage of a larger prepropeptide. It is produced primarily by the parafollicular C-cells of the thyroid, and is involved in the regulation of calcium and phosphorus metabolism. It decreases the level of calcium and phosphate ions in blood by promoting the incorporation of these ions into bones, as well as inhibiting renal tubular cell reabsorption. Calcitonin expression is found in C-cell hyperplasia and medullary thyroid carcinomas. It is a useful marker in the identification of C-cell proliferative abnormalities, and for distinguishing medullary carcinoma from papillary and follicular thyroid cancer.

References

1. Boron WF, et al. Elsevier/Saunders. 2004; ISBN 1-4160-2328-3. 2. Rhoades R. Philadelphia: Lippincott Williams & Wilkins. 2009; ISBN 978-0-7817-6852-8. 3. Hayashida CY, et al. Cancer. 1993; 72:1356-63. 4. Us-Krasovec M, et al. Pathologica. 1998; 90:5-13.

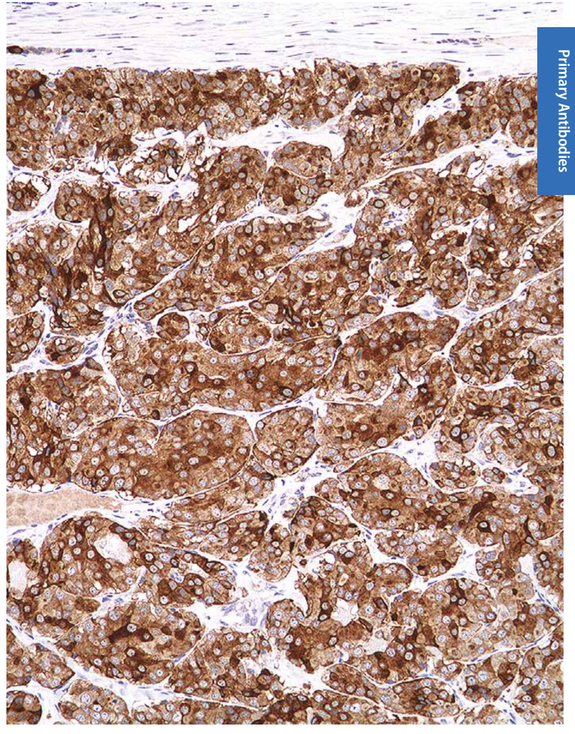
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC521-100	$105
1 ml, Concentrate	IHC521-1	$505
7 ml, Predilute	IHC521-7	$175
3 Positive Control Slides	IHC521-PC	$160

Designations

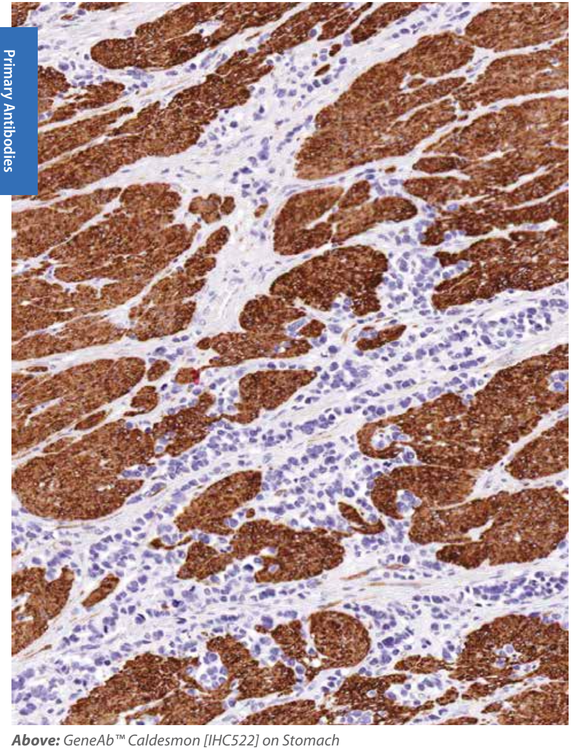
IVD: RUO:



Above: *GeneAb™ Calcitonin [IHC521] on Medulla*

Caldesmon

Clone: IHC522 | **Source:** Mouse Monoclonal | **Positive Control:** Appendix, Breast



Above: *GeneAb™ Caldesmon [IHC522] on Stomach*

Description

Caldesmon is a marker for smooth muscle differentiation. Found in smooth muscle and other tissues, caldesmon interacts with Ca^{2+}-calmodulin, actin, tropomyosin, myosin, and phospholipids. It inhibits the ATPase activity of myosin in smooth muscle, and mediates Ca^{2+}-dependent inhibition of smooth muscle and non-muscle contraction. Caldesmon expression is found in Gastrointestinal Stromal Tumours (GIST), and can be used to differentiate epithelioid mesothelioma from serous papillary carcinoma of the ovary. It is also a specific marker for smooth muscle cells (SMC) and associated neoplasms; therefore, Anti-Caldesmon can be used in the study of the SMC differentiation process as well as the differentiation of other tumours with SMC-like differentiation, including leiomyosarcoma and myofibroblastic tumours.

References

1. Sobue K, et al. J Biol Chem. 1991; 266:12115. 2. Miettinen M, et al. Arch Pathol Lab Med. 2006; 130:1466-78. 3. Frid MG, et al. Dev Biol. 1992; 153:185. 4. Watanabe K, et al. Hum Pathol. 1999; 30:392-6.

Reference Panels

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- Soft Tissue.....302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC522-100	$165
1 ml, Concentrate	IHC522-1	$690
7 ml, Predilute	IHC522-7	$495
3 Positive Control Slides	IHC522-PC	$115

Designations

IVD: RUO:

Calretinin

Clone: IHC523 | **Source:** Mouse Monoclonal | **Positive Control:** Mesothelioma

Description

Calretinin is a calcium-binding protein that functions as a modulator of neuronal excitability and may play a protective role in the survival of nerve cells during disturbances in calcium homeostasis. It is abundantly expressed in subsets of neurons throughout the brain and spinal cord, particularly retina and sensory ganglia, but it is also found in mesothelium, eccrine sweat glands, Sertoli cells, ovarian stromal cells, and adrenal cortical cells. Due to its high sensitivity against mesothelial cells, calretinin is a useful marker in differentiating mesothelioma and metastatic adenocarcinoma to the serous membranes. It is also a diagnostic marker of Hirschsprung's disease and some ovarian and testicular cancers such as Sertoli-Leydig cell tumour, Sertoli cell tumour, Leydig cell tumour, sex cord tumour with annular tubules, and steroid cell tumour.

References

1. Rogers JH. J Cell Biol. 1987; 105:1343-53. 2. Camp AJ, et al. Int J Biochem Cell Biol. 2009; 41:2118-21. 3. Doglioni C, et al. Am J Surg Pathol. 1996; 20:1037-46. 4. Gotzos V, et al. Pathol Res Pract. 1996: 192:137-47. 5. Alexandrescu S, et al. Int J Clin Exp Pathol. 2013; 6:2955-61. 6. Hildebrandt RH, et al. Hum Pathol. 1997; 28:1387-95.

Reference Panels

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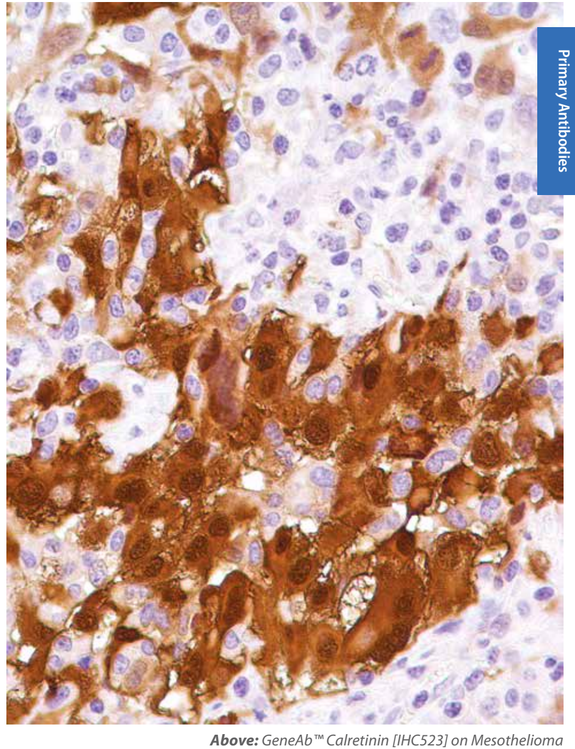
- Pulmonary.....301
- Cytopathology.....n/a

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC523-100	$145
1 ml, Concentrate	IHC523-1	$635
7 ml, Predilute	IHC523-7	$250
3 Positive Control Slides	IHC523-PC	$115

Designations

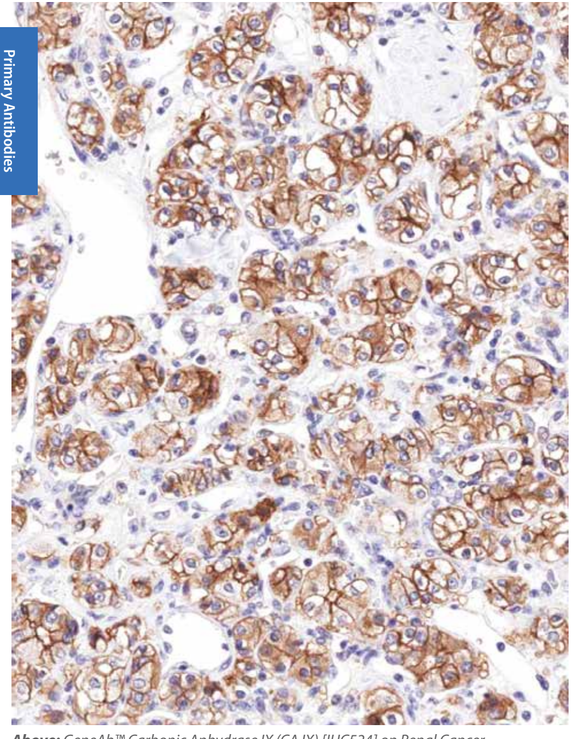
IVD: RUO:



Above: *GeneAb™ Calretinin [IHC523] on Mesothelioma*

Carbonic Anhydrase IX (CA IX)

Clone: IHC524 | **Source:** Mouse Monoclonal | **Positive Control:** Clear Cell Renal Cell Carcinoma



Above: *GeneAb™ Carbonic Anhydrase IX (CA IX) [IHC524] on Renal Cancer*

Description

Carbonic Anhydrase IX (CA IX) is a transmembrane protein involved in catalyzing the reversible hydration of carbon dioxide. CA IX is a useful marker for epithelial malignancies of the uterus, cervix, lung, breast, and kidney (including clear cell renal cell carcinoma or RCC). Urothelial carcinomas produce diffuse-to-multifocal staining, while Collecting Duct Carcinoma (CDC) yields extremely weak and focal staining.

References

1. Tostain J, et al. Eur J Cancer. 2010; 46:3141-8. 2. Kivela AJ, et al. Histochem Cell Biol. 2000; 114:197-204. 3. Al-Ahmadie HA, et al. Am J Surg Pathol. 2008; 32:377-82. 4. Ivanov S, et al. Am J Pathol. 2001; 158:905-19. 5. Leppilampi M, et al. World J Gastroenterol. 2003; 9:1398-403. 6. Dorai T, et al. Cancer Invest. 2006; 24:754-79.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC524-100	$145
1 ml, Concentrate	IHC524-1	$605
7 ml, Predilute	IHC524-7	$425
3 Positive Control Slides	IHC524-PC	$200

Designations

IVD: RUO:

CD1a

Clone: IHC530 | **Source:** Mouse Monoclonal | **Positive Control:** Skin, Thymus

Description

CD1a is part of a heterodimer with β-2-microglobulin, and mediates the capture and presentation of antigens, primarily lipid and glycolipid antigens of self or microbial origin, to T-cells. CD1a is expressed on interdigitating and dermal dendritic cells, veiled cells, Langerhans cells, antigen-presenting cells of the lymph nodes, and cortical thymocytes. Anti-CD1a stains Langerhans cell histiocytosis and cortical T LBL/L pre-T lymphoblastic lymphoma and leukemia. In concert with S100 and CD68, CD1a is very useful for differentiating Rosai-Dorfman disease from other histiocytic diseases.

References

1. Melián A, et al. Curr Opin Immunol. 1996; 8:82-8. 2. Park SH, et al. Nature. 2000; 406:788-92. 3. Angel CE, et al. Blood. 2009; 113:1257-67. 4. Krenacs L, et al. J Pathol. 1993; 171:99-104. 5. Emile JF, et al. Am J Surg Pathol. 1995; 19:636-41. 6. Dalia S, et al. Cancer Control. 2014; 21:322-7.

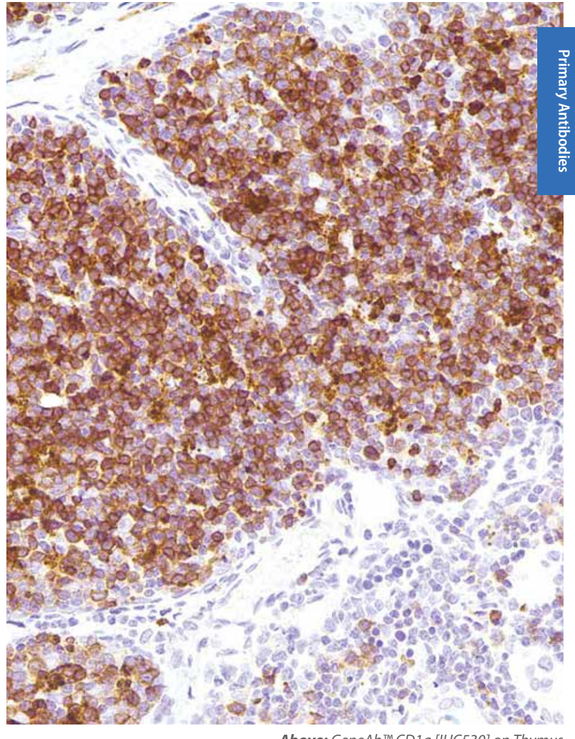
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC530-100	$130
1 ml, Concentrate	IHC530-1	$745
7 ml, Predilute	IHC530-7	$315
3 Positive Control Slides	IHC530-PC	$160

Designations

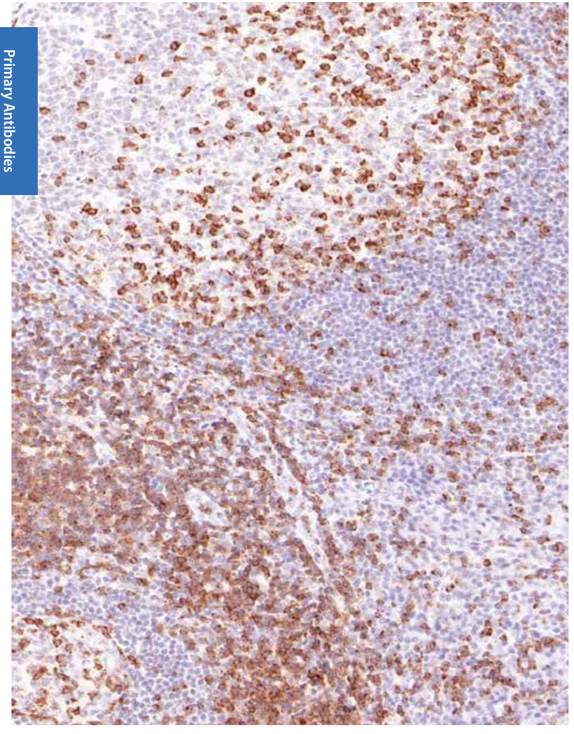
IVD: RUO:



Above: *GeneAb™ CD1a [IHC530] on Thymus*

CD2

Clone: IHC531 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ CD2 [IHC531] on Tonsil*

Description

Cluster of Differentiation 2 (CD2) is a useful early T-cell lineage restricted antigen that is present in T-cell differentiation. As a pan-T-cell marker, CD2 staining is used for recognizing practically all normal T-cells, but may be deleted in some T-cell neoplasms. Since CD2 is present in most precursor and mature T-cell leukemias and lymphomas, it is useful in the evaluation of lymphoid malignancies. By using CD2 and CD25 staining, the recognition of systemic mastocytosis and mastocytic leukemia is supported.

References

1. Went P, et al. J Clin Oncol. 2006; 24:2472-9. 2. Aguilera NS, et al. Arch Pathol Lab Med. 2006; 130:1772-9. 3. Barrionuevo C, et al. Appl Immunohistochem Mol Morphol. 2007; 15:38-44. 4. Bovenschen HJ, et al. Br J Dermatol. 2005; 153:72-8. 5. Foon KA, et al. Blood 1986; 68:1-31.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC531-100	$205
1 ml, Concentrate	IHC531-1	$650
7 ml, Predilute	IHC531-7	$450
3 Positive Control Slides	IHC531-PC	$115

Designations

IVD: RUO:

CD3

Clone: IHC534 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 3 (CD3) is a T-cell co-receptor expressed by T-cells in thymus, peripheral lymphoid tissue, blood, and bone marrow, as well as activated natural killer cells. CD3 is specifically expressed by T-cells at all stages of development including T-cell lymphomas and leukemias; therefore, it can be used to classify T-cell neoplasms from B-cell and myeloid neoplasms.

References

1. Lanier L, et al. J Immunol. 1992; 149:1876-80. 2. Clevers H, et al. Eur J Immunol. 1988; 18:705-10. 3. Campana D, et al. J Immunol. 1987; 138:648-55. 4. Pilozzi E, et al. J Pathol. 1988; 186:140-3.

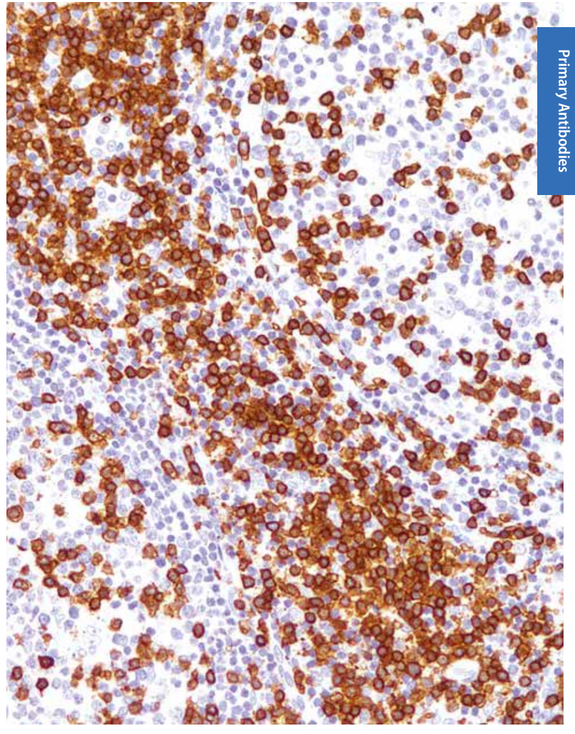
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC534-100	$140
1 ml, Concentrate	IHC534-1	$530
7 ml, Predilute	IHC534-7	$265
25 ml, Predilute	IHC534-25	$1,020
3 Positive Control Slides	IHC534-PC	$115

Designations

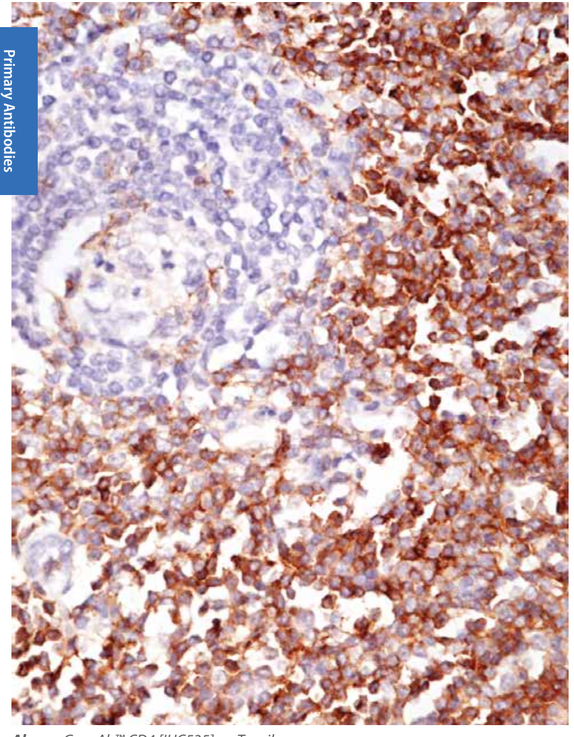
IVD: RUO:



Above: *GeneAb™ CD3 [IHC534] on Tonsil*

CD4

Clone: IHC535 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node



Above: *GeneAb™ CD4 [IHC535] on Tonsil*

Description

Cluster of Differentiation 4 (CD4) is a membrane glycoprotein expressed in T helper cells, monocytes, macrophages, granulocytes, and dendritic cells, and is a receptor of human immunodeficiency virus (HIV). CD4 staining is used for identifying lymphoproliferative disorders. Since the majority of peripheral T-cell lymphomas arise from the T helper cell subset, CD4 expression can be found in most forms of T-cell lymphomas as well as anaplastic large T-cell lymphomas and mycosis fungoides. Since CD4 may be aberrantly expressed in neoplastic T-lymphocytes, a panel of markers may be used to identify such tumours. CD4(+) CD25(+) T-cells are reported to exert immunosuppression, which is commonly observed in various types of cancers, including non-small cell lung cancer and cancers of the breast, prostate, and ovary.

References

1. Brady RL, et al. Science. 1993; 260:979-83. 2. Gordon SN, et al. J Immunol. 2010; 185:5169-79. 3. Macon WR, et al. Am J Clin Pathol. 1998; 109:610-7. 4. Zettl A, et al. Am J Pathol. 2004; 164:1837-48. 5. Nakamura K, et al. J Exp Med. 2001; 194:629-44. 6. Woo EY, et al. Cancer Res. 2001; 61:4766-72. 7. Davidsson S, et al. Mod Pathol. 2013; 26:448-55.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC535-100	$185
1 ml, Concentrate	IHC535-1	$930
7 ml, Predilute	IHC535-7	$430
3 Positive Control Slides	IHC535-PC	$115

Designations

IVD: RUO:

CD5

Clone: IHC538 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node

Description

Cluster of Differentiation 5 (CD5) is expressed in high levels on the surface of T-cells, while the expression levels and role of CD5 in B-cells is not well documented. As a part of a diagnostic panel, its utility lies predominantly as a marker for T-cells, with over 70% of T-cell neoplasms expressing CD5. In particular, it is correlated with chronic lymphocytic leukemia and small lymphocytic lymphomas, mantle cell lymphoma, as well as a subset of diffuse large B-cell lymphomas. CD5 demonstrates positive expression in thymic carcinomas, and is not as sensitive as CD3. CD5 also has value as a prognostic indicator, as it is associated with poor prognosis in acute T-cell lymphoblastic leukemia.

References

1. Tan S, et al. Br J Dermatol. 2003; 149:542-53. 2. Chang C, et al. Mod Pathol. 2002; 15:1051-7.

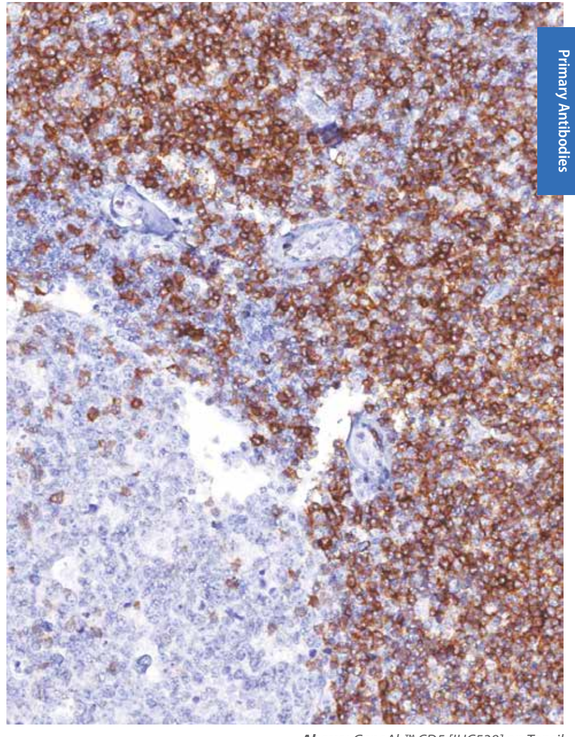
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC538-100	$165
1 ml, Concentrate	IHC538-1	$785
7 ml, Predilute	IHC538-7	$595
3 Positive Control Slides	IHC538-PC	$115

Designations

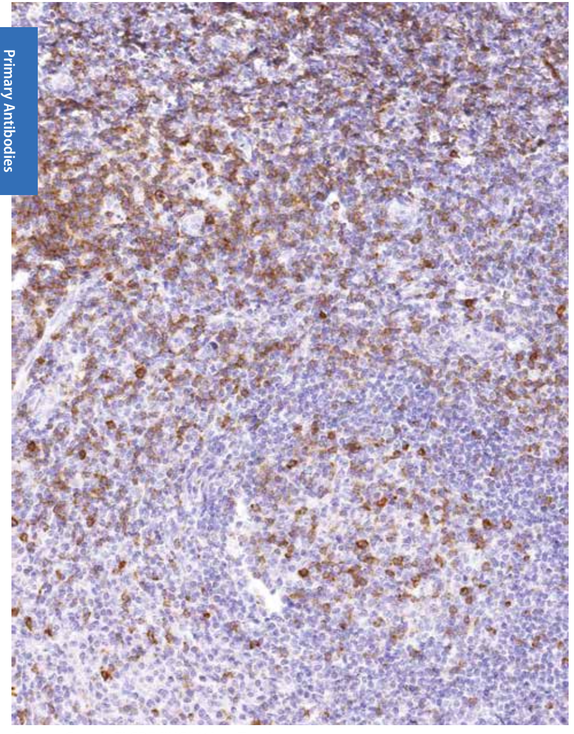
IVD: RUO:



Above: *GeneAb™ CD5 [IHC538] on Tonsil*

CD7

Clone: IHC541 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Peripheral T-Cell Lymphoma



Above: *GeneAb™ CD7 [IHC541] on Tonsil*

Description

Cluster of Differentiation 7 (CD7) is an antigen expressed in immature and mature T-lymphocytes, thymocytes, peripheral blood T-cells, natural killer cells, myeloid precursors, fetal liver and bone marrow, a small subpopulation of normal B-cells, and malignant B-cells. The antigen belongs to the immunoglobulin gene superfamily, and plays an important role in T-cell interactions and T-cell/B-cell interactions during early lymphoid development. CD7 is indicated as a marker for acute myelogenous leukemia and chronic myelogenous leukemia, and for neoplastic proliferations such as T-cell acute lymphoblastic leukemia/lymphoma. Anti-CD7, when used in adjunct with Anti-CD4, is useful for differentiating mycosis fungoides or Sézary syndrome (both cutaneous T-cell lymphomas) from benign dermatoses.

References

1. Hodak E, et al. J Am Acad Dermatol. 2006; 55:276-84. 2. Went P, et al. J Clin Oncol. 2006; 24:2472-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC541-100	$165
1 ml, Concentrate	IHC541-1	$565
7 ml, Predilute	IHC541-7	$305
3 Positive Control Slides	IHC541-PC	$160

Designations

IVD: RUO:

CD8

Clone: IHC542 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 8 (CD8) is a transmembrane glycoprotein that serves as a co-receptor for the T-cell receptor. It is expressed in cytotoxic T-cells, natural killer cells, cortical thymocytes, some null cells, and bone marrow cells. Anti-CD8, in a panel of other antibodies, may be used to differentiate between reactive and neoplastic T-lymphocytes.

References

1. Gao G, et al. Immunol Today. 2000; 21:630-6. 2. Nuckols JD, et al. J Cutan Pathol. 1999; 26:169-75. 3. Mason DY, et al. J Clin Pathol. 1992; 45:1084-8.

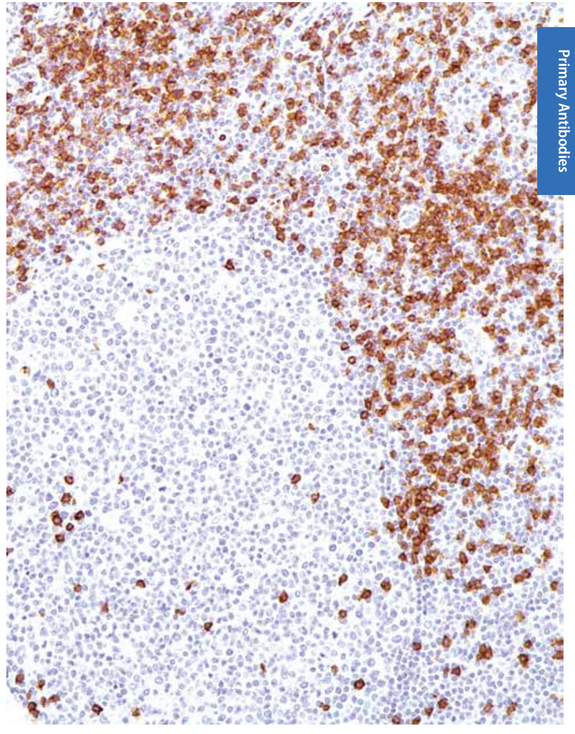
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC542-100	$165
1 ml, Concentrate	IHC542-1	$615
7 ml, Predilute	IHC542-7	$280
3 Positive Control Slides	IHC542-PC	$115

Designations

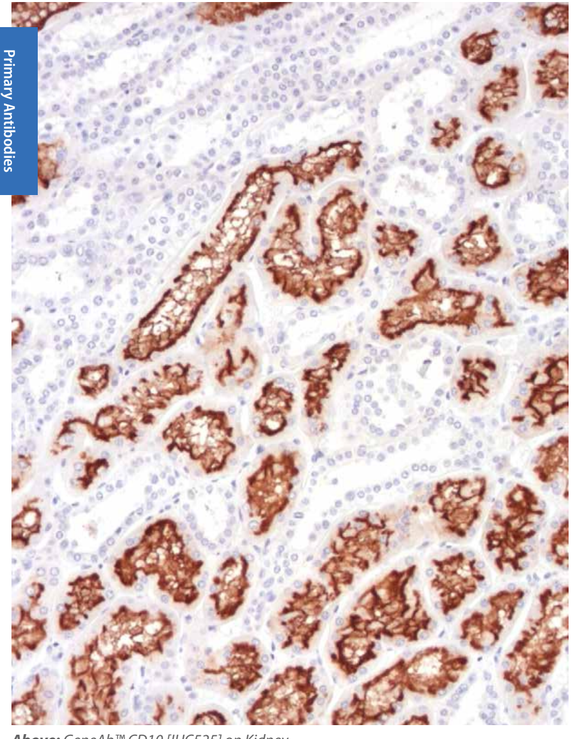
IVD: RUO:



Above: *GeneAb™ CD8 [IHC542] on Tonsil*

CD10

Clone: IHC525 | **Source:** Mouse Monoclonal | **Positive Control:** Kidney, Lymph Node, Tonsil



Above: *GeneAb™ CD10 [IHC525] on Kidney*

Description

Cluster of Differentiation 10 (CD10) is a cell surface metalloendopeptidase that cleaves and inactivates several peptide hormones including glucagon, enkephalins, and oxytocin. Also known as **Common Acute Lymphoblastic Leukemia Antigen (CALLA),** it is an important cell surface marker in the diagnosis of human ALL (Acute Lymphocytic Leukemia), and is found positive in precursor B lymphoblastic leukemia/ lymphoma, angioimmunoblastic T-cell lymphoma, Burkitt's lymphoma, and follicular germinal center lymphoma. CD10 expression has also been reported in a variety of non-hematolymphoid tissues, particularly of the kidney. It is a useful aid in the diagnosis of various malignant tumours such as renal cell carcinoma, endometrial stromal sarcoma, and hepatocellular carcinoma.

References

1. Shipp MA, et al. Proc Natl Acad Sci U S A. 1989; 86:297-301. 2. Attygalle A, et al. Blood. 2002; 99:627-33. 3. Chu PG, et al. App Imm & Mol Morphol. 2000; 8:257-62. 4. Sangio AR, et al. Adv Anat Pathol. 2010; 17:377-93. 5. Ordi J, et al. Am J Surg Pathol. 2003; 27:178-86.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC525-100	$135
1 ml, Concentrate	IHC525-1	$655
7 ml, Predilute	IHC525-7	$550
25 ml, Predilute	IHC525-25	$1,700
3 Positive Control Slides	IHC525-PC	$115

Designations

IVD: RUO:

CD13

Clone: IHC013 | **Source:** Mouse Monoclonal | **Positive Control:** Liver

Description

Cluster of Differentiation 13 (CD13) is a transmembrane protein that is overexpressed in both hematological and solid malignancies, including Acute Myeloid Leukemia (AML). Although hypogranular variants of AML are difficult to distinguish from other AML subtypes due to the morphology, the diagnosis of this variant is possible through using a panel of CD13, CD16, CD33, CD34, and CD117. Alternatively, a panel of CD13, CD34, CD43, CD68, CD117, CD163, lysozyme, and MPO is very useful for accurately diagnosing myeloid sarcoma and distinguishing it from large cell lymphoma, undifferentiated carcinoma, lymphoblastic lymphoma, malignant melanoma, Burkitt's lymphoma, extra-medullary hematopoiesis, and inflammation. Since CD13 is expressed in both normal and neoplastic liver tissues, CD13 staining is useful for distinguishing between hepatocellular carcinoma and non-hepatocellular neoplasms.

References

1. Bauvois B, et al. Med Res Rev. 2006; 26:88-130. 2. Piedfer M, et al. FASEB J. 2011; 25:2831-42. 3. Gorczyca W. Pol J Pathol. 2012; 1:8-17. 4. Pileri SA, et al. Leukemia. 2007; 21:340-50. 5. Rocken C, et al. J Clin Pathol. 2005; 58:1069-75.

Reference Panels

pg.
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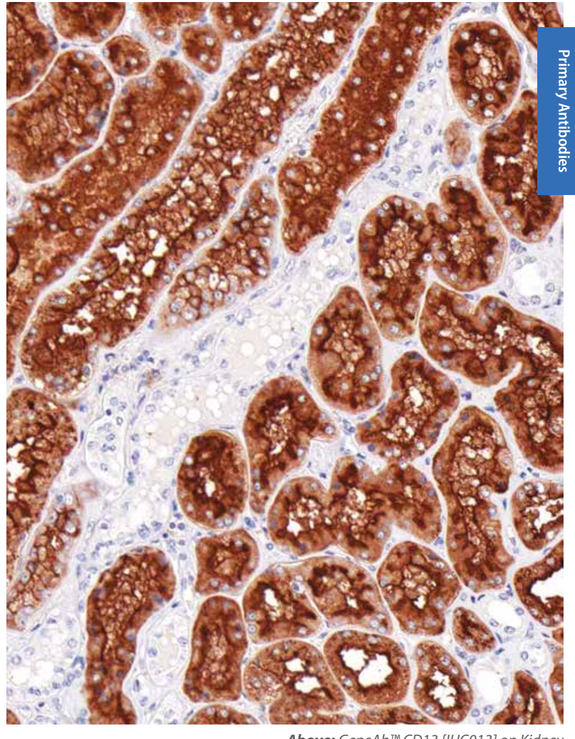
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC013-100	$175
1 ml, Concentrate	IHC013-1	$715
7 ml, Predilute	IHC013-7	$450
3 Positive Control Slides	IHC013-PC	$240

Designations

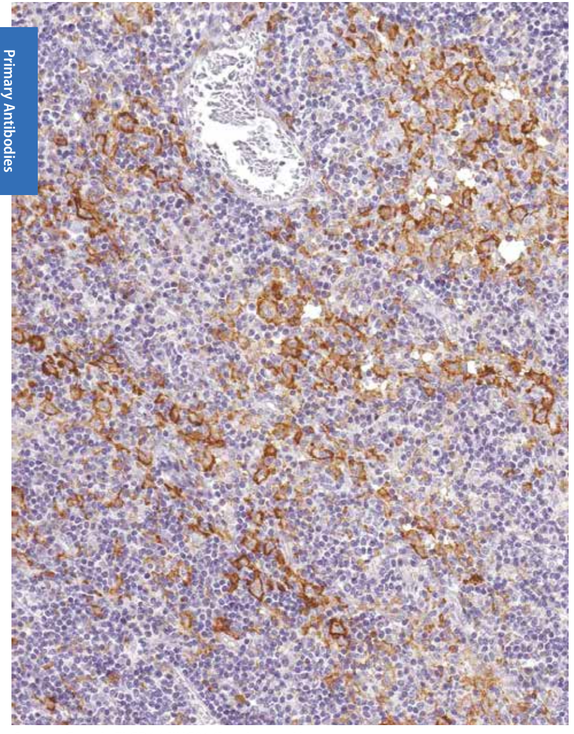
IVD: RUO:



Above: *GeneAb™ CD13 [IHC013] on Kidney*

CD14

Clone: IHC014 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node, Appendix, Colon, Myeloid Leukemia



Above: *GeneAb™ CD14 [IHC014] on Lymph Node*

Description

Cluster of Differentiation 14 (CD14) is a macrophage-derived monocyte marker that stains granulocytes, endothelial and epithelial cells, placental trophoblasts, and the red pulp and marginal zone cells of the spleen. In lymph nodes, sinusoidal histiocytes and follicular dendritic cells stain positively for CD14, while monocyte-derived cells, including macrophages associated with anthracosis and sinusoidal histiocytosis with erythrophagocytosis, stain negatively. High CD14 expression is found in histiocytes with Diffuse Large B-Cell Lymphoma (DLBCL) when compared to Chronic Lymphocytic Leukemia (CLL)/Small Lymphocytic Lymphoma (SLL), Mantle Cell Lymphoma (MCL), or Follicular Lymphoma (FL). CD14 is also valuable for differentiating between acute monocytic leukemia, myeloproliferative neoplasms, and myelodysplastic syndrome.

References

1. Gregory CD, et al. Apoptosis. 1999; 4:11-20. 2. Larregina AT, et al. Nature Immunol. 2001; 2:1151-8. 3. Ziegler-Heitbrock HW, et al. Immunol Today. 1993; 14:121-5. 4. Steiniger B, et al. Immunology. 1997; 92:307-16. 5. Buckley PJ, et al. Am J Pathol. 1987; 128:505-20. 6. Hartnell A, et al. Blood. 2001; 97:288-96. 7. Marmey B, et al. Hum Pathol. 2006; 37:68-77.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC014-100	$155
1 ml, Concentrate	IHC014-1	$650
7 ml, Predilute	IHC014-7	$445
3 Positive Control Slides	IHC014-PC	$115

Designations

IVD: RUO:

CD15/Leu-M1

Clone: IHC527 | **Source:** Mouse Monoclonal | **Positive Control:** Hodgkin's Lymphoma

Description

Cluster of Differentiation 15 (CD15), also known as **Leu-M1,** is a carbohydrate adhesion molecule. Positive staining for CD15 and negative staining for leukocyte common antigen or other B- or T-cell lineage markers helps recognize Reed Sternberg cells (RSC) in classic Hodgkin's lymphoma, and distinguishes it from Hodgkin-like neoplasms. CD15 does not stain mesotheliomas and is therefore most useful for distinguishing epithelial mesothelioma from adenocarcinoma.

References

1. Kerr M, et al. Histochem J. 1992; 24:811-26. 2. Arber D,et al. Applied Immunohistochem. 1993; 1:17-30. 3. Hsu S, et al. Am J Clin Path. 1984; 82:666-73. 4. Pellegrini W, et al. Haematologica. 2007; 92:708-9.

Reference Panels

pg.

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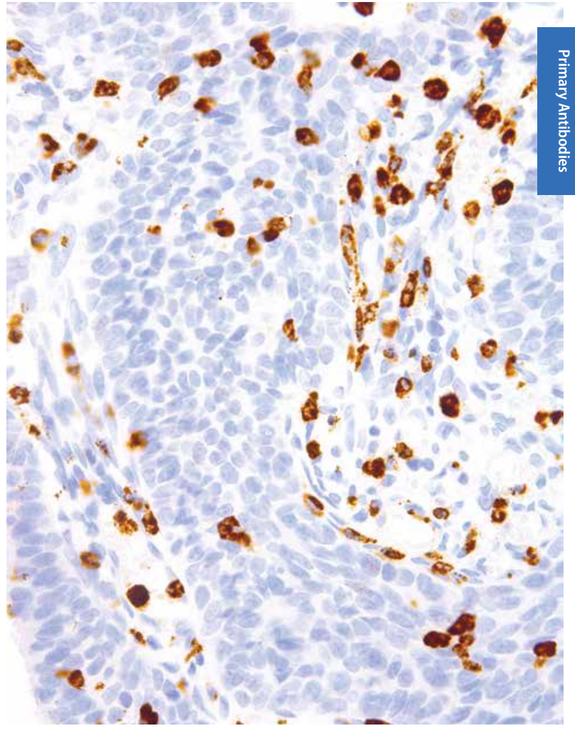
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC527-100	$130
1 ml, Concentrate	IHC527-1	$480
7 ml, Predilute	IHC527-7	$310
3 Positive Control Slides	IHC527-PC	$115

Designations

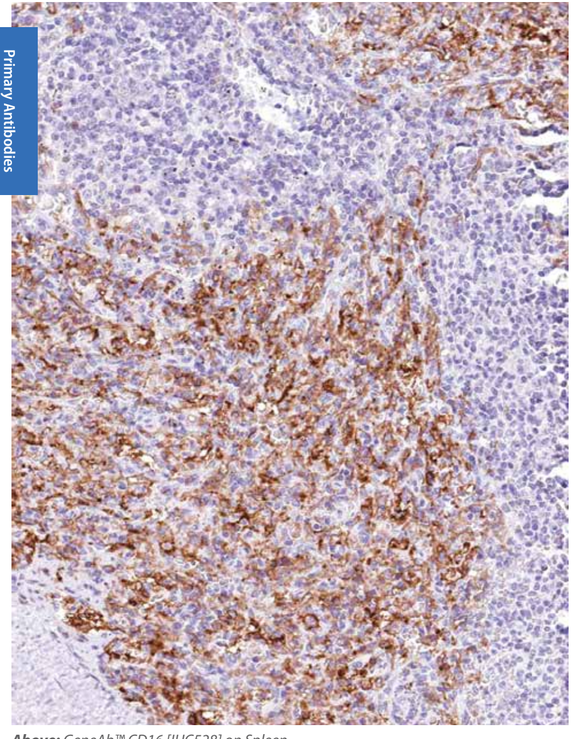
IVD: RUO:



Above: *GeneAb™ CD15/Leu-M1 [IHC527] on Cervical Cancer*

CD16

Clone: IHC528 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ CD16 [IHC528] on Spleen*

Description

Cluster of Differentiation 16 (CD16) is a receptor on natural killer cells, neutrophils, monocytes, and macrophages. CD16 binds the Fc portion of antibodies to activate these immune cells. CD16 staining is useful in the differential diagnosis of hepatosplenic gamma delta T-cell lymphoma and gamma delta T-cell large granular lymphocyte leukemia from mucosal and cutaneous gamma delta T-cell lymphoma. Likely due to dysgranulopoiesis, granulocytes with myelomonocytic leukemia have decreased CD16 expression in comparison to granulocytes with chronic myelogenous leukemia and control bone marrow biopsies.

References

1. Gibson SE, et al. Hum Pathol. 2011; 42:679-87. 2. Qubaja M, et al. Virchows Arch. 2009; 454:411-9.

Reference Panels

pg.
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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC528-100	$140
1 ml, Concentrate	IHC528-1	$450
7 ml, Predilute	IHC528-7	$305
3 Positive Control Slides	IHC528-PC	$160

Designations

IVD: RUO:

CD19

Clone: IHC529 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 19 (CD19) is a surface receptor found on follicular dendritic cells and B-cells. CD19 is found on normal and malignant B-cells, and is known as a reliable marker for B-cells throughout its maturation stages. Anti-CD19 reacts positively with the mantle zone cells, scattered cells, and germinal centers of normal lymph tissues. Although CD20 and CD22 have similar staining patterns to CD19, CD19 is useful because it is also expressed in immature B-cells.

References

1. Masir N, et al. Histopathology. 2006; 48:239-46. 2. Kimura M, et al. Int J Hematol. 2007; 85:41-8. 3. Ishikawa H, et al. Leuk Lymphoma. 2002; 43:613-6. 4. Greenberg SA, et al. Neurology. 2005; 65:1782-7.

Reference Panels

pg.
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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC529-100	$195
1 ml, Concentrate	IHC529-1	$915
7 ml, Predilute	IHC529-7	$265
3 Positive Control Slides	IHC529-PC	$115

Designations

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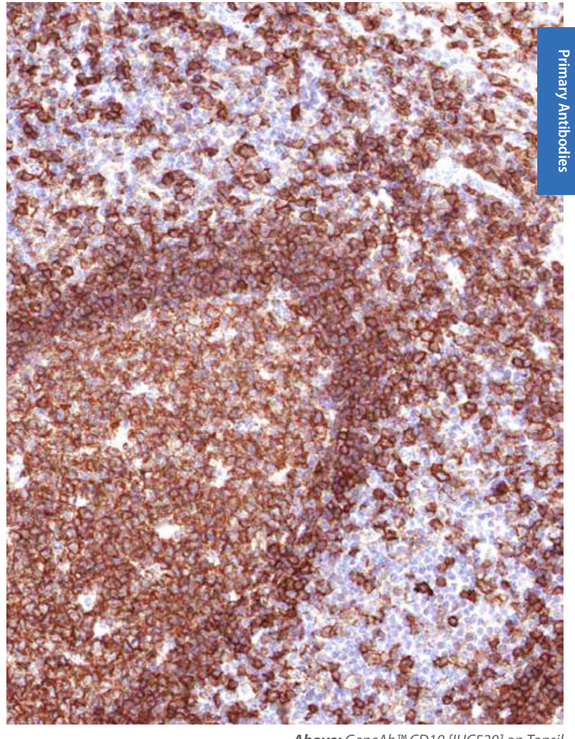
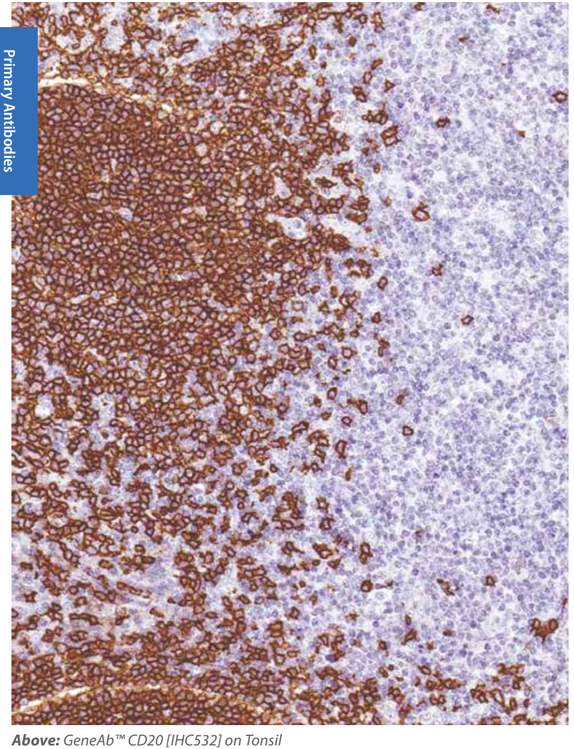


Above: *GeneAb™ CD19 [IHC529] on Tonsil*

CD20

Clone: IHC532 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node



Above: *GeneAb™ CD20 [IHC532] on Tonsil*

Description

Cluster of Differentiation (CD20), also known as **B-Lymphocyte Antigen,** is a non-glycosylated protein expressed on the surface of normal and malignant B-cells, which functions in chemokine signaling and microenvironmental interactions of B-cells. Anti-CD20 stains a minority of Reed-Sternberg cells with Hodgkin's disease. Since CD20 does not stain T-cell malignancies, it is a very useful marker for B-cell lymphomas. CD20 is also not reactive on non-hematopoietic neoplasms.

References

1. Ishii Y, et al. Clin Exp Immuno. 1984; 58:183-92. 2. Davey FR, et al. Am J Pathol. 1987; 129:54-63. 3. Mason DY. Am J Pathol. 1987; 128:1-4. 4. Tzankov A, et al. Clin Cancer Res. 2003; 9:1381-6. 5. Browne P, et al. Am J Clin Pathol. 2003; 120:767-77.

Reference Panels

pg.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC532-100	$120
1 ml, Concentrate	IHC532-1	$255
7 ml, Predilute	IHC532-7	$145
25 ml, Predilute	IHC532-25	$405
3 Positive Control Slides	IHC532-PC	$115

Designations

IVD: RUO:

CD21

Clone: IHC533 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node

Description

Cluster of Differentiation 21 (CD21) is a glycoprotein on the surface of B-cells that is bound by Epstein-Barr virus (EBV) during infection of these cells. CD21 staining is useful for recognizing follicular dendritic cell matrices in normal tonsillar and lymph tissue, and can also stain dendritic cell sarcomas. CD21 is also useful for distinguishing marginal zone lymphoma with follicular involvement from follicular lymphoma with marginal zone differentiation. When used in concert with other B- and T-cell markers, CD21 is valuable for differentiating between nodular lymphocyte-predominant Hodgkin's lymphoma, T-cell/histiocyte-rich B-cell lymphoma, and lymphocyte-rich classic Hodgkin's lymphoma. CD21 staining is useful for recognizing abnormal follicular dendritic cell patterns in angioimmunoblastic T-cell lymphoma and follicular T-cell lymphoma.

References

1. Cheuk W, et al. Am J Surg Pathol. 2001; 25:721-31. 2. Pileri SA, et al.Histopathology. 2002; 41:1-29. 3. Maeda K, et al. J Histochem Cytochem. 2002; 50:1475-86. 4. Biddle DA, et al. Mod Pathol. 2002; 15:50-8.

Reference Panels

pg.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC533-100	$120
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3 Positive Control Slides	IHC533-PC	$115

Designations

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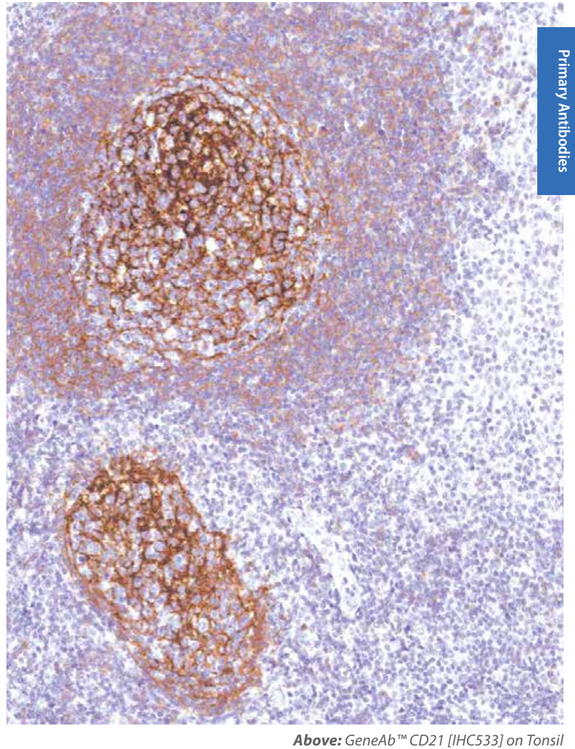
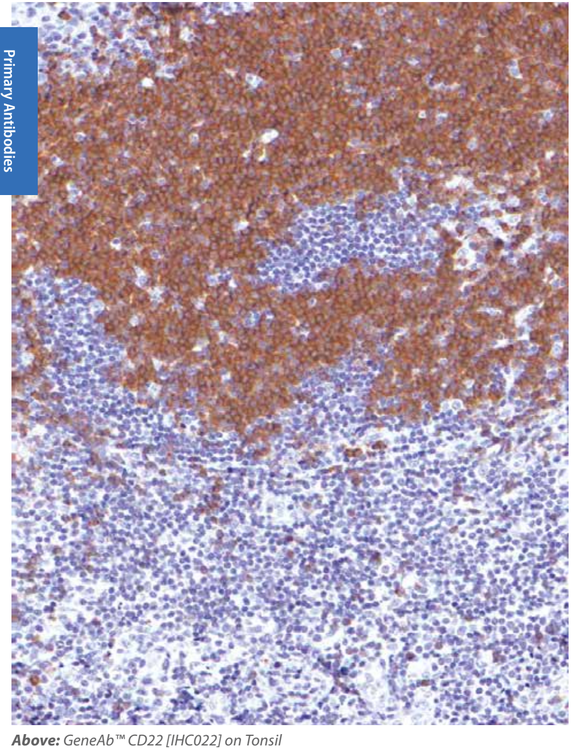


Above: *GeneAb™ CD21 [IHC533] on Tonsil*

CD22

Clone: IHC022 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ CD22 [IHC022] on Tonsil*

Description

Cluster of Differentiation 22 (CD22) is a glycoprotein that appears on the cell membrane of B-cells and the cytoplasm of late pro- and early pre-B-lymphocytes. Anti-CD22 is a useful pan-B reagent that allows for the identification of neoplastic and normal B-lymphocytes in the peripheral blood. CD22 is overexpressed in hairy cell leukemia. Expression is only present in the late stages of B-lymphocyte differentiation, and therefore may support the identification of mature B-cell leukemia. Some studies have suggested that CD22 may be involved in metastasis of lung cancer cells.

References

1. Abdel-Ghafar A, et al. Hematol Rep. 2012; 4:e3 2. Tuscano J, et al. Cancer Res. 2012; 72:5556-65. 3. Shao H, et al. Leuk Res. 2013; 37:401-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC022-100	$140
1 ml, Concentrate	IHC022-1	$745
7 ml, Predilute	IHC022-7	$340
3 Positive Control Slides	IHC022-PC	$180

Designations

IVD: RUO:

CD23

Clone: IHC023 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node, CII/SII

Description

Cluster of Differentiation 23 (CD23) is found on interleukin-4 activated B-cells, activated macrophages, eosinophils, and follicular dendritic cells, and is a receptor for IgE, an antibody involved in parasitic immunity. CD23 is present on Reed-Sternberg cells in Hodgkin's disease. Follicular dendritic cells and activated B-lymphocytes produce strong staining in germinal centers and weak patterns in mantle zone B-cells. CD23 is helpful in differentiating chronic lymphocytic leukemia from mantle cell leukemia. Small B-cell lymphomas are sometimes positive, while precursor B- and T-lymphomas, myeloid neoplasms, and mature T-cell lymphomas stain negatively with Anti-CD23.

References

1. Lichtman AH, et al. Philadelphia: Saunders. 2003; 324-5. ISBN 0-7216-0008-5. 2. Henningsson F, et al. PLoS One. 2011; 6:e21760. 3. Barna G, et al. Hematol Oncol. 2008; 26:167-70. 4. Kurtin PJ, et al. Am J Clin Pathol. 1999; 112:319-29. 5. Cooper K. London: Greenwich Medical Media. 2003; 95. ISBN 1-84110-100-1.

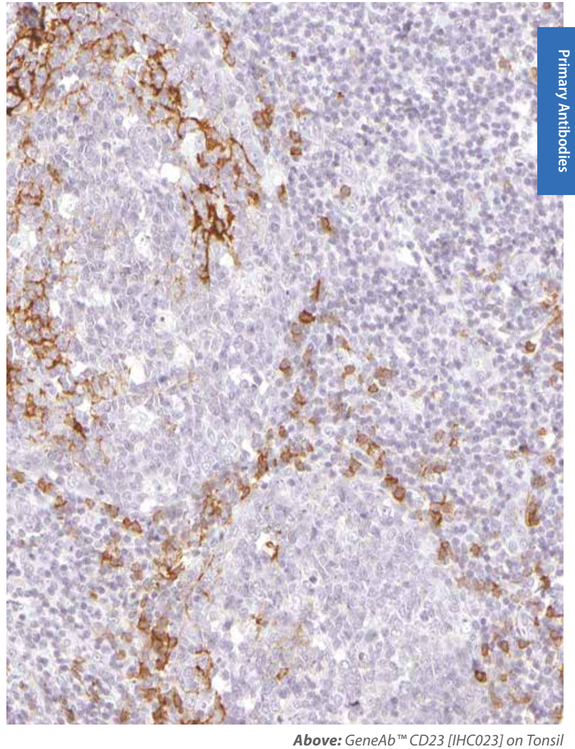
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC023-100	$160
1 ml, Concentrate	IHC023-1	$735
7 ml, Predilute	IHC023-7	$480
3 Positive Control Slides	IHC023-PC	$115

Designations

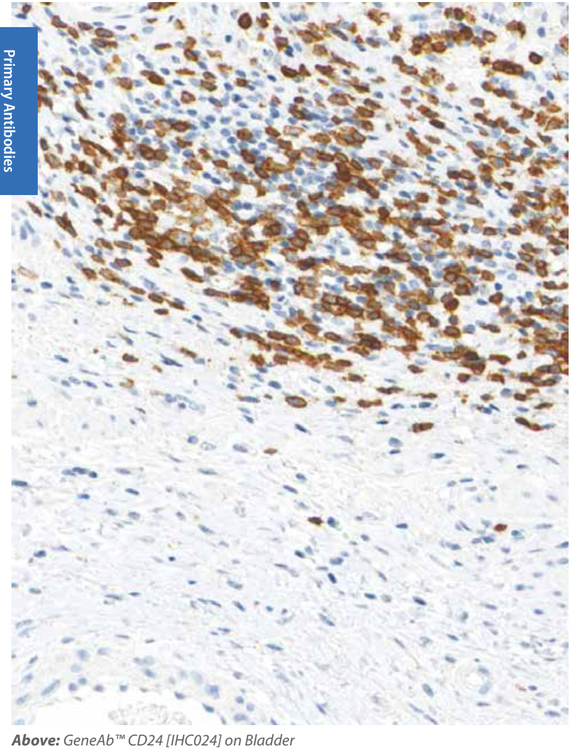
IVD: RUO:



Above: *GeneAb™ CD23 [IHC023] on Tonsil*

CD24

Clone: IHC024 | **Source:** Mouse Monoclonal | **Positive Control:** Spleen, Lymphocytes



Above: *GeneAb™ CD24 [IHC024] on Bladder*

Description

Cluster of Differentiation 24 (CD24), also known as **BA-1** or **Heat Stable Antigen (HSA),** is a GPI-anchored glycoprotein present on pro-, pre-, and mature B-cells, as well as granulocytes. CD24 staining is useful for identifying B-cell Acute Lymphoblastic Leukemia (B-ALL), B-cell Chronic Lymphocytic Leukemia (B-CLL), B-cell non-Hodgkin's lymphoma, small cell lung carcinoma, and ovarian cancer.

References

1. Raife T, et al. Am J Clin Pathol. 1994; 101:296-9. 2. Barcos M, et al. Hematol Oncol. 1986; 4:251-9. 3. Kristiansen G, et al. Am J Pathol. 2002; 161:1215-21.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC024-100	$180
1 ml, Concentrate	IHC024-1	$680
7 ml, Predilute	IHC024-7	$290
3 Positive Control Slides	IHC024-PC	$155

Designations

IVD: RUO:

CD25

Clone: IHC025 | **Source:** Mouse Monoclonal | **Positive Control:** Lesions of Mastocytosis

Description

Cluster of Differentiation 25 (CD25) is the extracellular region of the interleukin-2 receptor on activated B- and T-cells, myeloid precursors, and some other types of leukocytes. Since CD25 staining is useful for differentiating neoplastic mast cell aggregates from reactive proliferations, Anti-CD25 has become a major criterion for Systemic Mastocytosis diagnoses. In the context of urticaria pigmentosa, CD25 staining is also used to recognize mast cells in skin biopsies. There is a greater proportion of CD25+ and FOXP3+ regulatory T-cells among cancer cells in tumour parenchyma and its periphery in recurrent cutaneous melanoma compared to non-recurrent melanoma.

References

1. Triplett T, et al. Eur J Immunol. 2012; 42:1893-905. 2. Hahn H, et al. Am J Surg Pathol. 2011; 31:1669-76. 3. Hollmann TJ, et al. Am J Surg Pathol. 2008; 32:139-45. 4. Miracco C, et al. Oncol Rep. 2007; 18:1115-22. 5. Siddiqui SA, et al. Clin Cancer Res. 2007; 13:2075-81.

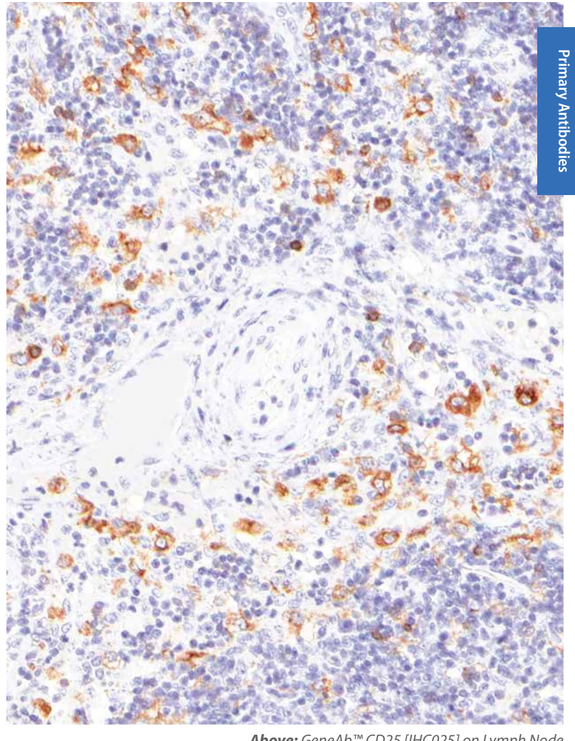
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC025-100	$140
1 ml, Concentrate	IHC025-1	$550
7 ml, Predilute	IHC025-7	$455
3 Positive Control Slides	IHC025-PC	$115

Designations

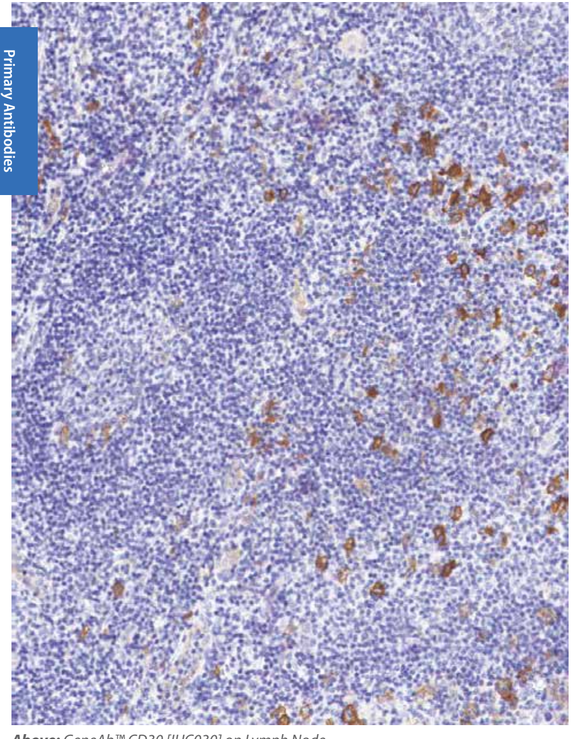
IVD: RUO:



Above: *GeneAb™ CD25 [IHC025] on Lymph Node*

CD30

Clone: IHC030 | **Source:** Mouse Monoclonal | **Positive Control:** Classic Hodgkin's Lymphoma, Lymphoma



Above: *GeneAb™ CD30 [IHC030] on Lymph Node*

Description

Cluster of Differentiation 30 (CD30) is a transmembrane cytokine receptor expressed by activated T- and B- cells. It is present on Reed-Sternberg cells in Hodgkin's lymphoma, most anaplastic large cell lymphomas, embryonal carcinomas, and primary cutaneous CD30 positive T-cell lymphoproliferative disorders. B-cell lymphomas are sometimes stained by Anti-CD30. Lymphomas exhibit Golgi zone accentuation when stained with Anti-CD30, while embryonal carcinomas produce membranous stains.

References

1. Schwarting R, et al. Blood. 1989; 74:1678-89. 2. George DH, et al. Am J Surg Pathol. 2003; 27:487-93. 3. Hedvat CV, et al. Hum Pathol. 2002; 33:968-74. 4. Schneider C, et al. Leuk Lymphoma. 2002; 43:1355-66. 5. Dürkop H, et al. Cell. 1992; 68:421-7. 6. Gorczyca W, et al. Int J Oncol. 2003; 22:319-24.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC030-100	$125
1 ml, Concentrate	IHC030-1	$260
7 ml, Predilute	IHC030-7	$145
3 Positive Control Slides	IHC030-PC	$160

Designations

IVD: RUO:

CD31

Clone: IHC031 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 31 (CD31) is present on hematopoietic stem cells (HSCs), and its expression is used to determine the concentration of HSCs in research studies and for bone marrow transplantation. Anti-CD31 is very specific and sensitive for endothelial cells and does not stain non-vascular tumours, therefore CD31 staining is used to recognize the vascular origins of neoplasms.

References

1. Parums DV, et al. J Clin Pathol. 1990; 43:752-7. 2. DeYoung BR, et al. Applied Immunohistochemistry. 1993; 1:97-100. 3. Govender D, et al. J Clin Pathol. 1997; 50:490-3. 4. Newman PJ, et al. Arterioscler Thromb Vasc Biol. 2004; 23:953-64. 5. DeYoung BR, et al. J Cutan Pathol. 1995; 22:215-22. 6. Fox S, et al. J Natl Cancer Inst. 1997; 89:1044-9.

Reference Panels

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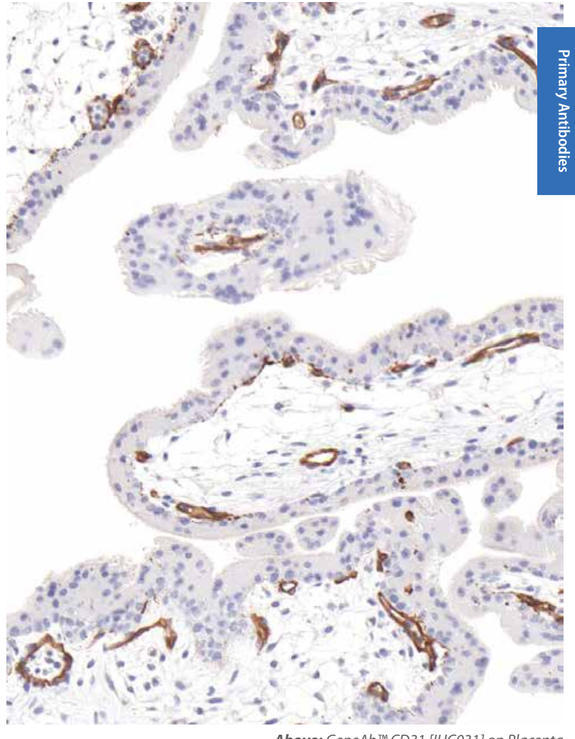
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC031-100	$110
1 ml, Concentrate	IHC031-1	$375
7 ml, Predilute	IHC031-7	$255
3 Positive Control Slides	IHC031-PC	$115

Designations

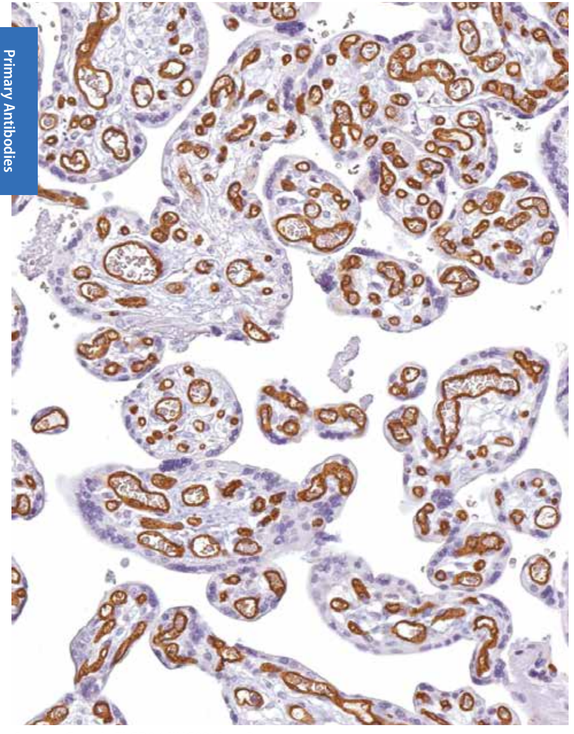
IVD: RUO:



Above: *GeneAb™ CD31 [IHC031] on Placenta*

CD34

Clone: IHC034 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Placenta



***Above:** GeneAb™ CD34 [IHC034] on Placenta*

Description

Cluster of Differentiation 34 (CD34) is a transmembrane glycoprotein expressed on hematopoietic stem and progenitor cells, vascular endothelium, embryonic fibroblasts, and rare glial cells in nervous tissue. CD34 is the most used marker for characterizing blasts in leukemia. CD34 is also present in some soft tissue tumours including solitary fibrous tumours and gastrointestinal stromal tumours. Proliferating endothelial cells seem to upregulate CD34 expression. Although specificity is low, Anti-CD34 reacts positively with more than 85% of angiosarcoma and Kaposi's sarcoma.

References

1. Nielsen JS, et al. J Cell Sci. 2008; 121:3683-92. 2. Kong Y, et al. Leukemia. 2008; 22:1207-13. 3. Kisluk J, et al. Adv Clin Exp Med. 2013; 22:33-9. 4. Ramani P, et al. Histopathology. 1990; 17:237-42. 5. Sankey EA, et al. J Pathol. 1990; 161:267-71. 6. Mikalsen LT, et al. Anticancer Res. 2011; 31:4053-60.

Reference Panels

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Soft Tissue	302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC034-100	$130
1 ml, Concentrate	IHC034-1	$535
7 ml, Predilute	IHC034-7	$325
25 ml, Predilute	IHC034-25	$1,250
3 Positive Control Slides	IHC034-PC	$115

Designations

IVD: RUO:

CD35

Clone: IHC035 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 35 (CD35), also known as **Erythrocyte Complement Receptor 1 (CR1)** or **C3b/C4b,** is commonly found on erythrocytes, B- and T-cells, monocytes, eosinophils, and neutrophils. It functions to mediate the clearance of opsonized targets. CD35 is a mature B-lymphocyte marker, and Anti-CD35 reacts positively with normal and tumourous follicular dendritic reticulum cells.

References

1. Pileri SA, et al. Histopathology. 2002; 41:1-29. 2. Dillon K, et al. J Clin Pathol. 2002; 55:791-4. 3. Maeda K, et al. J Histochem Cytochem. 2002; 50:1475-85. 4. Chan AC, et al. Histopathology. 2001; 38:510-8.

Reference Panels

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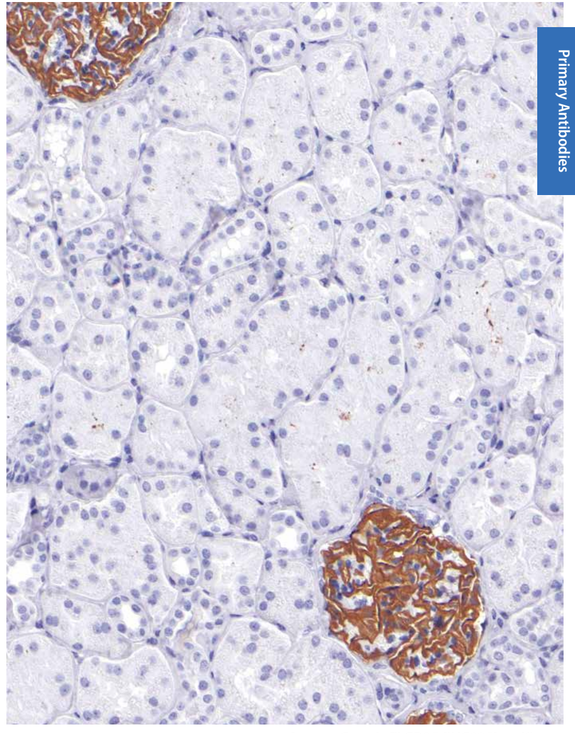
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC035-100	$165
1 ml, Concentrate	IHC035-1	$535
7 ml, Predilute	IHC035-7	$380
3 Positive Control Slides	IHC035-PC	$115

Designations

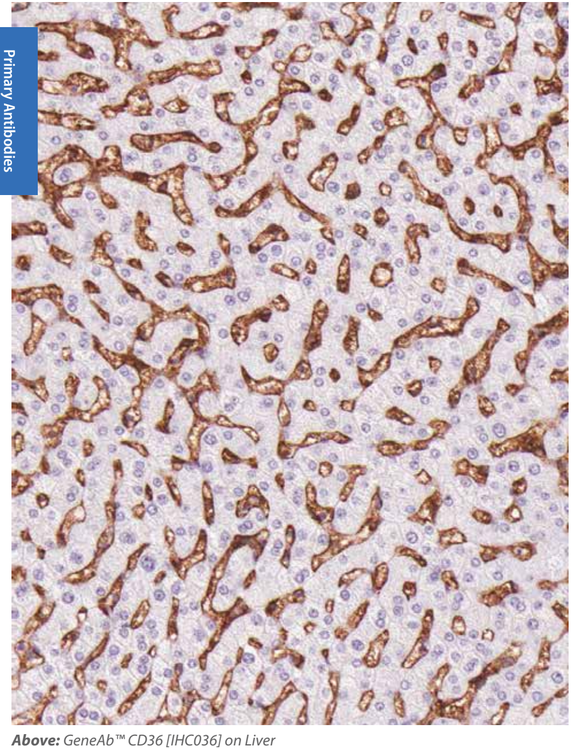
IVD: RUO:



***Above:** GeneAb™ CD35 [IHC035] on Kidney*

CD36

Clone: IHC036 | **Source:** Mouse Monoclonal | **Positive Control:** Heart



Above: *GeneAb™ CD36 [IHC036] on Liver*

Description

Cluster of Differentiation 36 (CD36), a surface glycoprotein present on platelets, mononuclear phagocytes, adipocytes, hepatocytes, myocytes, and some epithelia, plays a role in angiogenesis, immunity, and metabolism. During *Plasmodium falciparum* infection, CD36 is present on endothelial cells and erythrocytes. CD36 is used as an early marker of bone marrow and erythroid differentiation, and Anti-CD36 is also reactive with endothelial cells and adipocytes.

References

1. Silverstein RL, et al. Oxford University Press. 1995; 1269-71. 2. Knapp W, et al. Oxford University Press. 1989. 3. Silverstein RL, et al. Sci Signal. 2009; 2:re3. 4. Yildirim A, et al. Saudi Med J. 2004; 25:308-12.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC036-100	$210
1 ml, Concentrate	IHC036-1	$980
7 ml, Predilute	IHC036-7	$520
3 Positive Control Slides	IHC036-PC	$275

Designations

IVD: RUO:

CD38

Clone: IHC038 | **Source:** Mouse Monoclonal | **Positive Control:** Plasma Cell Myeloma, Plasma Cells, Lymph Node, Bone Marrow

Description

Cluster of Differentiation 38 (CD38) is an ontogenesis marker in T-cells which is also expressed in erythrocytes, platelets, prostate epithelial cells, islet cells, smooth and striated muscle cells, renal tubules, and retinal ganglial cells. CD38(+) stained B-cells are mainly present in germinal centers of secondary lymphoid organs, while the marginal zone is usually negative. A panel of CD38, CD138, MUM1, and EMA is very useful for the diagnosis of immunodeficiency-related lymphoma, such as plasmablastic lymphoma, primary effusion lymphoma, and large B-cell lymphoma in Castleman's disease. Recent research has found a panel of CD38, CD44, and TCL-1 to be useful in recognizing large B-cell lymphoma with c-Myc gene rearrangement, making it important in differential diagnoses of diffuse large B-cell lymphoma, Burkitt's lymphoma, and B-cell lymphoma.

References

1. Martin F, et al. Nat Rev Immunol. 2002; 2:323-35. 2. Dono M, et al. J Immunol. 2000; 164:5596-604. 3. Malavasi F, et al. Physiol Rev. 2008; 88:841-86. 4. Dave SS, et al. N Engl J Med. 2006; 354:2431-42. 5. Leoncini L, et al. IARC WHO Press Lyon France. 2008; 262-4. 6. Rodig S, et al. Am J Surg Pathol. 2008; 32:113-22. 7. Naresh KN, et al. Br J Haematol. 2011; 154:770-6.

Reference Panels

pg.
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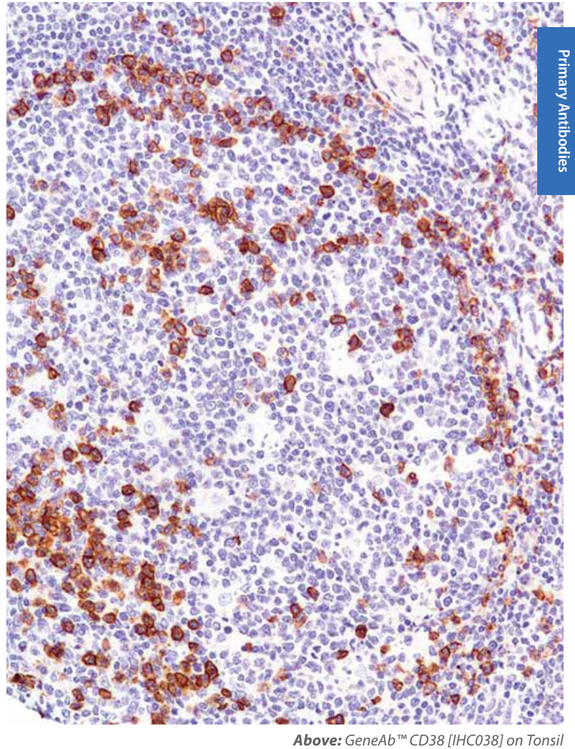
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC038-100	$200
1 ml, Concentrate	IHC038-1	$670
7 ml, Predilute	IHC038-7	$460
3 Positive Control Slides	IHC038-PC	$160

Designations

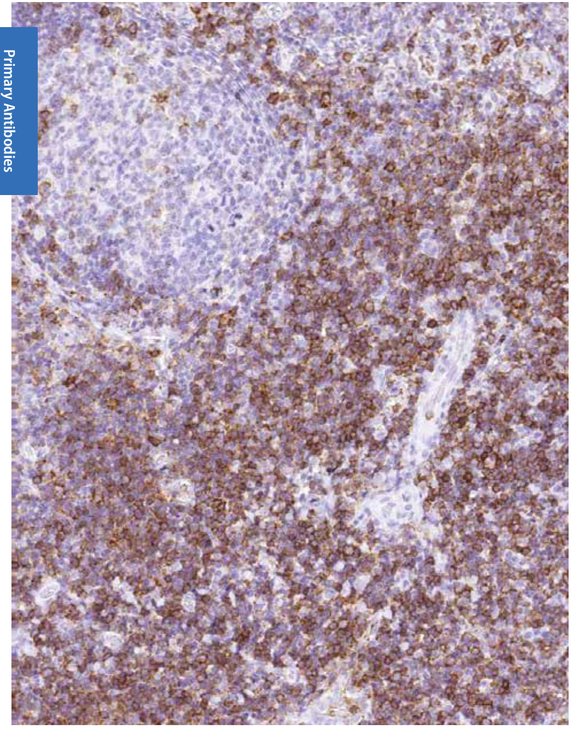
IVD: RUO:



Above: *GeneAb™ CD38 [IHC038] on Tonsil*

CD43

Clone: IHC043 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node



Above: *GeneAb™ CD43 [IHC043] on Tonsil*

Description

Cluster of Differentiation 43 (CD43), also known as **Sialophorin,** is a transmembrane protein that plays a role in T-cell activation. CD43 is normally expressed abundantly on the surface of differentiated hematopoietic stem cells, including monocytes, granulocytes, T-lymphocytes, and some B-lymphocytes. Due to the efficacy of CD43 immunohistochemical staining in granulocytes, it is an effective marker for myeloid tumours, while other antibodies demonstrate weak staining under these conditions. Given the low reactivity of Anti-CD43 with B-cells, positive staining of CD43 is implicated in a number of lymphoid and myeloid tumours, with over 90% positive staining in T-cell lymphomas. When CD43 is used in combination with CD45 and L26, immunotyping of various lymphomas can be obtained; this is particularly true when co-staining a lymphoid infiltrate with CD20 and CD3.

References

1. Arber DA, et al. Applied Immunohistochemistry. 1993; 1:17-30. 2. Strickler J, et al. Hum Pathol. 1987; 18:808-14.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC043-100	$90
1 ml, Concentrate	IHC043-1	$345
7 ml, Predilute	IHC043-7	$235
3 Positive Control Slides	IHC043-PC	$115

Designations

IVD: RUO:

CD44

Clone: IHC044 | **Source:** Mouse Monoclonal | **Positive Control:** Benign Urothelium

Description

Cluster of Differentiation 44 (CD44) is a glycoprotein receptor for hyaluronic acid that plays a fundamental role in cellular adhesion, stromal binding, migration, and cell-cell interactions. Positive staining with Anti-CD44 is implicated in a multitude of different cancer types, including breast, prostatic, renal cell, colonic, hepatocellular, and genitourinary carcinomas, as well as non-Hodgkin's Lymphoma, metastatic melanoma, gastric cancer, and some soft tissue tumours. It has also been demonstrated that there is a positive correlation between tumour progression and increased expression of CD44v, a high molecular weight CD44 isoform that has been described in epithelial cells. Given the expression of CD44 in a wide range of cancers, the most practical application of CD44 immunostaining is its use in discriminating between urothelial transitional cell carcinoma *in situ* from non-neoplastic changes in the urothelium.

References

1. Li F, et al. Cell Res. 2007; 17:3-14. 2. Ponta H, et al. Nat Rev Mol Cell Biol. 2003; 4:33-45.

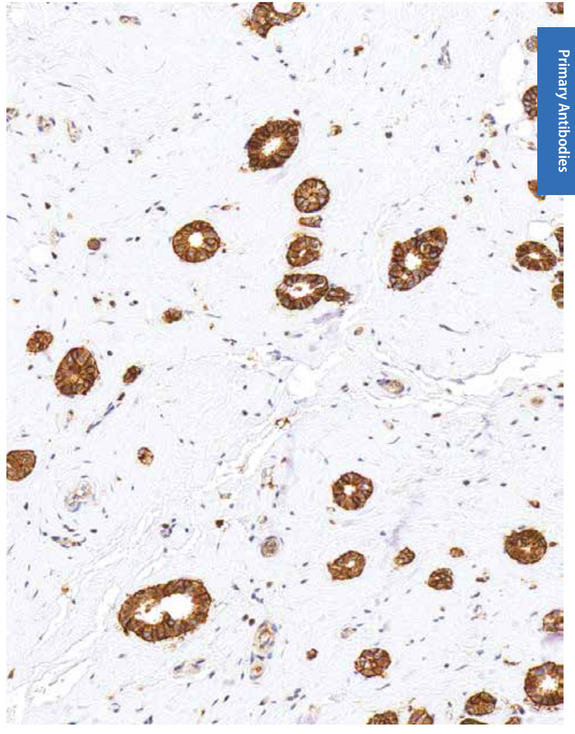
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC044-100	$115
1 ml, Concentrate	IHC044-1	$415
7 ml, Predilute	IHC044-7	$190
3 Positive Control Slides	IHC044-PC	$160

Designations

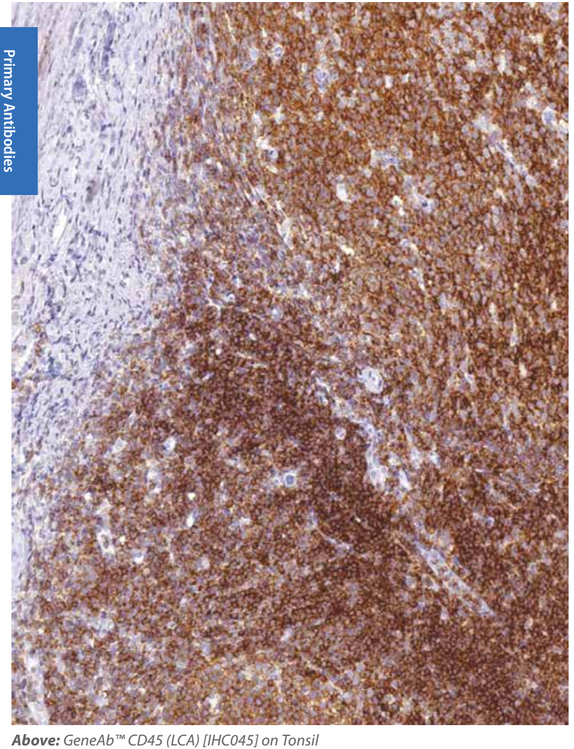
IVD: RUO:



Above: *GeneAb™ CD44 [IHC044] on Breast Cancer*

CD45 (LCA)

Clone: IHC045 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node, Lymphoma



Above: *GeneAb™ CD45 (LCA) [IHC045] on Tonsil*

Description

Cluster of Differentiation 45 (CD45), also known as **Leukocyte Common Antigen (LCA),** is a member of the protein tyrosine phosphatase (PTPase) family that is known to regulate a variety of cellular processes including cell growth, differentiation, the mitotic cycle, and oncogenic transformation. CD45 is expressed in most nucleated cells of hematopoietic origin, and is an essential regulator of T- and B-cell antigen receptor signaling. Anti-CD45 positively stains the majority of lymphoid neoplasms, and is highly indicative of lymphoid origin. However, an absence of CD45 does not rule out lymphoid tumours, as certain types of neoplasms lack CD45, such as Hodgkin's lymphoma, some T-cell lymphomas, and some leukemias.

References

1. Kurtin PJ, et al. Hum Pathol. 1985; 16:353-65. 2. Michels S, et al. Arch Pathol Lab Med. 1987; 111:1035-39. 3. Muzaffar S, et al. JPMA J Pak Med Assoc. 1997; 47:106-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC045-100	$110
1 ml, Concentrate	IHC045-1	$255
7 ml, Predilute	IHC045-7	$145
25 ml, Predilute	IHC045-25	$410
3 Positive Control Slides	IHC045-PC	$115

Designations

IVD: RUO:

CD45R

Clone: IHC536 | **Source:** Mouse Monoclonal | **Positive Control:** Lymph Node, Tonsil

Description

CD45R, also known as **MB1,** is an isoform of CD45 that is a member of the protein tyrosine phosphatase (PTPase) family. CD45R is expressed specifically on the surface of hematopoietic cells, and has demonstrated function as a regulator of the antigen and cytokine receptor signaling of B- and T-cells. Given that the antigen is located in the membrane of all B-cells, with the exception of plasma cells and some mature T-cells, Anti-CD45R exhibits specific reactivity with most B-lymphocytes. The use of Anti-CD45R is primarily useful in distinguishing B-cell lymphomas from T-cell lymphomas, with specific reactivity to follicle center cells, mantle cells, some medullary thymocytes, and 80% of B-cell lymphomas.

References

1. Myskow M, et al. Am J Clin Pathol. 1988; 90:564-74. 2. Shin S, et al. Hum Pathol. 1992; 23:686-94.

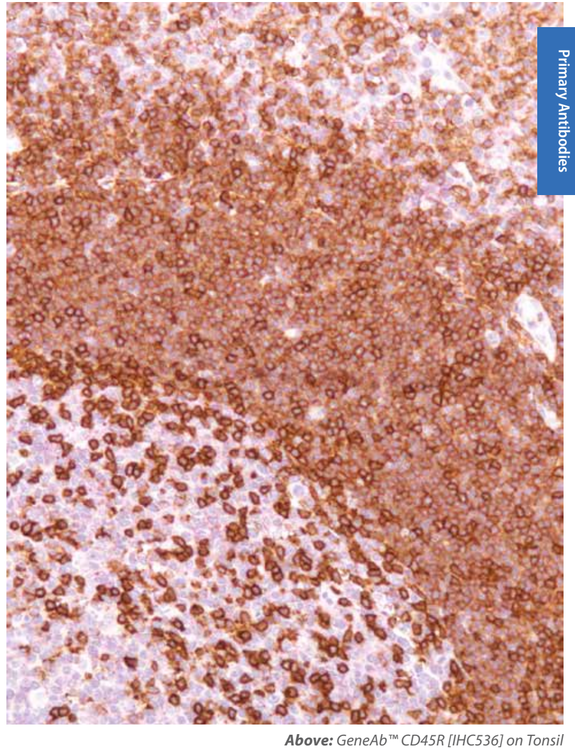
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC536-100	$135
1 ml, Concentrate	IHC536-1	$420
7 ml, Predilute	IHC536-7	$255
3 Positive Control Slides	IHC536-PC	$115

Designations

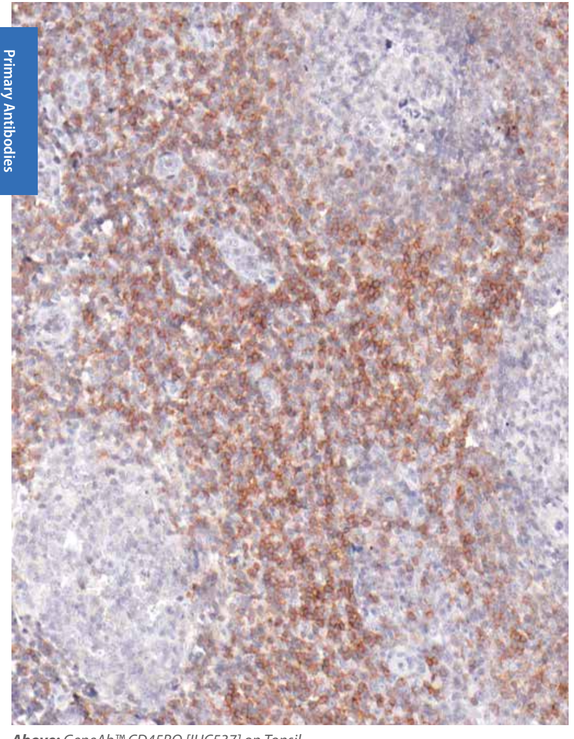
IVD: RUO:



Above: *GeneAb™ CD45R [IHC536] on Tonsil*

CD45RO

Clone: IHC537 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ CD45RO [IHC537] on Tonsil*

Description

CD45RO is an isoform of CD45 which is expressed in thymocytes, activated T-cells, and subpopulations of resting T-cells. It is a useful marker for T-cell tumours, as Anti-CD45RO demonstrates no reactivity with B-cells. Specifically, CD45RO is implicated in a number of T-cell lymphomas including angioimmunoblastic, lymphoblastic, peripheral, and subcutaneous panniculitis-like T-cell lymphomas.

References

1. Hall P, et al. J Clin Pathol. 1987; 40:151-6. 2. Cabecadas J, et al. Histopathology. 1991; 19:419-24. 3. Tworek J, et al. Am J Clin Pathol. 1998; 110:582-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC537-100	$120
1 ml, Concentrate	IHC537-1	$280
7 ml, Predilute	IHC537-7	$260
3 Positive Control Slides	IHC537-PC	$115

Designations

IVD: RUO:

CD56

Clone: IHC056 | **Source:** Mouse Monoclonal | **Positive Control:** Neuroblastoma

Description

Cluster of Differentiation 56 (CD56), also known as **Neural-Cell Adhesion Molecule (NCAM),** is a glycoprotein involved in synaptic plasticity, cell-cell adhesion, neurite outgrowth, learning, and memory. NCAM is expressed in normal neurons, glia, natural killer cells, activated T-cells, brain and cerebellum, neuroendocrine tissues, and skeletal muscle. Anti-CD56 recognizes a number of tumours including myeloma, myeloid leukemia, natural killer/T-cell lymphomas, neuroendocrine tumours, pancreatic acinar-cell carcinoma, pheochromocytoma, and Wilm's tumour. CD56 is detectable in neoplasms that are neuroectodermally-derived, such as retinoblastoma, medulloblastomas, astrocytomas, small cell carcinomas, and neuroblastomas. It has also been linked to rhabdomyosarcoma, a tumour that is mesodermally-derived.

References

1. Gattenlöhner S, et al. Am J Pathol. 2009; 174:1160-71. 2. Marafioti T, et al. Blood. 2008; 111:3778-92. 3. Chang CC, et al. Am J Clin Pathol. 2000; 114:807-11. 4. Savoia P, et al. Br J Dermatol. 1997; 137:966-71. 5. Natkunam Y, et al. J Cutan Pathol. 2000; 27:392-9. 6. Gerardy-Schahn R, et al. Int J Cancer Sup. 1994; 8:38-42. 7. Michalides R, et al. Int J Cancer Sup. 1994; 8:34-7.

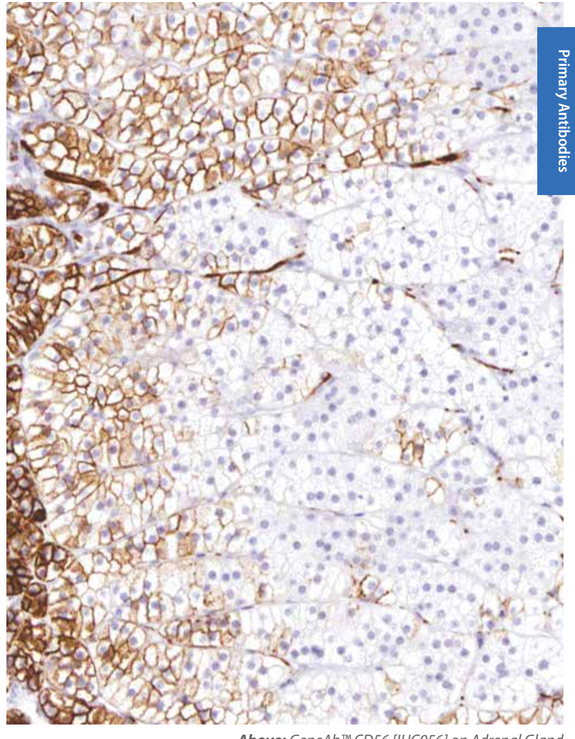
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC056-100	$120
1 ml, Concentrate	IHC056-1	$365
7 ml, Predilute	IHC056-7	$275
3 Positive Control Slides	IHC056-PC	$160

Designations

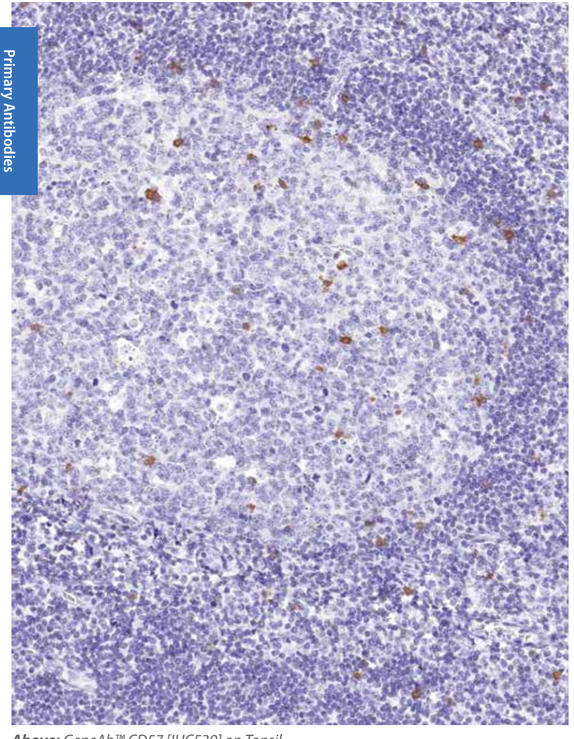
IVD: RUO:



Above: *GeneAb™ CD56 [IHC056] on Adrenal Gland*

CD57

Clone: IHC539 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ CD57 [IHC539] on Tonsil*

Description

Cluster of Differentiation 57 (CD57), also known as **NK-1,** is an antigen detectable in natural killer cells, some T-lymphocytes and normal peripheral blood mononuclear cells, myeloid cells, and a variety of polypeptides, lipids, and chondroitin sulfate proteoglycans. CD57 is indicated as a marker for tumours of neuroendocrine origin, including pheochromocytomas, paragangliomas, medulloblastomas, and carcinoid tumour, as well as various neural tumours including neuromas, neurofibromas, schwannomas, and granular cell tumours. CD57 is also detectable in ganglioneuroma and prostate carcinoma. Anti-CD57 is used to distinguish nodular lymphocyte-predominant Hodgkin's lymphoma from T-cell/histiocyte-rich large B-cell lymphoma, nodular sclerosis Hodgkin's disease, and follicular lymphoma.

References

1. Lanier LL, et al. J Immunol. 1983; 131:1789-96. 2. Ritchie AW, et al. Clin Exp Immunol. 1983; 51:439-47. 3. Caillaud JM, et al. Cancer Res. 1984; 44:4432-9. 4. Tucker, et al. Cell Differ. 1984; 14:223-30. 5. Abo T, et al. Cell Immunol. 1982; 73:376-84. 6. Khoury T, et al. Int J Exp Pathol. 2011; 92:87-96. 7. Boudova L, et al. Blood. 2003; 102:3753-8. 8. Dabbs DJ. 2014; 324.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC539-100	$120
1 ml, Concentrate	IHC539-1	$365
7 ml, Predilute	IHC539-7	$260
3 Positive Control Slides	IHC539-PC	$115

Designations

IVD: RUO:

CD61

Clone: IHC061 | **Source:** Mouse Monoclonal | **Positive Control:** Bone Marrow

Description

Cluster of Differentiation 61 (CD61), also known as **Glycoprotein IIIa** or **GPIIIa,** is an antigen expressed on megakaryocytes, platelets, myeloid cells, monocytes, endothelial cells, smooth muscle cells, and macrophages. It is involved in platelet aggregation and acts as a receptor for fibrinogen, fibronectin, von Willebrand factor, and vitronectin. Anti-CD61 is used for identifying megakaryocytopoiesis, as seen in megakaryoblastic leukemias, myelodysplastic disorders, and acute myeloid leukemias. CD61 is also indicated as a marker for platelet adhesion in advanced atherosclerosis and has been reported in the identification of fat embolism in pulmonary tissue.

References

1. Jiménez-Marín A, et al. Gene. 2008; 408:9-17. 2. Fox SB, et al. Histopathology. 1990; 17:69-74. 3. Thiele J, et al. Virchows Arch B Cell Pathol Incl Mol Pathol. 1992; 62:275-82. 4. Gonzalez J, et al. J Obes. 2014; 2014:591270. 5. Neri M, et al. Forensic Sci Int. 2010; 202:e13-7. 6. Meehan SM, et al. Hum Pathol. 2008; 39:550-6. 7. Thiele J, et al. Eur J Haematol. 1990; 44:63-70. 8. Thiele J, et al. Virchows Arch B Cell Pathol Incl Mol Pathol. 1990; 58:295-302. 9. Goldman BI, et al. Mod Pathol. 2001; 14:589-594. 10. Fox SB, et al. Histopathology. 1990; 17:69-74. 11. Duperray A, et al. Blood. 1989; 74:1603-11.

Reference Panels

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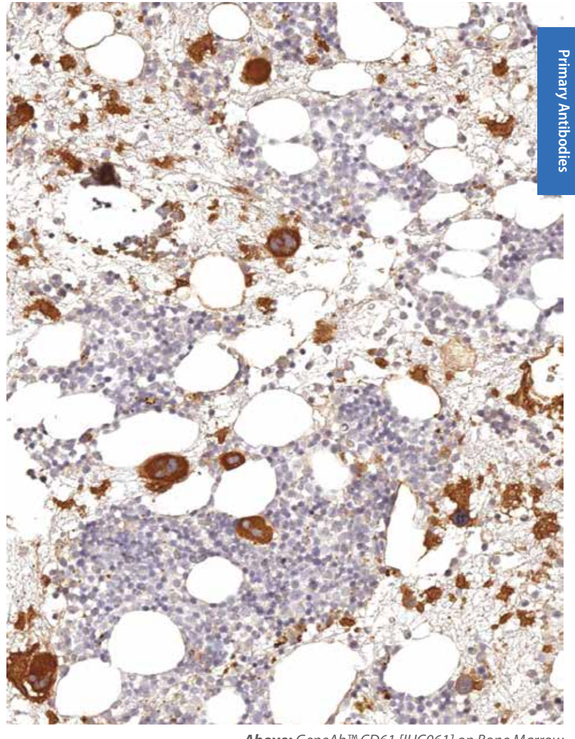
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC061-100	$125
1 ml, Concentrate	IHC061-1	$475
7 ml, Predilute	IHC061-7	$255
3 Positive Control Slides	IHC061-PC	$160

Designations

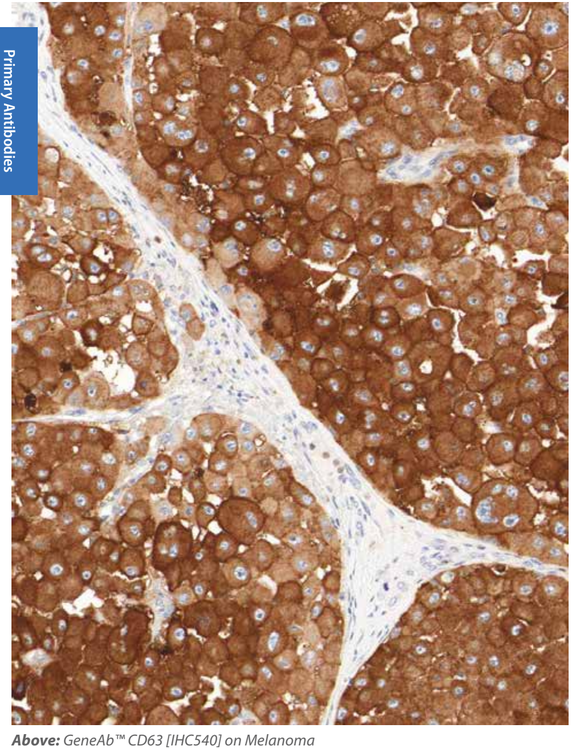
IVD: RUO:



Above: *GeneAb™ CD61 [IHC061] on Bone Marrow*

CD63

Clone: IHC540 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma



***Above:** GeneAb™ CD63 [IHC540] on Melanoma*

Description

Cluster of Differentiation 63 (CD63) is a lysosomal membrane glycoprotein identified as a platelet activation molecule. CD63 localizes to the membrane and cytoplasm of many cell types including lymphoid, myeloid, and endothelial cells. CD63 is a useful marker for malignant melanoma, and for distinguishing between renal oncocytoma and eosinophilic renal cell carcinoma.

References

1. Azorsa DO, et al. Blood. 1991; 78:280-4. 2. Skubitz KM, et al. J. Immunol. 1996; 157:3617-26. 3. Gwynn B, et al. Genomics. 1996; 35:389-91. 4. Barrio MM, et al. Hybridoma. 1998; 17:355-64. 5. Kwon MS, et al. Lung Cancer. 2007; 57:46-53.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC540-100	$115
1 ml, Concentrate	IHC540-1	$540
7 ml, Predilute	IHC540-7	$305
3 Positive Control Slides	IHC540-PC	$160

Designations

IVD: RUO:

CD68

Clone: IHC068 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 68 (CD68) is a heavily glycosylated transmembrane antigen that is detected in lysosomes, tissue macrophages, Langerhans cells, dendritic cells, monocytes, Kupffer cells, osteoclasts, and granulocytes. Anti-CD68 may be useful in identifying myelomonocytic and histiocytic tumours, and for differentiating between malignant fibrous histiocytoma and other pleomorphic sarcomas. However, other lysosome-rich cells may also stain, since Anti-CD68 detects a formalin-resistant epitope that may be associated with lysosomal granules.

References

1. Facchetti F, et al. Histopathology. 1991; 19:141-5. 2. Ruco LP, et al. Am J Clin Pathol. 1989; 92:273-9. 3. Cordell JL, et al. Oxford Univ Press, NY Tokyo. 1995; 925-7. 4. Pulford KAF, et al. J Clin Pathol. 1989; 42:414-21. 5. Vergier B, et al. Blood. 2000; 95:2212-8. 6. Martinez-Pomares L, et al. Immunobiology. 1996; 195:407-16. 7. Snow JL, et al. Br J Dermatol. 1995; 133:71-6. 8. Davey FR, et al. Am J Clin Pathol. 1990; 93:S17-26. 9. Horny HP, et al. Hum Pathol. 1993; 24:355-8. 10. Carbone A, et al. Hum Pathol. 1993; 24:886-96. 11. Gottfried E, et al. Scand J Immunol. 2008; 67:453-63. 12. Kunz-Schughart LA, et al. Verh Dtsch Ges Pathol. 2003; 87:215-23. 13. Horny HP, et al. Hum Pathol. 1994; 25:810-4.

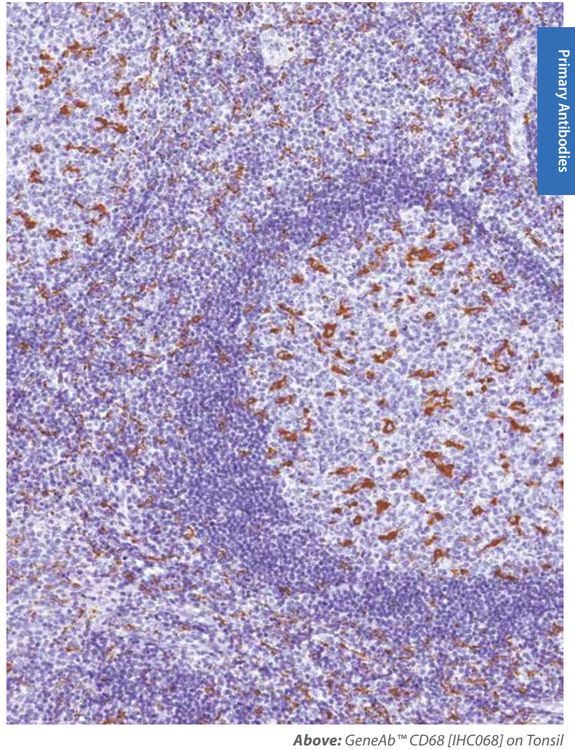
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC068-100	$95
1 ml, Concentrate	IHC068-1	$255
7 ml, Predilute	IHC068-7	$145
3 Positive Control Slides	IHC068-PC	$115

Designations

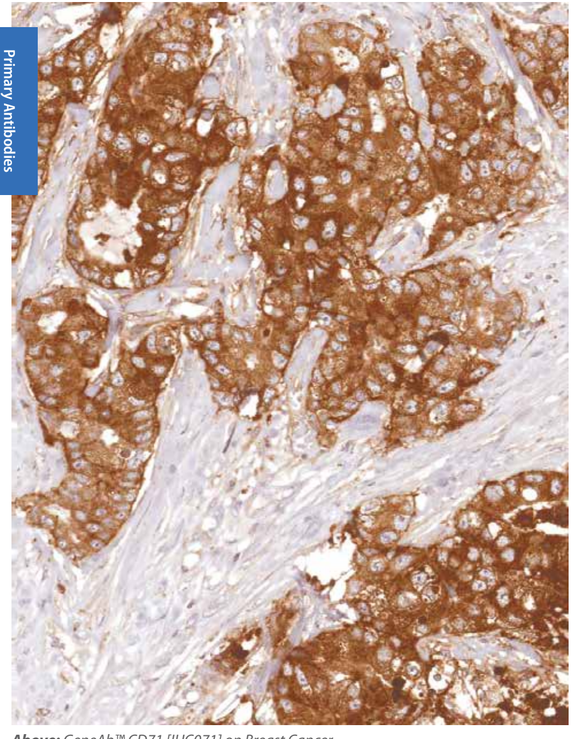
IVD: RUO:



***Above:** GeneAb™ CD68 [IHC068] on Tonsil*

CD71

Clone: IHC071 | **Source:** Mouse Monoclonal | **Positive Control:** Bone Marrow



Above: *GeneAb™ CD71 [IHC071] on Breast Cancer*

Description

Cluster of Differentiation 71 (CD71), also known as **Transferrin Receptor Protein 1 (TfR1)** or the transferrin receptor, is a cell surface proliferation marker that is involved in the cellular uptake of iron. CD71 is most highly expressed in early erythroid precursors and is fully absent from mature erythrocytes; CD71 is therefore highly useful as a marker for erythroid components within bone marrow biopsy specimens, without interference from mature erythrocytes. CD71 expression has been indicated in invasive breast carcinoma with acquired resistance to tamoxifen, and has been linked to poor prognosis in ER+/luminal-like breast cancer. Anti-CD71 is used in the determination of erythroid leukemia, benign erythroid proliferative disorders, and myelodysplastic syndrome.

References

1. Miwa H, et al. Leuk Lymphoma. 1996; 21:239-44. 2. Saxena A, et al. Am J Hematol. 1998; 58:278-84. 3. Hodak E, et al. J Am Acad Dermatol. 2006; 55:276-84. 4. Went P, et al. J Clin Oncol. 2006; 24:2472-9. 5. Vonderheid EC. J Cutan Pathol 2006; 33:27-42. 6. Scala E, et al. J Invest Dermatol. 1999; 113:622-7. 7. Kim YH, et al. Semin Oncol. 1999; 26:276-89. 8. Cotta AC, et al. Appl Immunohistochem Mol Morphol. 2006; 14:291-5.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC071-100	$95
1 ml, Concentrate	IHC071-1	$480
7 ml, Predilute	IHC071-7	$220
3 Positive Control Slides	IHC071-PC	$160

Designations

IVD: RUO:

CD73

Clone: IHC073 | **Source:** Mouse Monoclonal | **Positive Control:** Placenta

Description

Cluster of Differentiation 73 (CD73), also known as **Ecto-5'-Nucleotidase (ecto-5'-NT),** is a cell surface enzyme found in most tissues. CD73 catalyzes the breakdown of AMP to adenosine, thereby modulating inflammatory and T-cell responses. Reports have implicated CD73 expression in tumour progression and carcinogenesis, as CD73 is a key regulatory molecule in the proliferation, migration, and invasion of cancer cells *in vitro*, as well as tumour angiogenesis and tumour immune escape *in vivo*. Due to this key involvement in cancer, CD73 has become an appealing target for cancer immunotherapy. CD73 expression has also been linked to favourable prognosis in breast carcinoma.

References

1. Habashy HO, et al. Breast Cancer Res Treat. 2010; 119:283-93. 2. Nakahata T, et al. Leuk Lymphoma. 1994; 13:401-9. 3. Marsee DK, et al. Am J Clin Pathol. 2010; 13:429-35. 4. Sutherland R, et al. Proc Natl Acad Sci USA. 1981; 78:4515-9. 5. Ponka P, et al. Int J Biochem Cell Biol. 1999; 31:1111-37. 6. Lesley J, et al. Cell Immunol. 1984; 83:14-25. 7. Sieff C, et al. Blood. 1982; 60:703-13. 8. Rabin M, et al. Am J Hum Genet. 1985; 37:1112-6.

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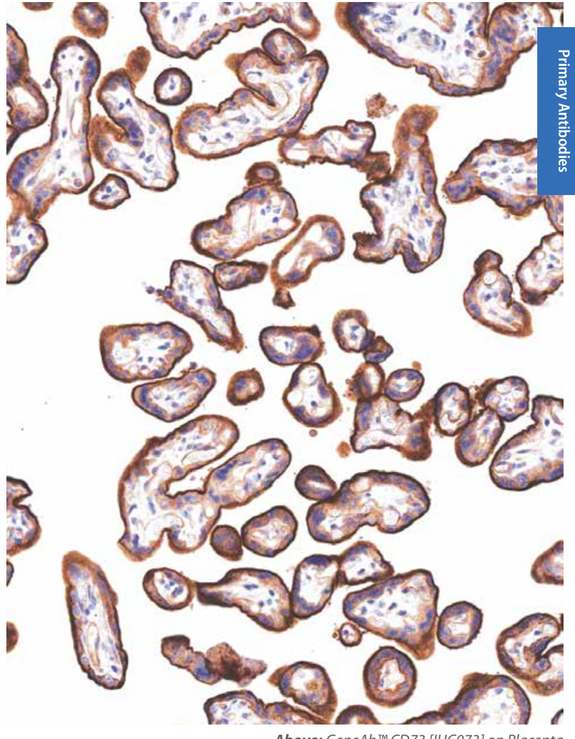
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC073-100	$210
1 ml, Concentrate	IHC073-1	$980
7 ml, Predilute	IHC073-7	$520
3 Positive Control Slides	IHC073-PC	$275

Designations

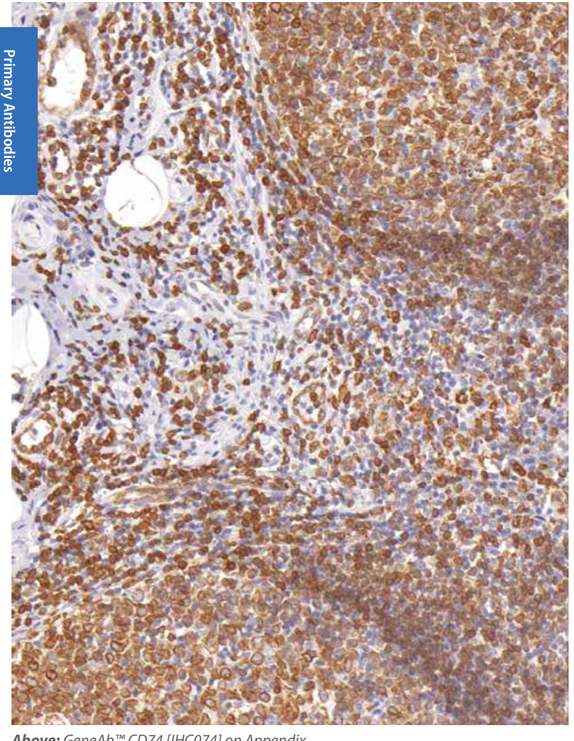
IVD: RUO:



Above: *GeneAb™ CD73 [IHC073] on Placenta*

CD74

Clone: IHC074 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node



Above: *GeneAb™ CD74 [IHC074] on Appendix*

Description

Cluster of Differentiation 74 (CD74), also known as the **MHC Class II-associated invariant chain (II),** is a transmembrane protein expressed mainly by epithelial cells and antigen-presenting cells, such as B-lymphocytes, macrophages, and monocytes. Anti-CD74 is used in distinguishing atypical fibroxanthoma from malignant fibrous histiocytoma, and Small Cell Lung Carcinoma (SCLC) from Non-Small Cell Lung Carcinoma (NSCLC). CD74 is clinically indicated as a marker for germinal center lymphocytes and B-cell lymphomas.

References

1. Supernat A, et al. Appl Immunohistochem Mol Morphol. 2012; 20:103-7. 2. Zhang B. Cancer Res. 2010; 70:6407-11. 3. Antonioli L, et al. Trends Cancer. 2016; 2:95-109. 4. Gao ZW, et al. Biomed Res Int. 2014; 2014:460654.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC074-100	$135
1 ml, Concentrate	IHC074-1	$390
7 ml, Predilute	IHC074-7	$220
3 Positive Control Slides	IHC074-PC	$115

Designations

IVD: RUO:

CD79a

Clone: IHC079 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 79a (CD79a) is a molecule that dimerizes with CD79b to form the B-cell antigen receptor complex that enables antigen presentation. CD79a is specifically expressed in B lineage cell lines including early progenitors, pre-B and mature B-cell lines, normal resting B-lymphocytes, and polyclonally activated B-cell blasts. Since Anti-CD79a and Anti-CD20 both react positively with lymphomas in many of the same cases, Anti-CD79a is frequently used in conjunction with Anti-CD20. In comparison to CD20, CD79a has a greater likelihood of staining plasma cell myeloma and some endothelia. CD79a also frequently stains acute promyelocytic leukemia (FAB-M3), but infrequently stains other types of myeloid leukemia.

References

1. Seda V, et al. Eur J Haematol. 2005; 94:193-205. 2. Sakaguchi N, et al. EMBO J. 1988; 7: 3457-64. 3. Mason DY, et al. Blood. 1995; 86:1453-9. 4. Pilozzi E, et al. J Pathol. 1998; 186:140-3.

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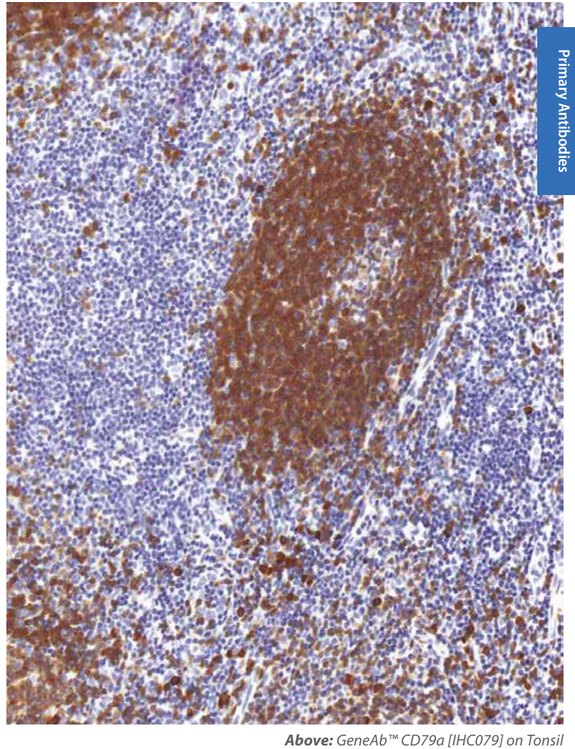
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC079-100	$165
1 ml, Concentrate	IHC079-1	$570
7 ml, Predilute	IHC079-7	$360
3 Positive Control Slides	IHC079-PC	$115

Designations

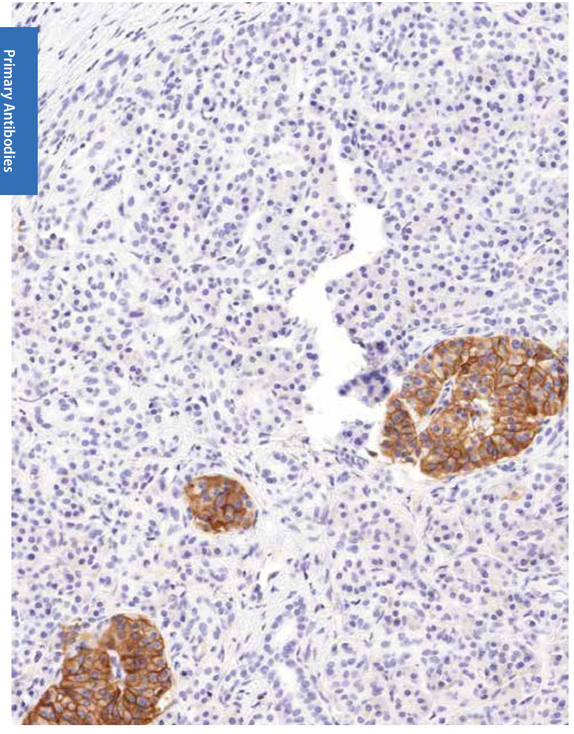
IVD: RUO:



Above: *GeneAb™ CD79a [IHC079] on Tonsil*

CD99

Clone: IHC099 | **Source:** Mouse Monoclonal | **Positive Control:** Ewing's Sarcoma, Pancreas



Above: *GeneAb™ CD99 [IHC099] on Pancreas*

Description

Cluster of Differentiation 99 (CD99) is a glycosylated transmembrane protein expressed by lymphocytes, cortical thymocytes, granulosa cells of the ovary, pancreatic islet cells, Sertoli cells, and endothelial cells. CD99 produces diffuse membrane staining patterns on nearly all Ewing's sarcoma and primitive peripheral neuroectodermal tumours. CD99 may be found in synovial sarcoma, neuroendocrine carcinoma, acute myeloid leukemia, mesenchymal chondrosarcoma, lymphoblastic lymphoma, small round blue cell tumours, solitary fibrous tumours, vascular tumours, and myeloid sarcoma. It produces heterogeneous staining patterns which must be accompanied by other antibody staining for a final diagnosis.

References

1. Rettig WJ, et al. Lab Invest. 1992: 66:133-7. 2. Fellinger EJ, et al. Amer J Surg Pathol. 1992; 16:746-55. 3. Dworzak MN, et al. Blood. 1994; 83:415-25. 4. Choi EY, et al. J Immunol. 1950; 161:749-54. 5. Bernard G, et al. Eur J Immunol. 2000; 30:3061-5. 6. Oh KI, et al. Exp Mol Med. 2007; 39:176-84. 7. Ambros IM, et al. Cancer. 1991; 67:1886-93.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC099-100	$155
1 ml, Concentrate	IHC099-1	$485
7 ml, Predilute	IHC099-7	$245
3 Positive Control Slides	IHC099-PC	$160

Designations

IVD: RUO:

CD117/c-kit

Clone: IHC526 | **Source:** Mouse Monoclonal | **Positive Control:** Gastrointestinal Stromal Tumour, Seminoma

Description

CD117 or **Proto-oncogene c-Kit (c-Kit)** is a member of the Tyrosine Kinase Receptor (TKR) family, and is an important cell surface marker found on hematopoietic stem cells, melanocytes, mast cells, Cajal cells, germ cells, basal cells of skin, and mammary ductal epithelia. It is considered an important marker in the diagnosis and classification of Gastrointestinal Stromal Tumours (GISTs), mast cell diseases, Acute Myeloid Leukemia (AML), Small Cell Lung Carcinoma (SCLC), and Ewing's sarcoma.

References

1. Yarden Y, et al. EMBO J. 1987; 6:3341-51. 2. Edling CE, et al. Int J Biochem Cell Biol. 2007; 39:1995-8. 3. Turner MS, et al. Arch Pathol Lab Med. 2009; 133:1370-4. 4. Tsuura Y, et al. Virchows Arch. 1994; 424:135-41. 5. Smithey BE, et al. Am J Surg Pathol. 2002; 26:486-92. 6. Natkunam Y, et al. Am J Surg Pathol. 2000; 24:81-91.

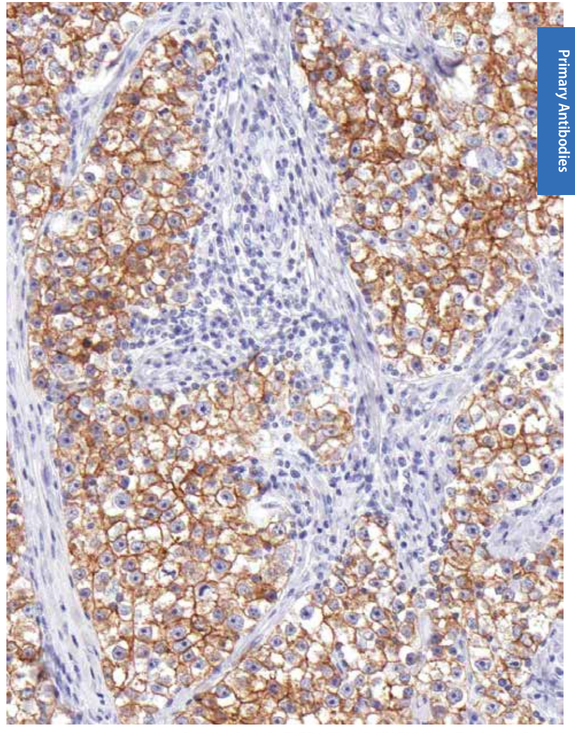
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC526-100	$145
1 ml, Concentrate	IHC526-1	$590
7 ml, Predilute	IHC526-7	$305
25 ml, Predilute	IHC526-25	$945
3 Positive Control Slides	IHC526-PC	$160

Designations

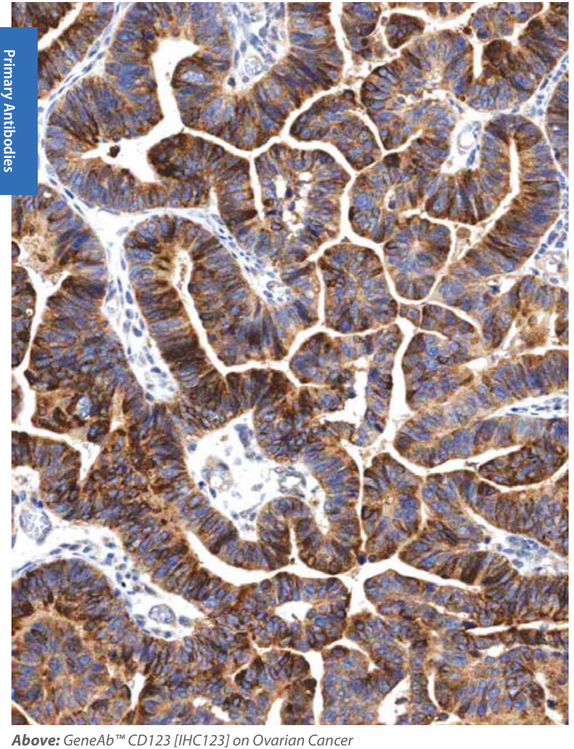
IVD: RUO:



Above: *GeneAb™ CD117/c-kit [IHC526] on Testicular Cancer*

CD123

Clone: IHC123 | **Source:** Mouse Monoclonal | **Positive Control:** Blastic Plasmacytoid, Dendritic Cell Neoplasm



Above: *GeneAb™ CD123 [IHC123] on Ovarian Cancer*

Description

Cluster of Differentiation 123 (CD123), also known as **Interleukin-3 Receptor,** plays an important role in regulating the immune system by transmitting interleukin-3 signals, thereby promoting proliferation and differentiation of hematopoietic stem cells. Studies suggest that the expression of CD123 is observed in most Acute Myeloid Leukemia (AML) subtypes, including leukemic stem cells. CD123 positive AML has demonstrated higher marrow blast percentages and monocytic differentiation, and clinical presentations for AML mostly include bone marrow involvement and regional lymphadenopathy. As there are overlapping clinical presentations between AML and blastic NK-cell lymphomas, differential diagnosis is important; use of a panel of CD123, CD4, CD56, and TCL-1 can help with this distinguishment between AML and myeloid involvement from blastic NK-cell lymphomas.

References

1. Cronin D, et al. Am J Clin Pathol. 2012; 137:367-76. 2. Rollins-Raval M, et al. Appl Immunohistochem Mol Morphol. 2013; 21:212-7.

Reference Panels

pg.
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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC123-100	$190
1 ml, Concentrate	IHC123-1	$615
7 ml, Predilute	IHC123-7	$410
3 Positive Control Slides	IHC123-PC	$200

Designations

IVD: RUO:

CD138

Clone: IHC138 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Cluster of Differentiation 138 (CD138), also known as **Syndecan-1,** is a transmembrane glycoprotein present on the surface of B-cells during late stage differentiation. Anti-CD138 is used to differentiate marginal zone lymphoma from lymphoplasmacytic lymphoma. ALK+ Large B-Cell Lymphoma (LBCL) commonly stains positively for CD138, but not for CD20 and CD79a. Anti-CD138 reacts positively with HHV8-associated primary effusion lymphoma that lacks B-cell markers. CD138 is also a useful marker for identifying and enumerating benign, reactive, or malignant plasma cells from the bone marrow biopsy samples.

References

1. Chilosi M, et al. Mod Pathol. 1999; 12:1101-6. 2. Sebestyén A, et al. Br J Haematol. 1999; 104:412-9. 3. Bayer-Garner IB, et al. Mod Pathol. 2001; 14:1052-8. 4. Said J, et al. WHO Press, Geneva, Switzerland. 261. 5. O'Connell FP, et al. Am J Clin Pathol. 2004; 121:254-63. 6. Colomo L, et al. Am J Surg Pathol. 2004; 28:736-47. 7. Carbone A, et al. Blood. 1998; 91:747-55.

Reference Panels

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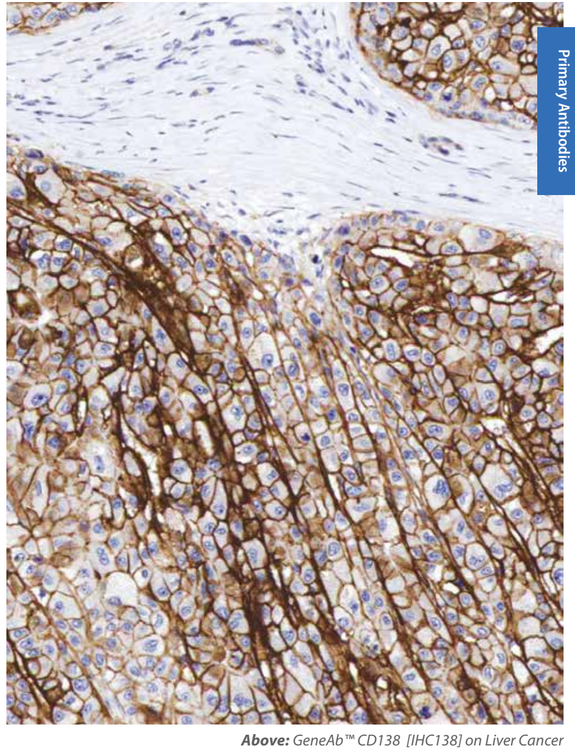
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC138-100	$125
1 ml, Concentrate	IHC138-1	$530
7 ml, Predilute	IHC138-7	$325
25 ml, Predilute	IHC138-25	$1,045
3 Positive Control Slides	IHC138-PC	$115

Designations

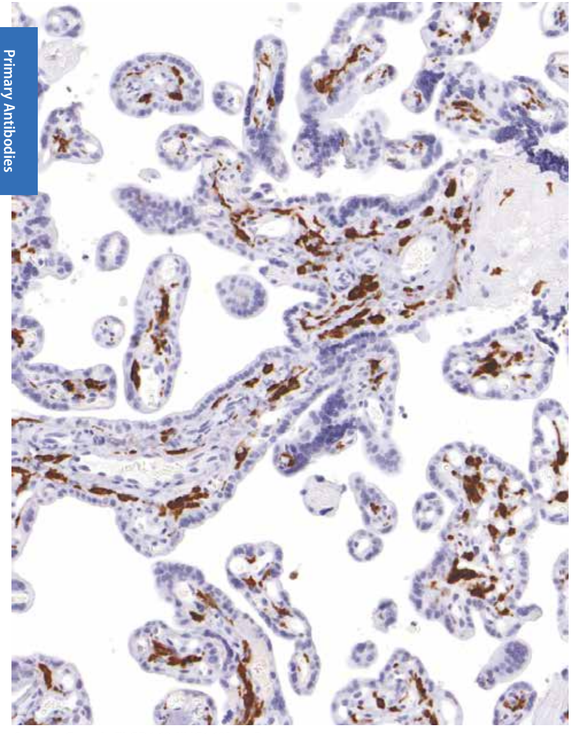
IVD: RUO:



Above: *GeneAb™ CD138 [IHC138] on Liver Cancer*

CD163

Clone: IHC163 | **Source:** Mouse Monoclonal | **Positive Control:** Inflamed Tissue



***Above:** GeneAb™ CD163 [IHC163] on Placenta*

Description

Cluster of Differentiation 163 (CD163) is a receptor found exclusively on the surface of monocytes and macrophages. The solubilized form in plasma is upregulated in inflammatory diseases such as rheumatoid arthritis, atherosclerosis, and Gaucher's disease, which supports recent studies that have found IL-10, glucocorticoids, and other inflammatory modulators to upregulate CD163 expression. CD163 staining is useful for differentiating synovial intimal fibroblasts from synovial macrophages in rheumatoid arthritis. Overexpression of CD163 is also present in patients with myelomonocytic leukemia dealing with microbial infections. CD163 expression is found in leukemias with monocytic differentiation and synovial-type giant cell tumours of the vertebral column.

References

1. Schaer D, et al. Blood. 2006; 107:373-80. 2. Weiss L,et al. Am J Clin Pathol. 2004; 1:794-801. 3. Jones K,et al. Clin Cancer Res. 2013; 19:731-42. 4. Backe E, et al. J Clin Pathol. 1991; 44:936-45. 5. Buechler C, et al. J Leukoc Biol. 2000; 67:97-103. 6. Hiraoka A, et al. Pathol Res Pract. 2005; 201:379-84. 7. Hogger P, et al. J Immunol. 1998; 161:1883-90.

Reference Panels

pg.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC163-100	$135
1 ml, Concentrate	IHC163-1	$560
7 ml, Predilute	IHC163-7	$285
3 Positive Control Slides	IHC163-PC	$115

Designations

IVD: RUO:

CDX-2

Clone: IHC402 | **Source:** Mouse Monoclonal | **Positive Control:** Colon

Description

CDX-2 is a caudal-related homeobox transcription factor that is expressed by intestinal epithelial cells. CDX-2 is a useful marker for gastrointestinal carcinoma and for determining the origin of gastrointestinal metastatic adenocarcinoma and carcinoid tumours. Anti-CDX-2 is used for differentiating lung and metastatic colorectal adenocarcinoma. However, mucinous ovarian carcinoma also reacts positively with Anti-CDX-2, thereby limiting the ability to differentiate from metastatic colorectal adenocarcinoma.

References

1. Suh E, et al. Mol Cell Biol. 1994; 14:7340-51. 2. Liu Q, et al. Mod Pathol. 2007; 20:1286-97. 3. Mazziotta RM, et al. Appl Immunohistochem Mol Morphol. 2005; 13:55-60. 4. Erickson LA, et al. Endocr Pathol. 2004; 15:247-5. 5. Kaimaktchiev V, et al. Mod Pathol. 2004; 17:1392-9. 6. Werling RW, et al. Am J Surg Pathol. 2003; 27:303-10. 7. Scholl C, et al. J Clin Invest. 2007; 117:1037-48.

Reference Panels

pg.

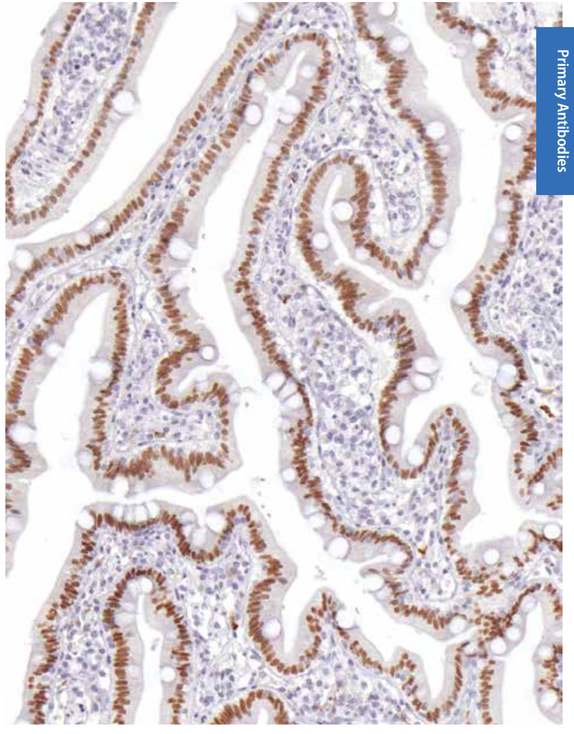
- Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC402-100	$155
1 ml, Concentrate	IHC402-1	$635
7 ml, Predilute	IHC402-7	$370
25 ml, Predilute	IHC402-25	$1,175
3 Positive Control Slides	IHC402-PC	$115

Designations

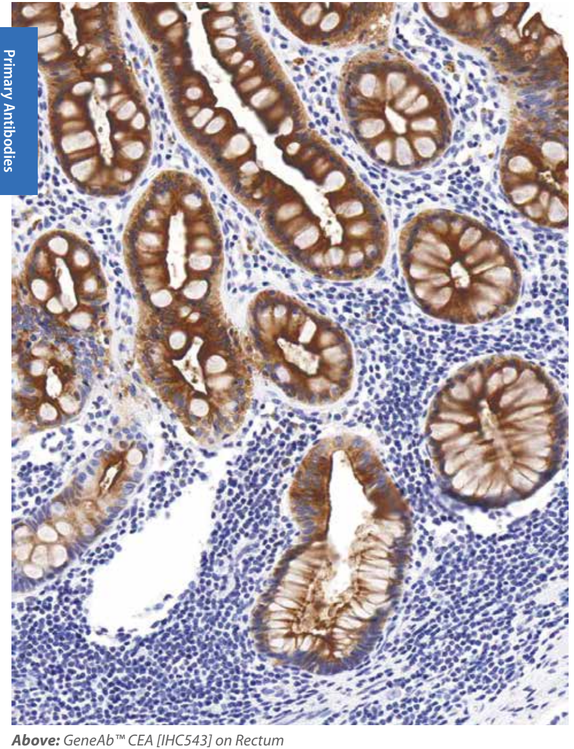
IVD: RUO:



***Above:** GeneAb™ CDX-2 [IHC402] on Duodenum*

CEA

Clone: IHC543 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Adenocarcinoma, Colon Mucosa



Above: *GeneAb™ CEA [IHC543] on Rectum*

Description

Carcinoembryonic Antigen (CEA) describes a set of glycophosphatidyl inositol and transmembrane cell-surface-anchored glycoproteins involved in cell adhesion, differentiation, anoikis, polarization, and tissue architecture. CEA staining, along with Calretinin, CK 5/6, D2-40, HBME-1, Napsin A, MOC-31, and Ber-EP4, is used to help differentiate between adenocarcinoma and mesothelioma. Staining with Anti-CEA is also suggested to be useful in identifying the origin of metastatic adenocarcinoma. CEA is an effective marker for adenocarcinomas of the lung, colon, stomach, esophagus, pancreas, gallbadder, urachus, salivary gland, ovary, and endocervix.

References

1. Obrink B, et al. Curr Opin Cell Biol. 1997; 9:616-26. 2. Screaton RA, et al. J Cell Biol. 1997; 137:939-5. 3. Duffy M, et al. Clin Chem. 2001; 47: 624-30. 4. Sanders DSA, et al. J Pathol. 1994; 172:343-8. 5. Bhatnagar J, et al. Anticancer Res. 2002; 22:1849-57. 6. Lagandijk JH, et al. J Clin Pathol. 1999; 52:283-90. 7. Abutaily AS, et al. J Clin Pathol. 2002; 55:662-8.

Reference Panels

	pg.
Cytopathology	n/a

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC543-100	$100
1 ml, Concentrate	IHC543-1	$255
7 ml, Predilute	IHC543-7	$145
3 Positive Control Slides	IHC543-PC	$115

Designations

IVD: RUO:

Chromogranin A

Clone: IHC544 | **Source:** Mouse Monoclonal | **Positive Control:** Pancreas

Description

Chromogranin A is localized in secretory granules of neurons and endocrine cells in tissues, including pituitary, adrenal medulla, thyroid, pancreatic islets, and gastrointestinal tract. Neuroendocrine cells exhibit a fine granular immunoreactivity to Anti-Chromogranin A. It is widely recognized that co-expression of keratins and chromogranin A implies a neuroendocrine lineage. High expression of chromogranin A and negative staining with Anti-Keratin is a possible indication of paraganglioma. Positive staining for chromogranin A and neuron-specific enolase is representative of neuroendocrine neoplasms. Many pituitary adenomas and prolactinomas stain positively for chromogranin A.

References

1. Helman LJ, et al. J Biol Chem. 1988; 263:11559-63. 2. Iacangelo AL, et al. Regul Pept. 1995; 58:65-88. 3. Hendy GN, et al. Clin Invest Med. 1995; 18:47-65. 4. Kokubo H, et al. Urology. 2005; 66:135-40. 5. Conlon JM, et al. Regul Pept. 2010; 165:5-11.

Reference Panels

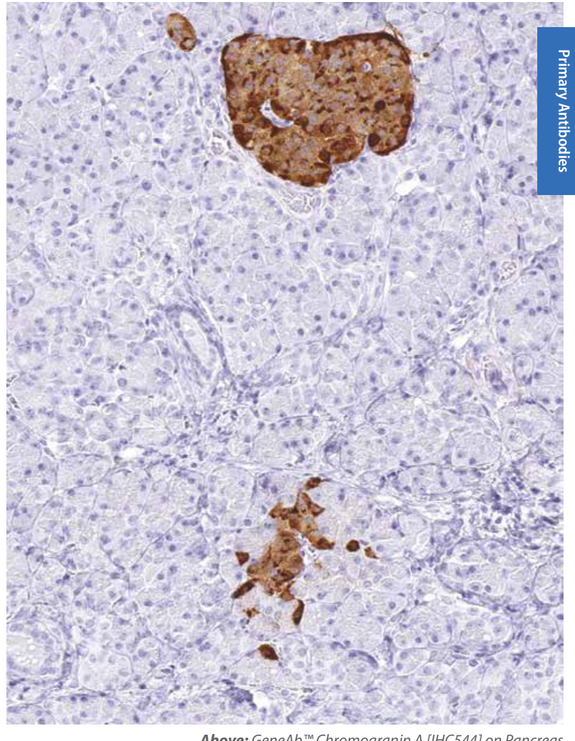
	pg.
Gastrointestinal (GI)	283
Head and Neck	288
Pediatric	300

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC544-100	$120
1 ml, Concentrate	IHC544-1	$255
7 ml, Predilute	IHC544-7	$145
3 Positive Control Slides	IHC544-PC	$115

Designations

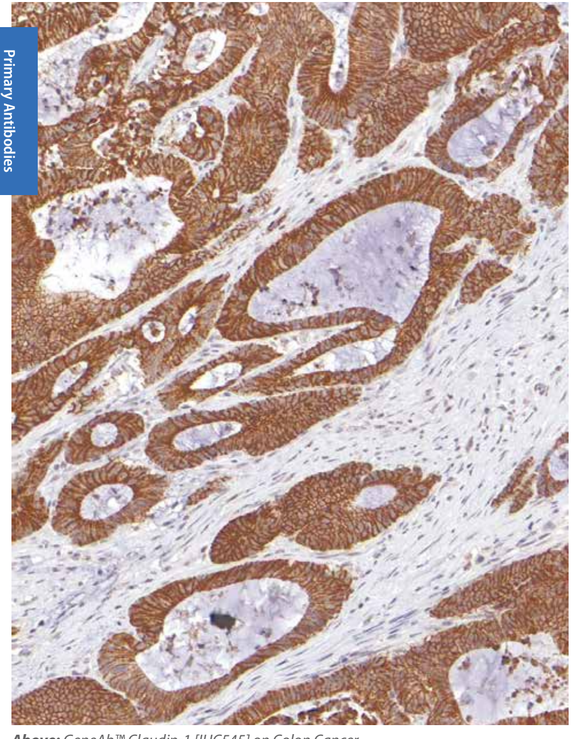
IVD: RUO:



Above: *GeneAb™ Chromogranin A [IHC544] on Pancreas*

Claudin-1

Clone: IHC545 | **Source:** Mouse Monoclonal | **Positive Control:** Neurofibroma, Colon Carcinoma



***Above:** GeneAb™ Claudin-1 [IHC545] on Colon Cancer*

Description

Claudin-1 is a component of tight junctions, which regulate permeability in epithelial and endothelial cell sheets. Anti-Claudin-1 stains the membrane of almost all carcinomas, and produces a stronger staining intensity than normal tissues. A panel of antibodies against Claudin-1, EMA, S-100, and GLUT1 is useful for diagnosing perineurioma and neurofibroma. As Claudin-1 is also present in meningiomas, staining for Claudin 1, S-100, CD34, EMA, and glial fibrillary acidic protein (GFAP) in concert could be useful in distinguishing meningiomas from histologically similar samples.

References

1. Folpe AL, et al. Am J Surg Pathol. 2002; 26:1620-6. 2. Hornick JL, et al. Am J Surg Pathol. 2005; 29:845-58. 3. Soini Y. Histopathology. 2005; 47:551-60. 4. Smith ME, et al. Histopathology. 2005; 47:575-81. 5. Liu Y, et al. Lung Cancer. 2007; 56:307-17. 6. Macarenco RS, et al. Arch Pathol Lab Med. 2007; 131:625-36.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC545-100	$135
1 ml, Concentrate	IHC545-1	$610
7 ml, Predilute	IHC545-7	$370
3 Positive Control Slides	IHC545-PC	$205

Designations

IVD: RUO:

Clusterin/Apolipoprotein J

Clone: IHC546 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node, Placenta, Colon, Kidney, Brain, and Liver

Description

Clusterin/Apolipoprotein J is normally found in epithelial cells, semen, plasma, breast milk, cerebrospinal fluid, and urine, and is involved in apoptosis and the clearance of cellular debris. It is present in hematopoietic and non-hematopoietic cancers, as well as most systemic anaplastic large cell lymphomas. Anti-Clusterin/Apolipoprotein J in a panel with other antibodies is useful for differentiating systemic anaplastic large cell lymphoma from classic Hodgkin's disease. Anti-Clusterin/Apolipoprotein J also displays high sensitivity and specificity for follicular dendritic cell tumours. Clusterin overexpression is linked to recurrence and poor prognosis in breast cancer, and chemosensistivity and poor survival in cervical cancer.

References

1. Lin CC, et al. J Hepatol. 2014; 61:984-93. 2. Fu Y, et al. Mol Med Rep. 2013; 7:1726-32. 3. Shannan B, et al. Cell Death Differ. 2006; 13:12-9. 4. Koltai T. Onco Targets Ther. 2014; 7:447-56. 5. Lae ME, et al. Am J Clin Pathol. 2002; 118:773-9.

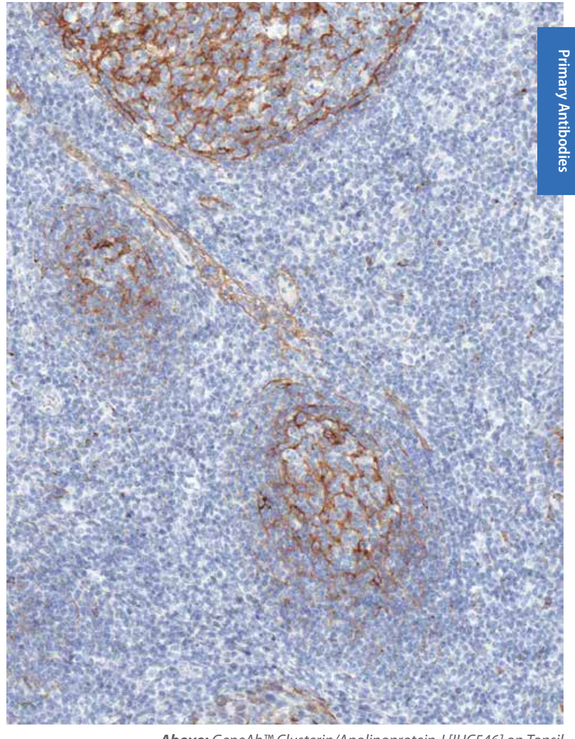
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC546-100	$135
1 ml, Concentrate	IHC546-1	$495
7 ml, Predilute	IHC546-7	$315
3 Positive Control Slides	IHC546-PC	$170

Designations

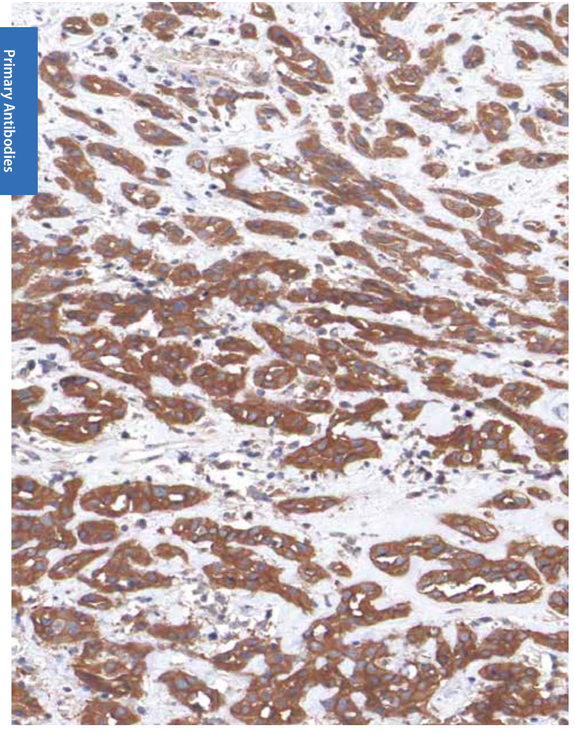
IVD: RUO:



***Above:** GeneAb™ Clusterin/Apolipoprotein J [IHC546] on Tonsil*

c-Met

Clone: IHC547 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate



Above: *GeneAb™ c-Met [IHC547] on Head and Neck Cancer*

Description

c-Met, also known as **Hepatocyte Growth Factor Receptor (HGFR),** is a tyrosine kinase involved in organogenesis, embryonic development, and the healing of wounds. c-Met is normally present only on stem cells and progenitor cells, and acts as a useful marker for many cancers including those of the kidney, stomach, liver, breast, and brain.

References

1. Bottaro D, et al. Science. 1991; 251:802-4. 2. Gatland F, et al. Cytogenet Cell Genet. 1992; 60:114-6. 3. Cooper C, et al. Oncogene. 1992; 7:3-7. 4. Gentile A, et al. Cancer Metastasis Rev. 2008; 27:85-94.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC547-100	$210
1 ml, Concentrate	IHC547-1	$980
7 ml, Predilute	IHC547-7	$520
3 Positive Control Slides	IHC547-PC	$275

Designations

IVD: RUO:

c-Myc

Clone: IHC548 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma

Description

c-Myc is a phosphoprotein involved with cell proliferation and differentiation. It is a useful marker for differentiation between Burkitt's lymphoma (BL) and diffuse large B-cell lymphoma (DLBCL) since, despite morphological similarities between the two B-cell lymphomas, Anti-c-Myc stains all BL and only a few DLBCL cases. A panel of antibodies against c-Myc, CD10, BCL2, and Ki-67 is useful for cases where Myc FISH analysis is warranted or can be omitted. Nuclear c-Myc overexpression is common in luminal cells of prostate intraepithelial neoplasia, many primary carcinomas, and metastatic disease.

References

1. Green TM, et al. Am J Surg Pathol. 2012; 36:612-9. 2. Aukema SM, et al. Blood. 2011; 117:2319-31. 3. Gurel B, et al. Mod Pathol. 2008; 21:1156-67.

Reference Panels

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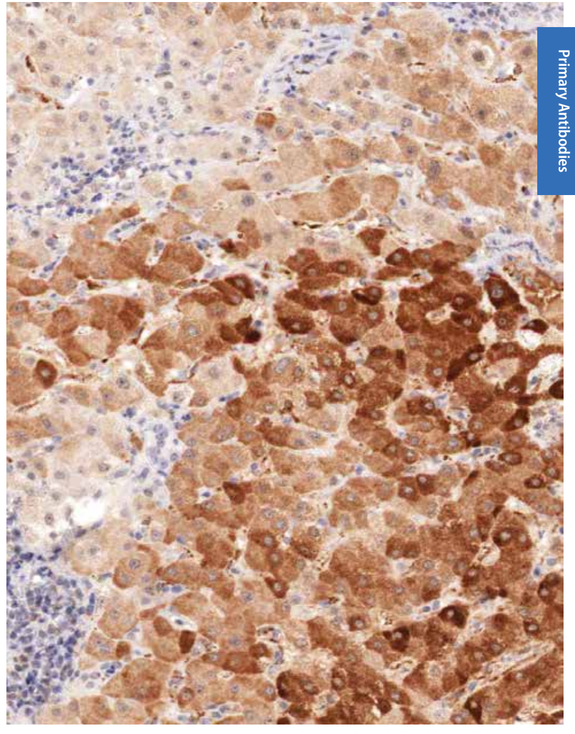
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC548-100	$190
1 ml, Concentrate	IHC548-1	$1,105
7 ml, Predilute	IHC548-7	$245
3 Positive Control Slides	IHC548-PC	$205

Designations

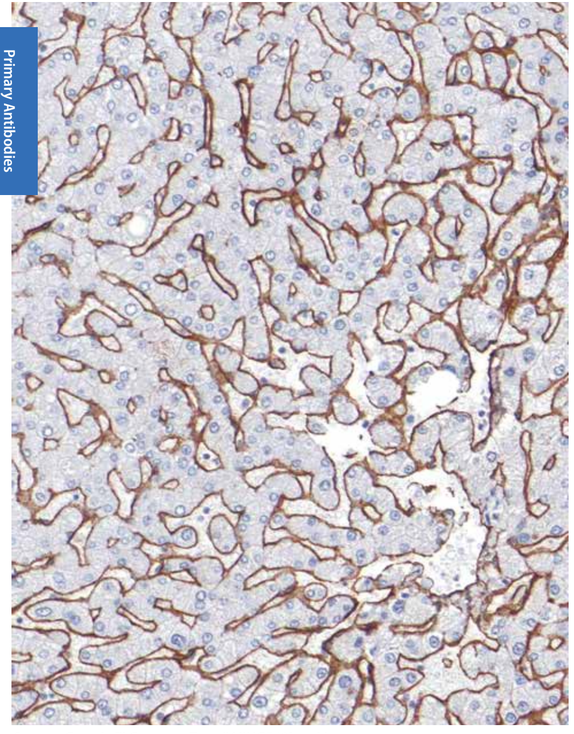
IVD: RUO:



Above: *GeneAb™ c-Myc [IHC548] on Liver*

Collagen Type IV

Clone: IHC549 | **Source:** Mouse Monoclonal | **Positive Control:** Lung, Muscle



Above: *GeneAb™ Collagen Type IV [IHC549] on Liver*

Description

Collagen Type IV is a primary component of the basal lamina that is used as a marker to observe the presence of the lamina and examine its structure. In addition to the epithelial basal lamina, Anti-Collagen Type IV stains mesenchymal components. It is useful for identifying soft tissue cancers, including schwannomas and leiomyomas. Anti-Collagen Type IV frequently reacts with these tissues after becoming well-differentiated and malignant. The use of Anti-Collagen Type IV produces more reliable results than non-specific silver reticulum stains when investigating the vascular elements of neoplasms, hemangiopericytoma, angiosarcoma, and epithelioid hemangioendothelioma.

References

1. Gould VE, et al. Pathol Annul. 1976; 11:353-86. 2. McArdle JP, et al. Int J Cancer. 1984; 34:633-8. 3. Sakr WA, et al. Hum Pathol. 1987; 18:1043-50. 4. Barsky SH, et al. Am J Surg Pathol. 1983; 7:667-77. 5. De Iorio P, et al. Anticancer Res. 2001; 21:1395-9. 6. Maatta M, et al. J Histochem Cytochem. 2001; 49:711-26. 7. Schmehl K, et al. Int J Colorectal Dis. 2000; 15:39-48. 8. Felix A, et al. Hum Pathol. 1999; 30:964-9. 9. Damiani S, et al. Virchows Arch. 1999; 434:227-34.

Reference Panels

pg.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC549-100	$135
1 ml, Concentrate	IHC549-1	$480
7 ml, Predilute	IHC549-7	$275
3 Positive Control Slides	IHC549-PC	$115

Designations

IVD: RUO:

COX-2

Clone: IHC550 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Adenocarcinoma

Description

COX-2, also known as **Cyclooxygenase 2,** catalyzes the conversion of arachidonic acid to prostaglandin H2. The inhibition of COX-2 using non-steroidal anti-inflammatory agents limits angiogenesis and tumour growth, and increases apoptosis. The overexpression of COX-2 is linked to increased microvascular density.

References

1. Stoehlmacker J, et al. Semin Oncol. 2003; 30:10-6. 2. Gallo O, et al. Hum Pathol. 2002; 33:708-14. 3. Sano H, et al. Cancer Res. 1995; 55:3785-9. 4. Denkert C, et al. Cancer. 2003; 97:2978-87. 5. Sheehan KM, et al. Hum Pathol. 2003; 34:1242-6.

Reference Panels

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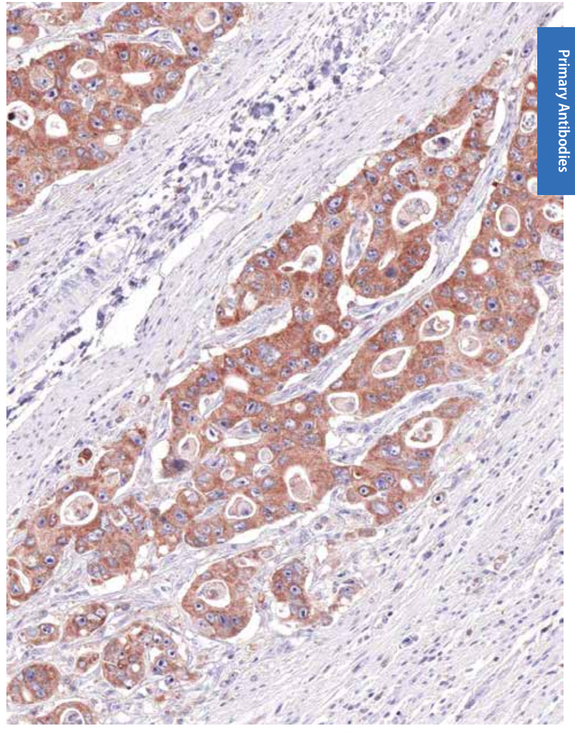
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC550-100	$125
1 ml, Concentrate	IHC550-1	$810
7 ml, Predilute	IHC550-7	$280
3 Positive Control Slides	IHC550-PC	$115

Designations

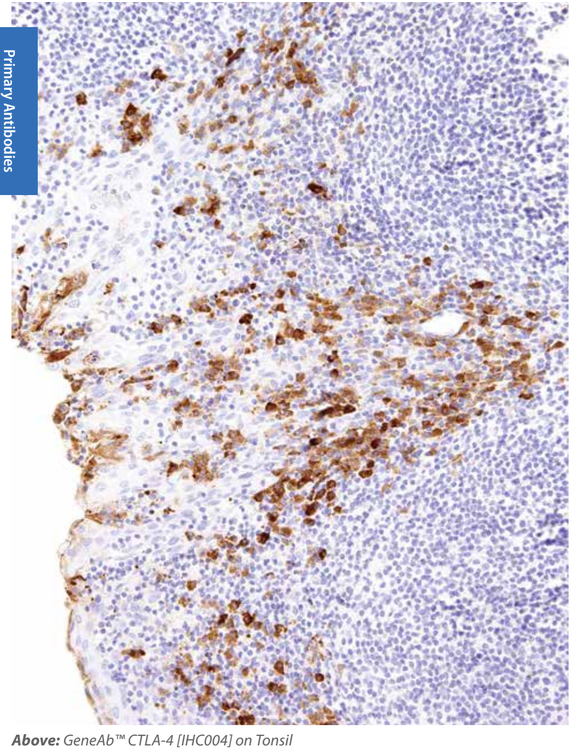
IVD: RUO:



Above: *GeneAb™ COX-2 [IHC550] on Colon Cancer*

CTLA-4

Clone: IHC004 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node, Colon, Thymus



Above: *GeneAb™ CTLA-4 [IHC004] on Tonsil*

Description

Cytotoxic T-Lymphocyte-Associated Protein 4 (CTLA-4) is a receptor on T helper cells that functions as an immune checkpoint and downregulator of immune responses. Mutations in CTLA-4 are associated with insulin-dependent diabetes mellitus, Hashimoto's thyroiditis, Graves' disease, systemic lupus erythematosus (SLE), celiac disease, primary biliary cirrhosis, thyroid-associated orbitopathy, multiple sclerosis, and other autoimmune diseases. The spliced variant of CTLA-4 in SLE is present in the patient's serum. Haploinsufficiency of CTLA-4 causes the immune system disorder known as CTLA-4 deficiency or CHAI disease (CTLA-4 haploinsufficiency with autoimmune infiltration).

References

1. Denizot F, et al. Nature. 1987; 328:267-70. 2. Dariavach P, et al. Eur J Immunol. 1988; 18:1901-5. 3. Krummel MF, et al. J Exp Med. 1995; 182:459-65. 4. Kuehn HS, et al. Science. 2014; 345:1623-7. 5. Walunas TL, et al. J Exp Med. 1996; 183:2541-50.

Reference Panels

pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC004-100	$210
1 ml, Concentrate	IHC004-1	$980
7 ml, Predilute	IHC004-7	$520
3 Positive Control Slides	IHC004-PC	$275

Designations

IVD: RUO:

CXCL13

Clone: IHC551 | **Source:** Mouse Monoclonal | **Positive Control:** Lymphoma, Breast, Liver

Description

CXCL13 is a B-cell chemoattractant that is strongly expressed in the liver, spleen, and gut lymph nodes, and is present in the appendix and stomach to a lesser degree. CXCL13 is useful as a marker for inflammation in the central nervous system, including Lyme neuroborreliosis, acute neuroborreliosis, multiple sclerosis, and infectious diseases such as typanosomiasis.

References

1. Rupprecht TA, et al. Neurology. 2005; 65:448-50. 2. Jukka H, et al. J Neuroinflamm. 2014; 11:103. 3. Mygland A, et al. Eur J Neurol. 2010; 17:8-16. 4. Borde JP, et al. BMC Infect Dis. 2012; 12:344.

Reference Panels

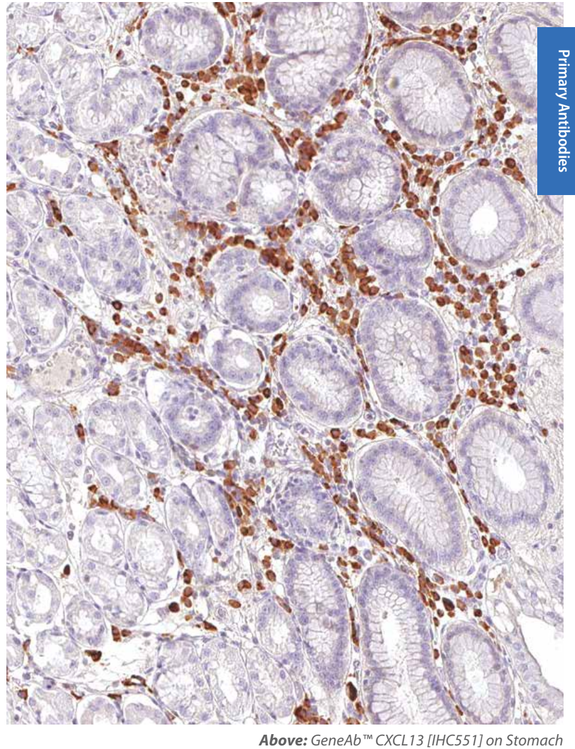
pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC551-100	$105
1 ml, Concentrate	IHC551-1	$410
7 ml, Predilute	IHC551-7	$155
3 Positive Control Slides	IHC551-PC	$85

Designations

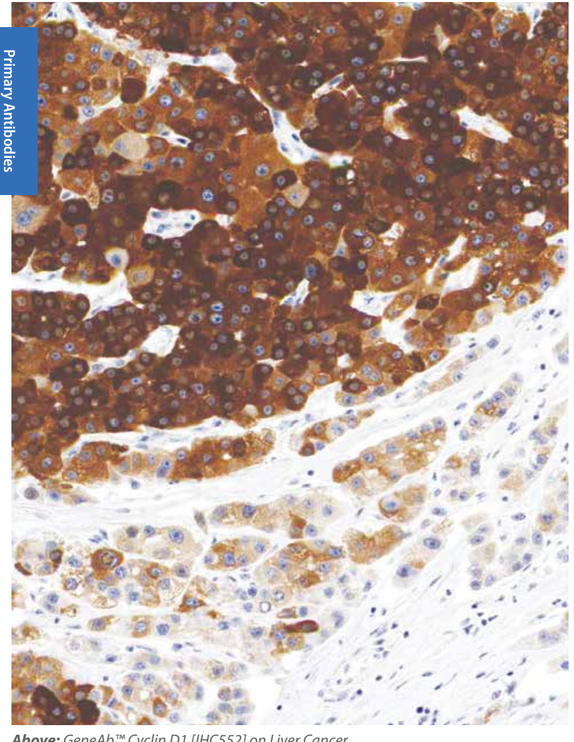
IVD: RUO:



Above: *GeneAb™ CXCL13 [IHC551] on Stomach*

Cyclin D1

Clone: IHC552 | **Source:** Mouse Monoclonal | **Positive Control:** Mantle Cell Lymphoma



Above: *GeneAb™ Cyclin D1 [IHC552] on Liver Cancer*

Description

Cyclin D1 is an essential cell cycle regulator and proto-oncogene. Cyclin D1 staining is useful for investigating cell cycle biology and related cancers. Anti-Cyclin D1 is used for differentiating mantle cell lymphomas (positive stain) from CLL/SLL and follicular lymphomas (negative stain). Hairy cell leukemia and plasma cell myeloma also react lightly to Anti-Cyclin D1.

References

1. Aagaard L, et al. Int J Cancer. 1995; 61:115-20. 2. Bartkova J, et al. Oncogene. 1995; 10:775-8. 3. Bartkova J, et al. Cancer Res. 1995; 55:949-56. 4. Bartkova J, et al. J Pathol. 1994; 172:237-45. 5. Lukas J, et al. Mol Cell Biol. 1995; 15:2600-11. 6. Mankin RC, et al. Arch Pathol Lab Med. 1999; 123:1182-8. 7. Yatabe Y, et al. Blood. 2000; 95:2253-61. 8. Kodet R, et al. Virchows Arch. 2003; 442:538-47. 9. Hui P, et al. Leuk Lymphoma. 2003; 44:1385-94.

Reference Panels

pg.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC552-100	$110
1 ml, Concentrate	IHC552-1	$610
7 ml, Predilute	IHC552-7	$255
3 Positive Control Slides	IHC552-PC	$205

Designations

IVD: RUO:

Cyclin E1

Clone: IHC553 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma, Placenta

Description

Cyclin E1 is a key cell cycle regulator in normal cells. Many studies have found Cyclin E1 to be linked to disease progression and patient prognoses in several cancers including breast, bladder, colon, and ovarian carcinomas. Cyclin E1 is commonly uncontrolled in various cancers, and current research has found Cyclin E1 overexpression to be the cause for resistance against trastuzumab in HER2(+) breast cancer patients.

References

1. Okuda M, et al. Cell. 2000; 103:127-40. 2. Chen Z, et al. Dev Cell. 2002; 3:339-50. 3. Huang H, et al. Science. 2006; 314:294-7. 4. Scaltriti, M, et al. Proc Natl Acad Sci U S A. 2011; 108:3761-6.

Reference Panels

pg.

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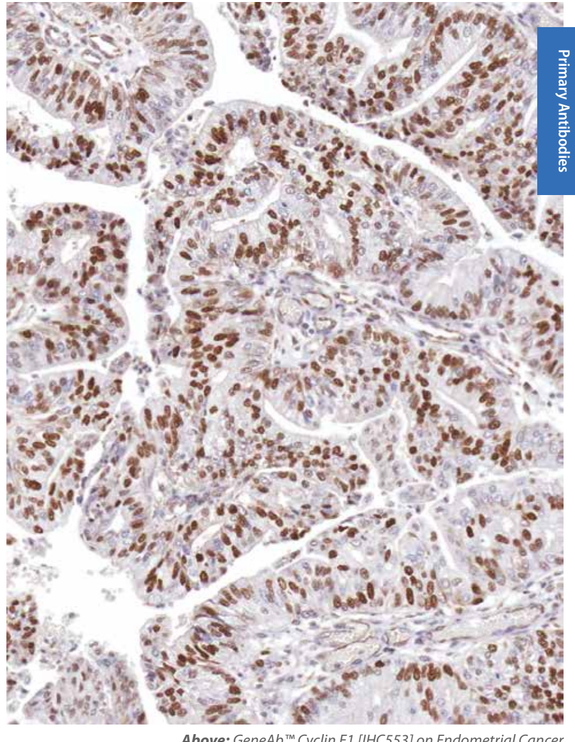
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC553-100	$130
1 ml, Concentrate	IHC553-1	$495
7 ml, Predilute	IHC553-7	$260
3 Positive Control Slides	IHC553-PC	$140

Designations

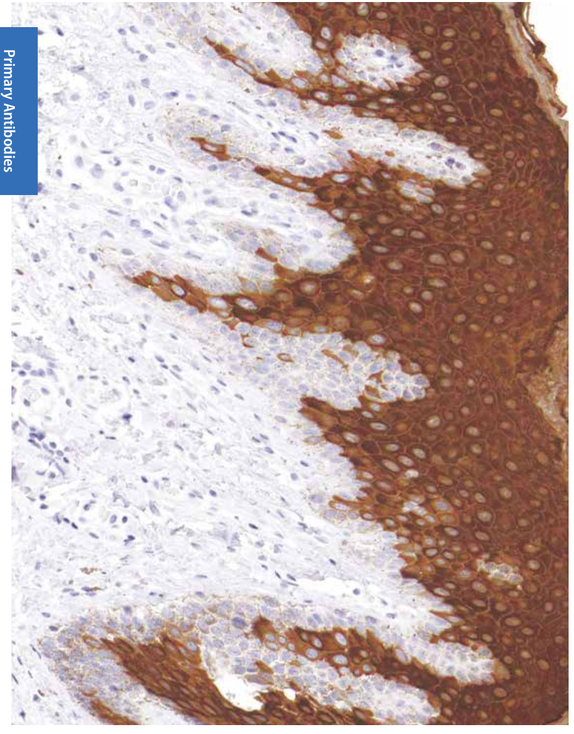
IVD: RUO:



Above: *GeneAb™ Cyclin E1 [IHC553] on Endometrial Cancer*

Cytokeratin 1, 5, 10 & 14

Clone: IHC554 | **Source:** Mouse Monoclonal | **Positive Control:** Skin



***Above:** GeneAb™ Cytokeratin 1, 5, 10 & 14 [IHC554] on Skin*

Description

The **Anti-Cytokeratin 1, 5, 10 & 14** cocktail stains all squamous and ductal epithelium and carcinomas by recognizing cytokeratins 1, 5, 10, & 14 in the complex epithelia. It does not stain hepatocytes, proximal renal tubules, endometrial glands, pancreatic acinar cells, simple epithelia, lymphomas, mesenchymal tumours, neural tumours, or melanomas. The cocktail is useful for differentiating adenocarcinoma from hyperplasia in the prostate, and for characterizing malignant and benign intraductal breast proliferations.

References

1. Gown AM, et al. Am J Pathol. 1984; 114:309-21. 2. O'Malley FP, et al. Virch Arch A Pathol Anat Histopathol. 1990; 417:191-6. 3. Amin MB. Arch Pathol Lab Med. 1994; 118:260-4. 4. Wojno KJ, et al. Am J Surg Pathol. 1995; 19:251-60. 5. Moinfar F, et al. Am J Surg Pathol. 1999; 23:1048-58. 6. Yang XJ, et al. Am J Surg Pathol. 1999; 23:147-52.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC554-100	$120
1 ml, Concentrate	IHC554-1	$425
7 ml, Predilute	IHC554-7	$275
25 ml, Predilute	IHC554-25	$1,010
3 Positive Control Slides	IHC554-PC	$145

Designations

IVD: RUO:

Cytokeratin 5 & 6

Clone: IHC556 | **Source:** Mouse Monoclonal | **Positive Control:** Mesothelioma

***Above:** GeneAb™ Cytokeratin 5 & 6 [IHC556] on Skin*

Description

Cytokeratin 5 dimerizes with Cytokeratin 14 to form the cytoskeleton of basal epithelial cells, while **Cytokeratin 6** multimerizes with Cytokeratin 16 and/or 17 in the tongue, oral epithelia and esophagus, hair follicles, and glandular epithelia. Anti-Cytokeratin 5 & 6 rarely stains lung adenocarcinoma, but will produce small foci or scattered staining patterns in these Cytokeratin 5 & 6(+) samples. Cytokeratin 5 & 6 staining is useful for identifying squamous cell carcinoma, and can be used to determine the malignancies of myoepithelial cells in the breast and prostate. Cytokeratin 5 & 6 also rarely stains carcinomas of the breast, colon, and prostate. A panel of antibodies against Cytokeratin 5 & 6, TTF-1, napsin A, p63, SOX2, DSC3, and desmoglein-3 is useful for differentiating lung squamous cell carcinoma from lung adenocarcinoma and large cell carcinoma.

References

1. Moll R, et al. Cell. 1982; 31:11-24. 2. Lersch R, et al. Mol Cell Biol. 1988; 8:486-93. 3. Clover J, et al. Histopathology. 1997; 31:140-3. 4. Otterbach F, et al. Histopathology. 2000; 37:232-40. 5. Chu P, et al. Mod Pathol. 2002; 15:6-10.

Reference Panels

Order Information

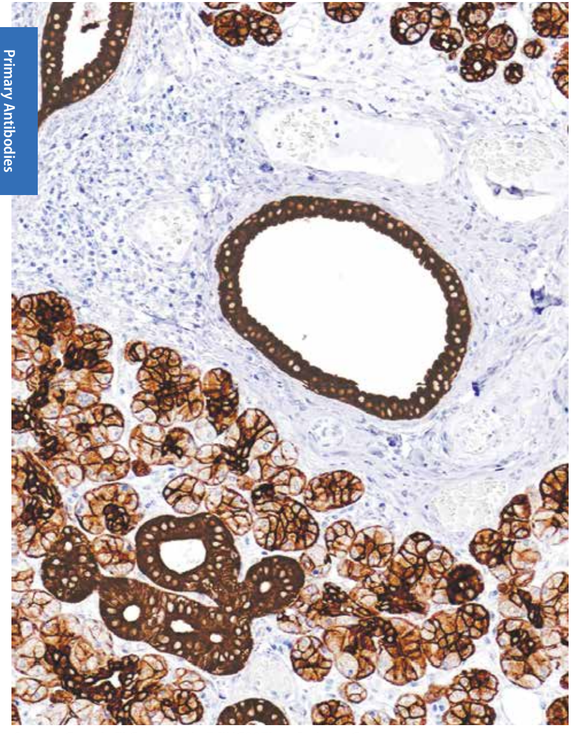
Format	Cat. No.	Price
0.1 ml, Concentrate	IHC556-100	$140
1 ml, Concentrate	IHC556-1	$475
7 ml, Predilute	IHC556-7	$300
25 ml, Predilute	IHC556-25	$825
3 Positive Control Slides	IHC556-PC	$115

Designations

IVD: RUO:

Cytokeratin 7

Clone: IHC007 | **Source:** Mouse Monoclonal | **Positive Control:** Salivary Gland, Lung Adenocarcinoma



Above: *GeneAb™ Cytokeratin 7 [IHC007] on Salivary Gland*

Description

Cytokeratin 7 (CK7) is a type II keratin which is present in transitional, ductal, glandular, and biliary duct epithelial cells. Cytokeratin 7 is a useful marker for distinguishing between carcinomas of the lung, breast, endometrium, and urothelia (positive stain) from carcinomas of the colon and prostate (negative stain). Cytokeratin 7 is present is nearly all primary lung adenocarcinomas, and is a useful marker in the differential diagnosis of ovarian neoplasms. Anti-Cytokeratin 7 does not stain intermediate filament.

References

1. Jerome MV, et al. Histopathology. 2004; 45:125-34. 2. Murray SK, et al. Am J Surg Pathol. 2004; 28:1154-62. 3. Chu P, et al. Mod Pathol. 2000; 13:962-72. 4. Logani S, et al. Am J Surg Pathol. 2003; 27:1434-41. 5. Ramalingam P, et al. Ann Diagn Pathol. 2003; 7:112-9. 6. Roy S, et al. Arch Pathol Lab Med. 2011; 135:1601-5. 7. McCluggage WG, et al. Histopathology. 2005; 47:231-47. 8. Han AC, et al. Cancer. 1999; 86:2327-30.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC007-100	$120
1 ml, Concentrate	IHC007-1	$360
7 ml, Predilute	IHC007-7	$295
25 ml, Predilute	IHC007-25	$915
3 Positive Control Slides	IHC007-PC	$115

Designations

IVD: RUO:

Cytokeratin 7 & 8

Clone: IHC052 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Carcinoma

Description

Anti-Cytokeratin 7 & 8 stains secretory epithelia and most epithelial-derived tissue, such as renal tubular epithelium, liver, and hepatocellular and renal cell carcinomas, but does not stain stratified squamous epithelium. Anti-Cytokeratin 7 & 8 may not stain some squamous cell carcinomas.

References

1. Moll R, et al. Cell. 1982; 31:11-24. 2. Makin C, et al. J Clin Pathol. 1984. 37:975. 3. Battifora H. Progress in Surgical Pathology. Vol 8: Field & Wood Medical Publishers; 1990: 1-15. 4. Centers for Disease Control. MMWR. 1988; 37:377-88.

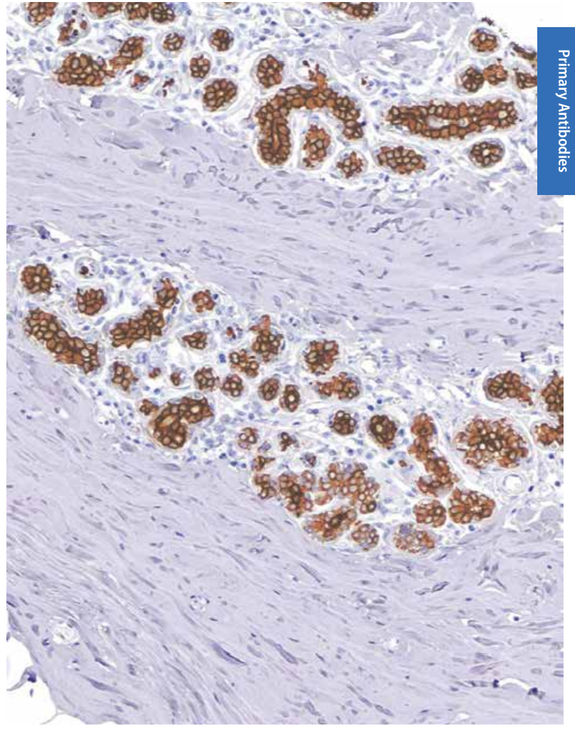
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC052-100	$210
1 ml, Concentrate	IHC052-1	$980
7 ml, Predilute	IHC052-7	$520
3 Positive Control Slides	IHC052-PC	$275

Designations

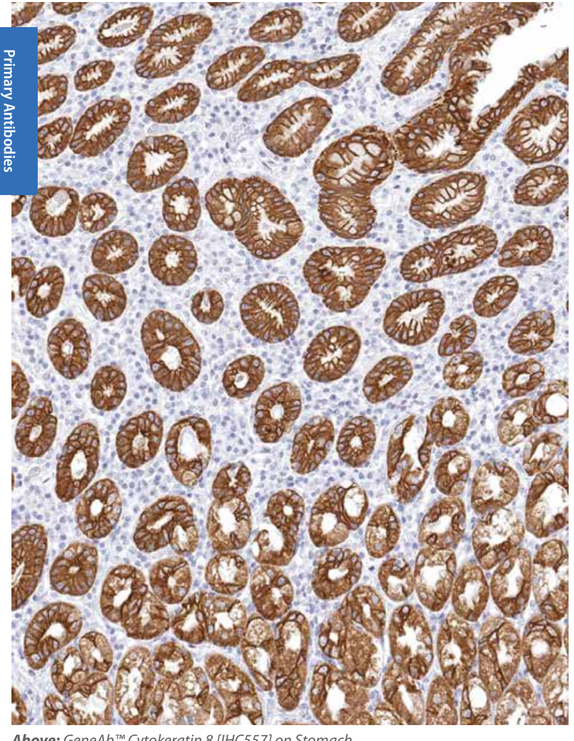
IVD: RUO:



Above: *GeneAb™ Cytokeratin 7 & 8 [IHC052] on Breast*

Cytokeratin 8

Clone: IHC557 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate



Above: *GeneAb™ Cytokeratin 8 [IHC557] on Stomach*

Description

Cytokeratin 8 (CK8) is present in single-layer epithelial tissue. CK8 frequently interacts with Cytokeratin 18, and Anti-Cytokeratin 8 is useful for identifying adenocarcinomas with simple epithelium origin. It may also be used to differentiate between lobular (perinuclear staining) and ductal (peripheral staining) breast carcinomas.

References

1. Angus B, et al. J Pathol. 1987; 155:377-84. 2. Ku NO, et al. J Clin Invest. 1997; 99:19-23. 3. Lehr HA, et al. Am J Clin Pathol. 2000; 114:190-6.

Reference Panels

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Breast/Gynecological.....277

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC557-100	$120
1 ml, Concentrate	IHC557-1	$380
7 ml, Predilute	IHC557-7	$260
3 Positive Control Slides	IHC557-PC	$140

Designations

IVD: RUO:

Cytokeratin 8 & 18

Clone: IHC558 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate, Pancreas

Description

Cytokeratin 8 & 18 are present in various epithelia including that of the breast, thyroid, respiratory tract, and gastrointestinal tract. Anti-Cytokeratin 8 & 18 stains adenocarcinomas and most non-keratinizing squamous carcinomas, but does not stain keratinizing squamous carcinomas. Since Cytokeratin 18 is scarce in normal epidermis, Anti-Cytokeratin 8 & 18 is used to detect Paget cells in such samples. Cytokeratin 8 & 18 helps identify colorectal carcinoma metastases as it is more sensitive than genetic tests.

References

1. Angus B, et al. J Pathol. 1987;155:377- 84. 2. Corson, JM. Pathol Annu. 1986; 21:47-81. 3. Liegl B, et al. Histopathology. 2007; 50:439-47. 4. Sasaki M, et al. Histopathology. 1998; 32:199-208.

Reference Panels

pg.

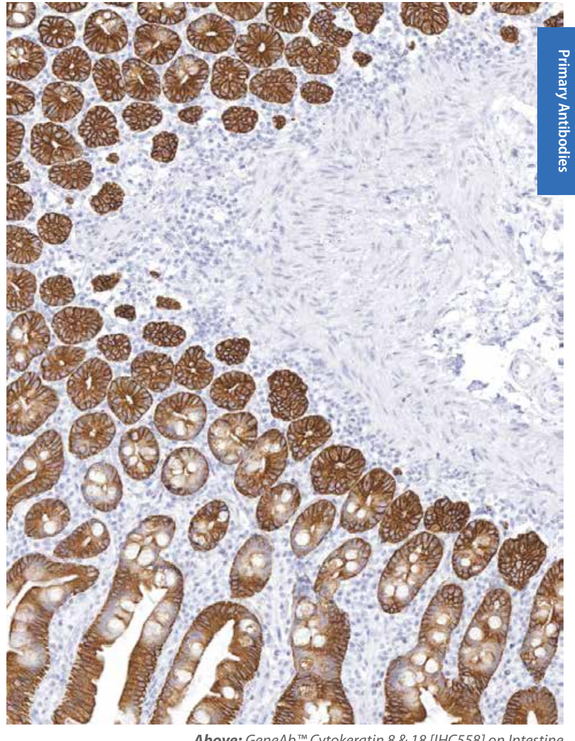
Dermatopathology.....279

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC558-100	$120
1 ml, Concentrate	IHC558-1	$290
7 ml, Predilute	IHC558-7	$255
25 ml, Predilute	IHC558-25	$775
3 Positive Control Slides	IHC558-PC	$115

Designations

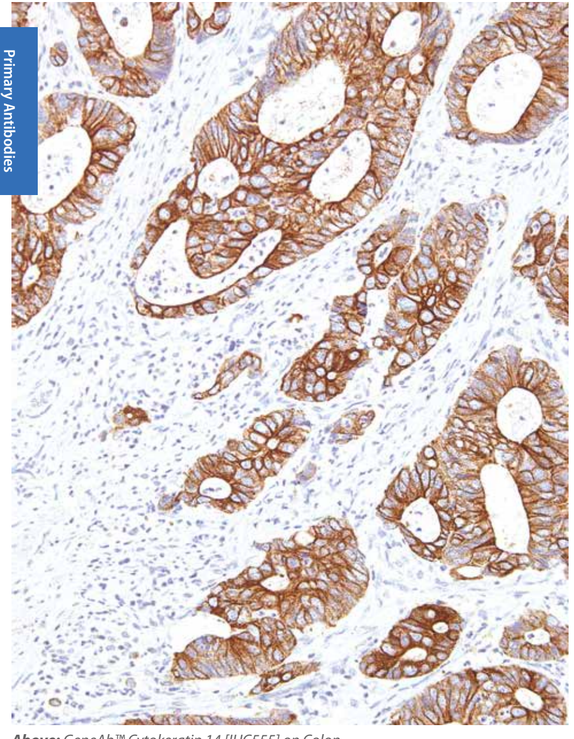
IVD: RUO:



Above: *GeneAb™ Cytokeratin 8 & 18 [IHC558] on Intestine*

Cytokeratin 14

Clone: IHC555 | **Source:** Mouse Monoclonal | **Positive Control:** Squamous Cell Carcinoma



***Above:** GeneAb™ Cytokeratin 14 [IHC555] on Colon*

Description

Cytokeratin 14 (CK14) is found in squamous epithelial basal cells, myoepithelium, some glandular epithelia, and mesothelial cells. Anti-Cytokeratin 14 is useful for distinguishing squamous cell carcinomas from other epithelial tumours, and for classifying metaplastic breast carcinomas.

References

1. Reis-Filho JS, et al. Appl Immunohistochem Mol Morphol. 2003; 11:1-8. 2. Chu PG, et al. Histopathology. 2001; 39:9-16. 3. Chu PG, et al. Histopathology. 2001; 39:455-62. 4. Reis-Filho JS, et al. Appl Immunohistochem Mol Morphol. 2003; 11:1-8. 5. Dabbs David J. Diagnostic Immunohistochemistry. Churchill-Livingstone. 2002; 166-76.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC555-100	$135
1 ml, Concentrate	IHC555-1	$385
7 ml, Predilute	IHC555-7	$250
3 Positive Control Slides	IHC555-PC	$115

Designations

IVD: RUO:

Cytokeratin 17

Clone: IHC017 | **Source:** Mouse Monoclonal | **Positive Control:** Immature Cervical Metaplasia, Breast

Description

Cytokeratin 17 (CK17) is part of the intermediate filament, and is present in basal cells and myoepithelial cells. Cytokeratin 17 is a useful marker for identifying breast cancers of basal nature, as well as squamous cell carcinoma. Anti-Cytokeratin 17 can help differentiate cholangiocarcinoma (positive stain) from hepatocellular carcinoma (negative stain). A panel of Anti-MUC1 and Anti-Cytokeratin 17 can be used for differentiation between Cytokeratin 17(+) pancreatobiliary adenocarcinoma from Cytokeratin 17(-) extra-pancreatobiliary nonmucinous adenocarcinoma.

References

1. Regauer S, et al. Histopathology. 2007; 50:629-35. 2. Martens JE, et al. Anticancer Res. 2004; 24:771-5. 3. Escobar-Hoyos LF, et al. Mod Pathol. 2014; 27:621-30. 4. Kitamura R. et al. J Cancer Res Clin Oncol. 2012; 138:1299-310.

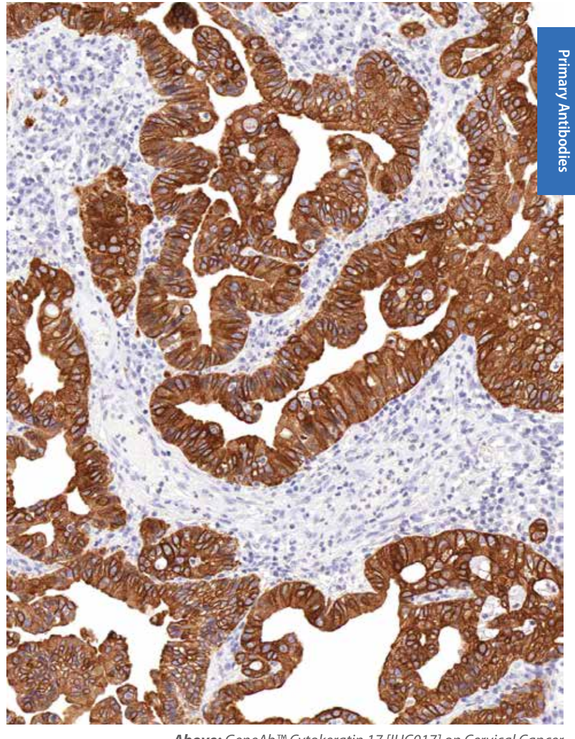
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC017-100	$125
1 ml, Concentrate	IHC017-1	$475
7 ml, Predilute	IHC017-7	$290
3 Positive Control Slides	IHC017-PC	$160

Designations

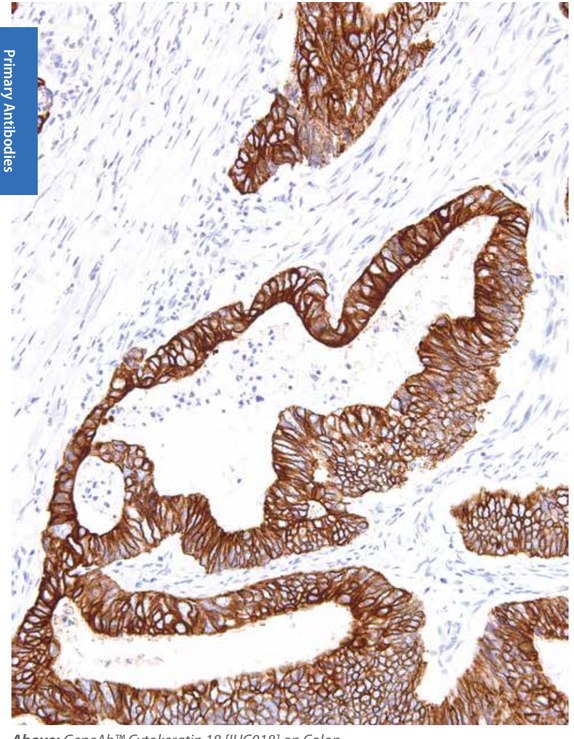
IVD: RUO:



***Above:** GeneAb™ Cytokeratin 17 [IHC017] on Cervical Cancer*

Cytokeratin 18

Clone: IHC018 | **Source:** Mouse Monoclonal | **Positive Control:** Breast, Breast Carcinoma



Above: *GeneAb™ Cytokeratin 18 [IHC018] on Colon*

Description

Cytokeratin 18 (CK18) is present in simple, glandular, and transitional epithelial cells, but is absent in stratified epithelial cells. CK18 usually multimerizes with Cytokeratin 8, and Anti-Cytokeratin 18 is useful for detecting adenocarcinomas of simple and glandular epithelium origin, as well as poorly differentiated squamous carcinoma cells.

References

1. Moll R. Subcell Biochem. 1998; 31:205-62. 2. Ku NO, et al. J Clin Invest. 1997; 99:19-23. 3. Woelfle U, et al. Clin Cancer Res. 2004; 10:2670-4.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC018-100	$110
1 ml, Concentrate	IHC018-1	$360
7 ml, Predilute	IHC018-7	$220
3 Positive Control Slides	IHC018-PC	$115

Designations

IVD: RUO:

Cytokeratin 19

Clone: IHC019 | **Source:** Mouse Monoclonal | **Positive Control:** Bladder, Colon Carcinoma, Colon, Thyroid Carcinoma

Description

Cytokeratin 19 (CK19) forms intermediate filaments found in the intracytoplasmic cytoskeleton of epithelial tissue and provides mechanical support. Anti-Cytokeratin 19 stains epithelia and epithelial malignancies such as carcinomas of the colon, stomach, pancreas, biliary tract, liver, and breast. Cytokeratin 19 is a useful marker for distinguishing hepatocellular carcinoma from intrahepatic cholangiocarcinoma. This differentiation is improved when stained in combination with Cytokeratin 7, CAM5.2, Ber-EP4/MOC31, Hep-Par1, and TTF1. Cytokeratin 19 staining can also be used to recognize thyroid papillary carcinomas.

References

1. Jain R, et al. Appl Immunohistochem Mol Morphol. 2010; 18:9-15. 2. Rosai J. Tumouri. 2003; 89:517-9. 3. de Matos LL, et al. Diagn Pathol. 2012;7:97.

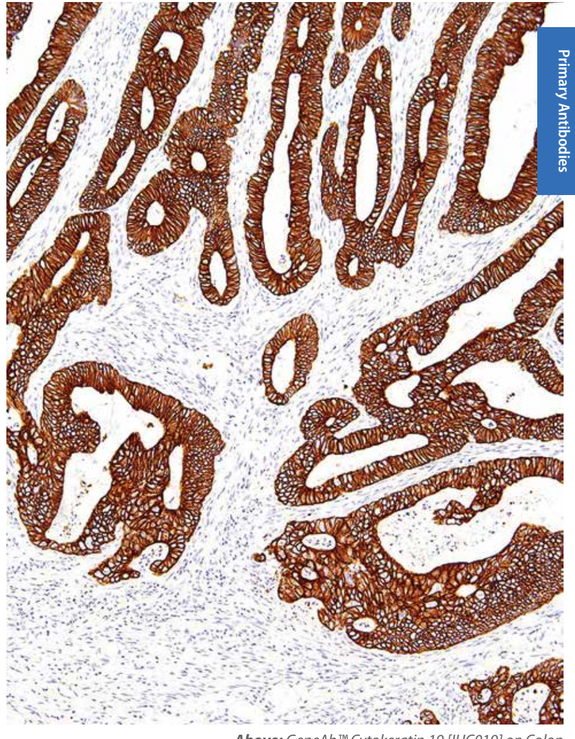
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC019-100	$135
1 ml, Concentrate	IHC019-1	$515
7 ml, Predilute	IHC019-7	$250
3 Positive Control Slides	IHC019-PC	$160

Designations

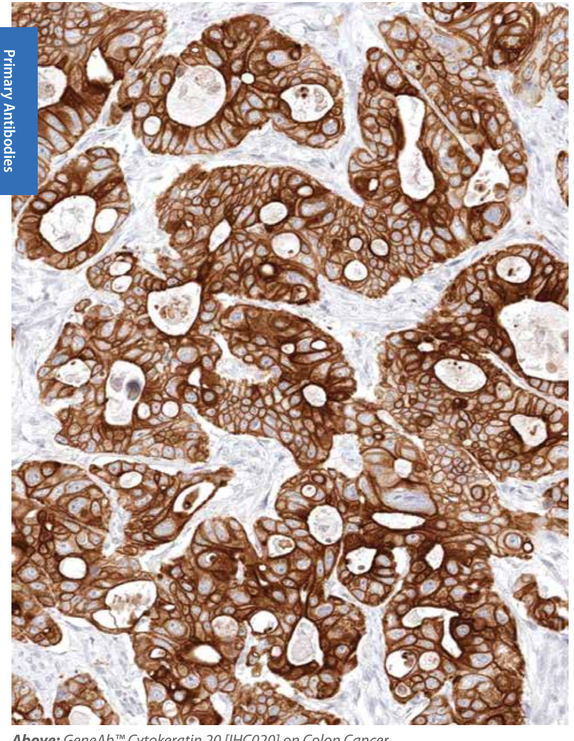
IVD: RUO:



Above: *GeneAb™ Cytokeratin 19 [IHC019] on Colon*

Cytokeratin 20

Clone: IHC020 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Carcinoma



Above: *GeneAb™ Cytokeratin 20 [IHC020] on Colon Cancer*

Description

Cytokeratin 20 (CK20) forms intermediate filaments and is normally present in gastric and intestinal epithelium, urothelium, and Merkel cells. Anti-Cytokeratin 20 is used for distinguishing specific types of urinary tract epithelial cells and malignant epithelia. Anti-Cytokeratin 20 stains tissues of the colon, stomach, pancreas, biliary system adenocarcinomas, transitional-cell, mucinous ovarian tumours, and Merkel cell carcinomas. Non-mucinous tumours of the ovary and adenocarcinomas of the breast, lung, endometrium, squamous cell, and small cell type are not stained by Anti-Cytokeratin 20.

References

1. Ordonez NG. Am J Surg Pathol. 1998; 22:1203-14. 2. Cury PM, et al. Mod Pathol. 2000; 13:107-12. 3. Chu PG, et al. Mod Pathol. 2002; 15:6-10. 4. Ordonez NG. Am J Surg Pathol. 1998; 22:1215-21. 5. Lin L, et al. J Cutan Pathol. 2003; 30:114-7. 6. Sigel JE, et al. J Cutan Pathol. 2001; 28:520-4. 7. Abarahams NA, et al. Am J Clin Pathol. 2003; 120:368-76. 8. Reis-Filho JS, et al. Virchows Arch. 2003; 443:122-32. 9. Lacroix-Triki M, et al. Virchows Arch. 2003; 442:548-54. 10. Otterbach F, et al. Histopathology. 2000; 37:232-40.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC020-100	$155
1 ml, Concentrate	IHC020-1	$745
7 ml, Predilute	IHC020-7	$370
25 ml, Predilute	IHC020-25	$980
3 Positive Control Slides	IHC020-PC	$115

Designations

IVD: RUO:

Cytokeratin Cocktail

Clone: IHC559 | **Source:** Mouse Monoclonal | **Positive Control:** Breast, Lung, Colon, Skin

Description

Cytokeratin Cocktail is a combination of type I cytokeratins (10, 14, 15, 16, & 19) and type II cytokeratins (1, 2, 3, 4, 5, 6, 7, & 8). The cocktail stains most carcinomas of different organ origin, but usually does not stain chromophobe renal cell carcinoma, hepatocellular carcinoma, some clear cell renal cell carcinomas, adrenal cortical carcinoma, and renal oncocytoma. The cocktail may also react with other intermediate filaments, including glial fibrillary acidic protein, and produce false-positive results in glial cancers.

References

1. Battifora H. Am J Surg Pathol. 1988; 12:24-42. 2. Cooper D, et al. Lab Invest. 1985; 52: 243-56. 3. Gown AM, et al. Am J Clin Pathol. 1985; 84:413. 4. Kriho UK. et al. Virchows Arch. 1997; 431: 139-47.

Reference Panels

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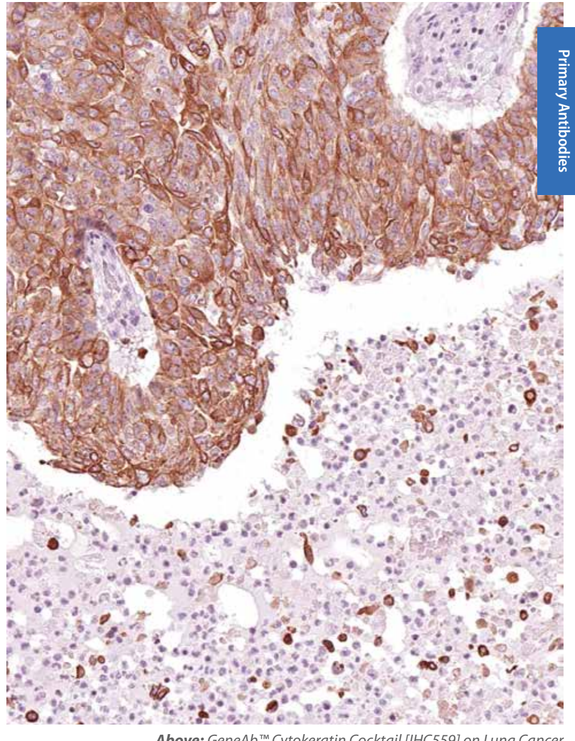
Genitourinary (GU)	284
Neuropathology	299
Soft Tissue	302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC559-100	$100
1 ml, Concentrate	IHC559-1	$340
7 ml, Predilute	IHC559-7	$195
3 Positive Control Slides	IHC559-PC	$100

Designations

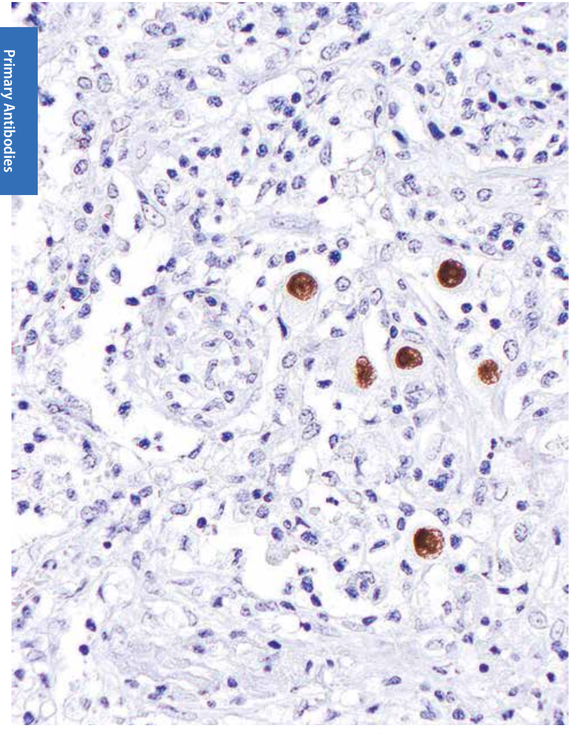
IVD: RUO:



Above: *GeneAb™ Cytokeratin Cocktail [IHC559] on Lung Cancer*

Cytomegalovirus (CMV)

Clone: IHC560 | **Source:** Mouse Monoclonal | **Positive Control:** CMV-Infected Tissue



Above: *GeneAb™ Cytomegalovirus (CMV) [IHC560] on Infected Colon Tissue*

Description

Cytomegalovirus (CMV), also known as **HCMV** or **Human Herpesvirus 5 (HHV-5),** is a member of the Betaherpesvirinae subfamily of Herpesviridae. CMV can aggravate gastrointestinal mucosal illnesses, and staining with Anti-CMV is the best means of diagnosis. The antibody stains immediate early and early protein antigens that are present during CMV infection. Although this staining is generally localized to the nuclei, cytoplasmic and diffuse nuclear staining may be seen in late stage infection. Recent research has found that Anti-CMV does not stain for herpes simplex virus (HSV) or human papillomavirus (HPV).

References

1. Plachter B, et al. Virus Research. 1992; 24:265-76. 2. Silverberg SG, et al. Principles and Practice of Surgical Pathology and Cytopathology. 1997; 217-8.

Reference Panels

pg.

- Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC560-100	$100
1 ml, Concentrate	IHC560-1	$385
7 ml, Predilute	IHC560-7	$155
3 Positive Control Slides	IHC560-PC	$85

Designations

IVD: RUO:

Desmin

Clone: IHC561 | **Source:** Mouse Monoclonal | **Positive Control:** Skeletal Muscle

Description

Desmin is a type III intermediate filament present in normal smooth, skeletal, and cardiac muscle cells. Analysis by light microscopy suggests desmin localizes towards the periphery of Z-lines in striated muscle fibrils. Desmin connects cytoplasmic dense bodies to membranous dense plaques in smooth muscles. Anti-Desmin stains rhabdomyomas, leiomyosarcoma, rhabdomyosarcoma, leiomyomas, and perivascular cells from skin glomus tumours, and is used to identify the myogenic characteristics of tumours. Desmin can also be found in myofibroblasts and desmoid fibromatosis.

References

1. Nadji M, et al. Immunoperoxidase Techniques ASCP. 1986. 2. Debus E, et al. EMBO J. 1983; 2:2305-12. 3. Altmannsberger M, et al. Am J Pathol. 1985; 118:85-95. 4. Attanoos RL, et al. Histopathology. 2003; 43:231-8. 5. Chu PG, et al. Mod Pathol. 2001; 14:465-71. 6. Gill SA, et al. Acta Cytol. 2000: 44:976-80.

Reference Panels

pg.

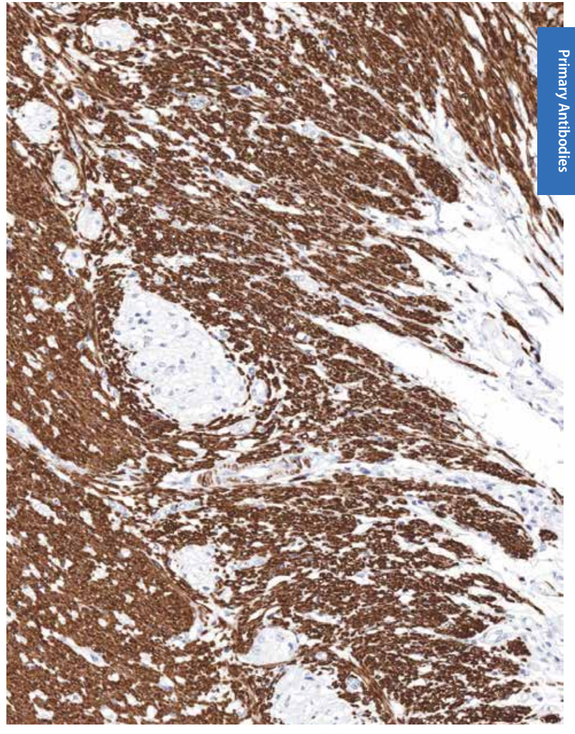
- Soft Tissue.....302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC561-100	$105
1 ml, Concentrate	IHC561-1	$415
7 ml, Predilute	IHC561-7	$220
3 Positive Control Slides	IHC561-PC	$115

Designations

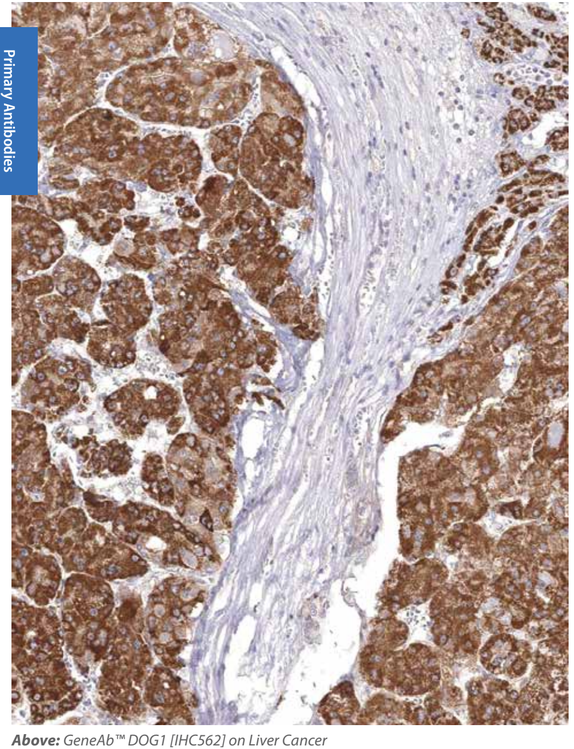
IVD: RUO:



Above: *GeneAb™ Desmin [IHC561] on Smooth Muscle*

DOG1

Clone: IHC562 | **Source:** Mouse Monoclonal | **Positive Control:** Gastrointestinal Stromal tumour



Above: *GeneAb™ DOG1 [IHC562] on Liver Cancer*

Description

DOG1, also known as **Discovered on GIST-1,** is a marker that is highly specific for gastrointestinal stromal tumour (GIST). Anti-DOG1 is extremely sensitive for the detection of GIST and its diagnosis. Although some GIST stain weakly for c-kit, DOG1 is expressed in the vast majority of GIST cases. Reports have also indicated DOG1 as a marker for salivary acinar and intercalated duct differentiation.

References

1. Espinosa I, et al. Am J Surg Pathol. 2008; 32:210-8. 2. Miwa S, et al. J Gastroenterol. 2008; 43:531-7. 3. Parfitt JR, et al. Histopathology. 2008; 52:816-23. 4. West RB, et al. Am J Pathol. 2004; 165:107-13. 5. Lopes LF, et al. Appl Immunohistochem Mol Morphol. 2010; 18:333-7. 6. Chênevert J, et al. Mod Pathol. 2012; 25:919-29.

Reference Panels

pg.

- Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC562-100	$100
1 ml, Concentrate	IHC562-1	$385
7 ml, Predilute	IHC562-7	$245
3 Positive Control Slides	IHC562-PC	$160

Designations

IVD: RUO:

EBV LMP-1

Clone: IHC563 | **Source:** Mouse Monoclonal | **Positive Control:** EBV-Infected Tissue

Description

Epstein-Barr Virus Latent Membrane Protein 1 (EBV LMP-1) is one of the few proteins expressed during the lysogenic or latent infection cycle of Epstein-Barr virus, which is a member of the herpes family and is also known as human herpesvirus 4 (HHV-4). LMP-1 is a proto-oncogene that is expressed in most EBV-associated human malignancies. Anti-EBV LMP-1 is useful for detecting Hodgkin's and Reed-Sternberg cells in classic Hodgkin's Lymphoma.

References

1. Ersing I, et al. Viruses. 2013; 5:1587-606. 2. Herling M, et al. Clin Cancer Res. 2003; 9:2114-20. 3. Andersson J. Herpes. 2006; 13:12-6.

Reference Panels

pg.

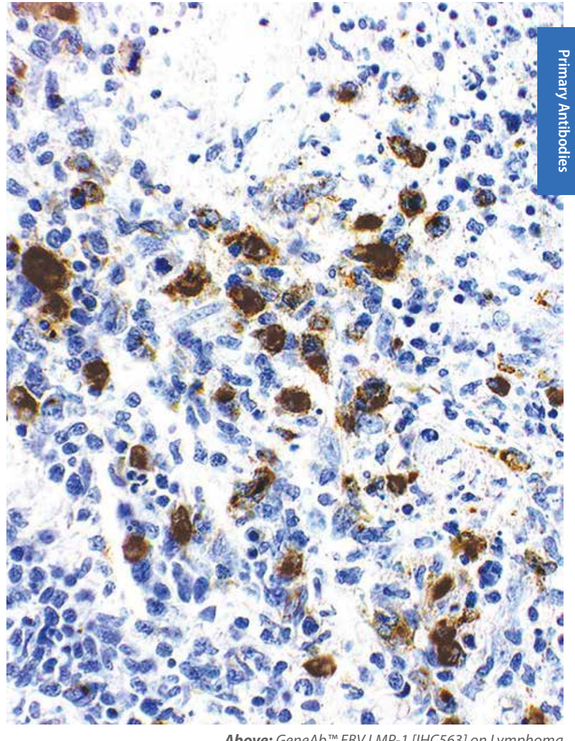
- Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC563-100	$125
1 ml, Concentrate	IHC563-1	$475
7 ml, Predilute	IHC563-7	$290
3 Positive Control Slides	IHC563-PC	$155

Designations

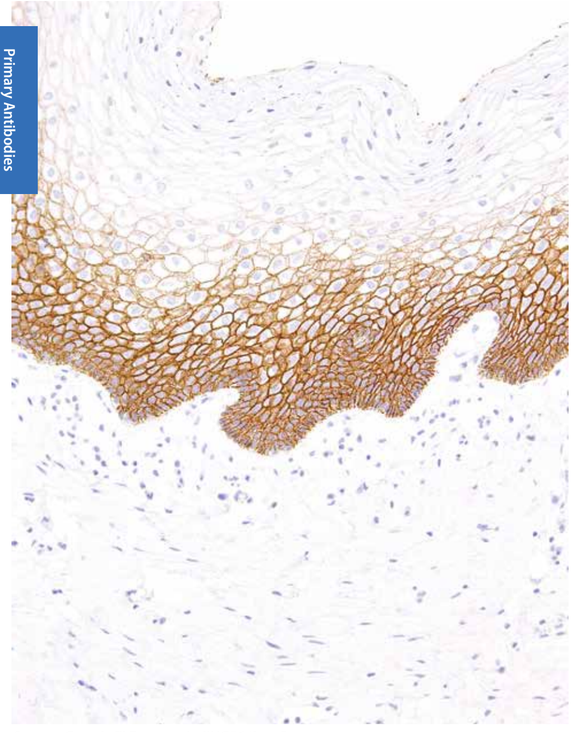
IVD: RUO:



Above: *GeneAb™ EBV LMP-1 [IHC563] on Lymphoma*

E-cadherin

Clone: IHC564 | **Source:** Mouse Monoclonal | **Positive Control:** Breast



Above: *GeneAb™ E-cadherin [IHC564] on Breast*

Description

E-cadherin is an intercellular adhesion molecule present in epithelial cells. Anti-E-cadherin stains glandular epithelium, as well as lung, gastrointestinal, and ovarian adenocarcinomas. A panel of antibodies against E-cadherin and p120 is also used to differentiate ductal (membranous staining) and lobular breast cancer (cytoplasmic staining). Anti-E-cadherin also stains some thyroid cancers.

References

1. Han AC, et al. Hum Pathol. 1997; 28:641-5. 2. Lear MP, et al. Histopathology. 1998; 32:209-16. 3. Simsir A, et al. Diagn Cytopathol. 1999; 20:125-30. 4. Karayiannakis AG, et al. Hepatogastroenterology. 1998; 45:2437-42. 5. Peralta Soler A, et al. Hum Pathol. 1997; 28:734-9. 6. Abutaily AS, et al. J Clin Pathol. 2002; 55:662-8. 7. Wahed A, et al. Ann Diagn Pathol. 2002; 6:349-51. 8. Acs G, et al. Am J Clin Pathol. 2001; 115:85-98. 9. Dabbs DJ, et al. Am J Surg Pathol. 2007; 31:427-37.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC564-100	$110
1 ml, Concentrate	IHC564-1	$545
7 ml, Predilute	IHC564-7	$250
3 Positive Control Slides	IHC564-PC	$160

Designations

IVD: RUO:

EGFR

Clone: IHC565 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma

Description

Epidermal Growth Factor Receptor (EGFR) is a tyrosine kinase present in gliocytes, epithelial cells, fibroblasts, keratinocytes, and other cell types. EGFR is overexpressed in various cancers including those of the colon, pancreas, oropharynx, stomach, and non-small cell lung, as well as head and neck squamous carcinoma and anal squamous carcinoma. EGFR expression is common in breast cancer, especially in triple-negative and basal-like breast carcinomas, and recent research has also found EGFR expressed in malignant bone and soft tissue cancers. Anti-EGFR is useful for detecting epithelioid and synovial sarcoma.

References

1. Vranic S, et al. Mod Pathol. 2010; 23:644-53. 2. Cascio MJ, et al. Mod Pathol. 2010; 23:574. 3. Tawbi H, et al. Oncologist. 2008; 13:459. 4. Ch'ng S, et al. Hum Pathol. 2008; 39:344-9. 5. Van Damme, et al. BMC Cancer. 2010; 10:189.

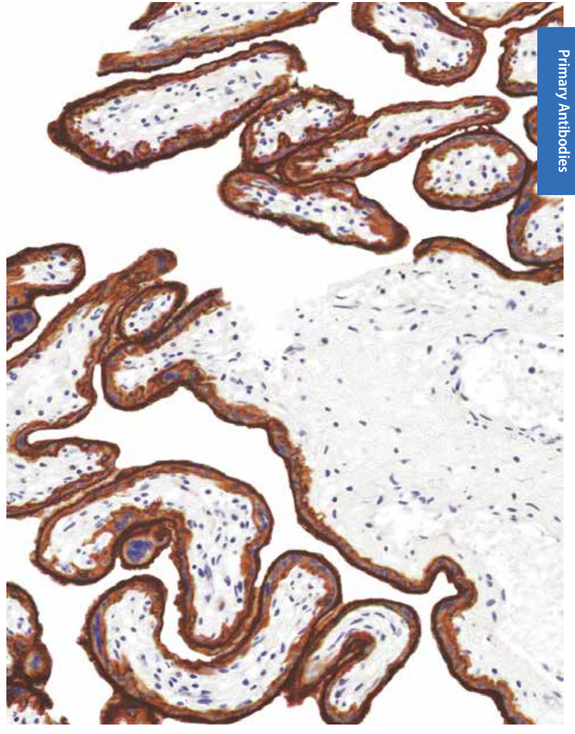
Reference Panels pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC565-100	$140
1 ml, Concentrate	IHC565-1	$515
7 ml, Predilute	IHC565-7	$325
3 Positive Control Slides	IHC565-PC	$160

Designations

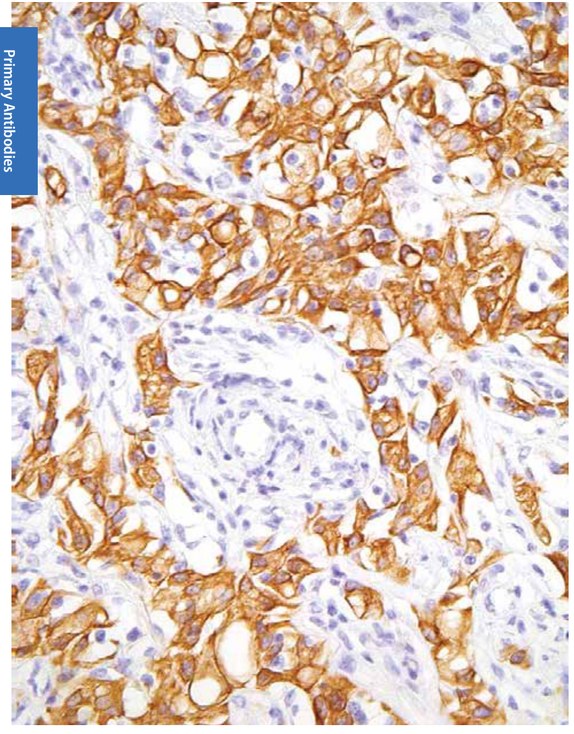
IVD: RUO:



Above: *GeneAb™ EGFR [IHC565] on Placenta*

EMA

Clone: IHC566 | **Source:** Mouse Monoclonal | **Positive Control:** Breast, Skin



Above: *GeneAb™ EMA [IHC566] on Breast*

Description

Epithelial Membrane Antigen (EMA) is a mucin glycoprotein expressed on apical epithelial cells. Anti-EMA positively stains normal and neoplastic cells including sweat glands, mammary epithelia, and squamous epithelia. Adrenal carcinoma, seminomas, paraganglioma, hepatocellular carcinoma, and embryonal carcinomas exhibit a negative stain. As Anti-EMA commonly reacts positively with meningioma, it is useful for differentiating this tumour from other intracranial neoplasms such as schwannomas.

References

1. Pincus GS, et al. Hum Pathol. 1985; 16:929-40. 2. Pincus GS, et al. Am J Clin Pathol. 1986; 77:269-77. 3. Dearnaly DP, et al. Br J Cancer. 1981; 44:85-90. 4. Redding WH, et al. Lancet. 1983; 2:1271-4. 5. Attanoos RL, et al. Histopathology. 2003; 43:231-8. 6. Beer TW, et al. Histopathology. 2000; 37:218-23. 7. Lee JS, et al. Acta Cytol. 1996; 40:631-6. 8. Fraga M, et al. Am J Clin Pathol. 1995; 103:82-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC566-100	$75
1 ml, Concentrate	IHC566-1	$260
7 ml, Predilute	IHC566-7	$145
3 Positive Control Slides	IHC566-PC	$115

Designations

IVD: RUO:

EpCAM/Epithelial Specific Antigen

Clone: IHC567 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Adenocarcinoma

Description

Epithelial Cell Adhesion Molecule (EpCAM) is a transmembrane glycoprotein that mediates cell-cell adhesion in epithelia. It is normally present on most baso-lateral surfaces of normal epithelial cells and is absent in myoepithelial cells, hepatocytes, adult squamous epithelia, mesothelial cells, and fibroblasts. Anti-EpCAM stains most adenocarcinomas and neuroendocrine tumours, including small cell carcinomas. A minority of renal clear cell carcinoma, renal oncocytoma, and hepatocellular carcinoma stain positively for EpCAM, while Anti-EpCAM stains nearly all basal cell carcinoma. Anti-EpCAM stains chromophobe renal cell carcinoma, papillary renal cell carcinoma, and cholangiocarcinoma more frequently. Anti-EpCAM can be useful for distinguishing malignancy in the peritoneal and pleural cavities.

References

1. Schnell U, et al. Biochim Biophys Acta. 2013; 1828:1989-2001. 2. Latza, et al. J Clin Pathol. 1990; 43:213-19. 3. Ma CK, et al. Am J Clin Pathol. 1993; 99:551-7. 4. Ordóñez NG. Mod Pathol. 2006; 19:417-28. 5. Tope WD, et al. Dermatol Surg. 2000; 26:415-8. 6. Ordóñez NG. Adv Anat Pathol. 2006; 13:16-25. 7. Ordóñez NG. Am J Clin Pathol. 1998; 109:85-9.

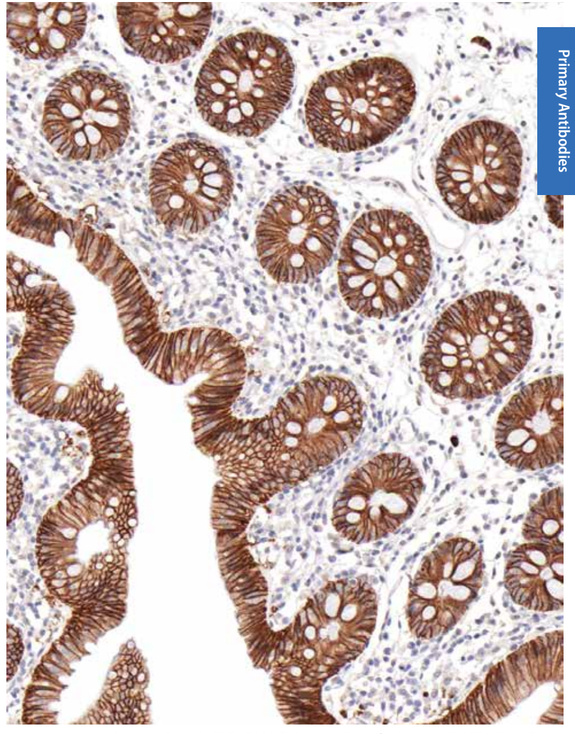
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC567-100	$125
1 ml, Concentrate	IHC567-1	$550
7 ml, Predilute	IHC567-7	$195
25 ml, Predilute	IHC567-25	$775
3 Positive Control Slides	IHC567-PC	$115

Designations

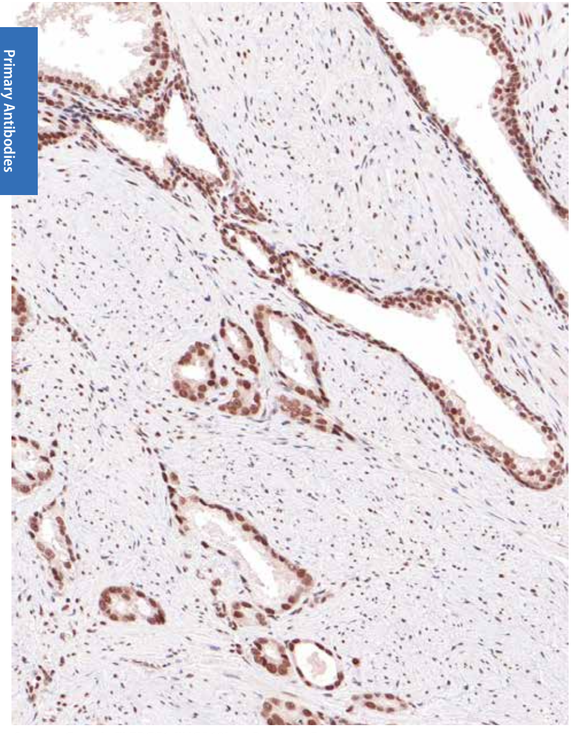
IVD: RUO:



Above: *GeneAb™ EpCAM/Epithelial Specific Antigen [IHC567] on Colon*

ERCC1

Clone: IHC568 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate, Prostate Carcinoma



Above: *GeneAb™ ERCC1 [IHC568] on Prostate Cancer*

Description

Excision Repair Cross Complementing 1 (ERCC1) is a DNA repair enzyme involved in the repair of UV-induced DNA damage. ERCC1 overexpression is associated with tumour progression in many malignancies, such as ovarian cancer, head squamous cell carcinoma, non-small cell lung cancer (NSCLC), and esophageal cancer.

References

1. Park CH, et al. J Biol Chem. 1995; 270:22657-60. 2. van Duin M, et al. Cell. 1986; 44:913-23. 3. Lee KH, et al. Lung Cancer. 2008; 60:401-7. 4. Dabholkar M, et al. J Clin Invest. 1994; 94:703-8. 5. Handra-Luca A, et al. Clin Cancer Res. 2007; 13:3855-9. 6. Joshi MB, et al. Clin Cancer Res. 2005; 11:2215-21. 7. Olaussen KA, et al. N Engl J Med. 2006; 355:983-91.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC568-100	$190
1 ml, Concentrate	IHC568-1	$880
7 ml, Predilute	IHC568-7	$380
3 Positive Control Slides	IHC568-PC	$200

Designations

IVD: RUO:

ERG

Clone: IHC569 | **Source:** Mouse Monoclonal | **Positive Control:** Hemangioma, Tonsil

Description

Erythroblastosis Virus E26 Transforming Sequence Related Gene (ERG) facilitates endothelial homeostasis. ERG is found in malignant and benign vascular endothelial tumours, including hemangiomas and Kaposi's sarcoma. ERG is present in various prostate carcinomas, but is absent in breast, colon, and urothelium carcinomas. Anti-ERG is useful for differentiating prostate carcinoma from non-prostatic epithelial tumours, and for recognizing vascular endothelial neoplasms.

References

1. Shah AV, et al. Vascul Pharmacol. 2016; 86:3-13. 2. Miettinen M, et al. Am J Surg Pathol. 2011; 35:432-41. 3. Minner S, et al. Modpathol. 2013; 26:106-16. 4. Hornick JL. Mod Pathol. 2014; 27:S47-S63. 5. Tomlins SA, et al. Am J Clin Pathol. 2013; 139:771-9.

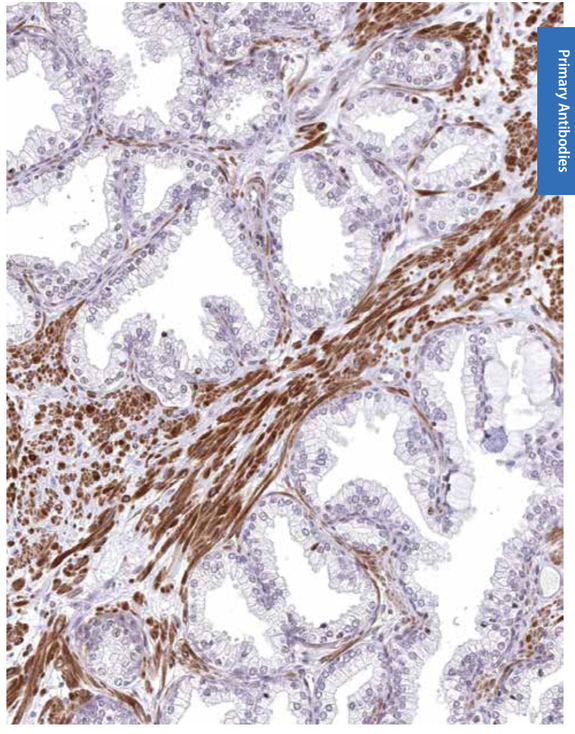
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC569-100	$110
1 ml, Concentrate	IHC569-1	$410
7 ml, Predilute	IHC569-7	$250
25 ml, Predilute	IHC569-25	$910
3 Positive Control Slides	IHC569-PC	$135

Designations

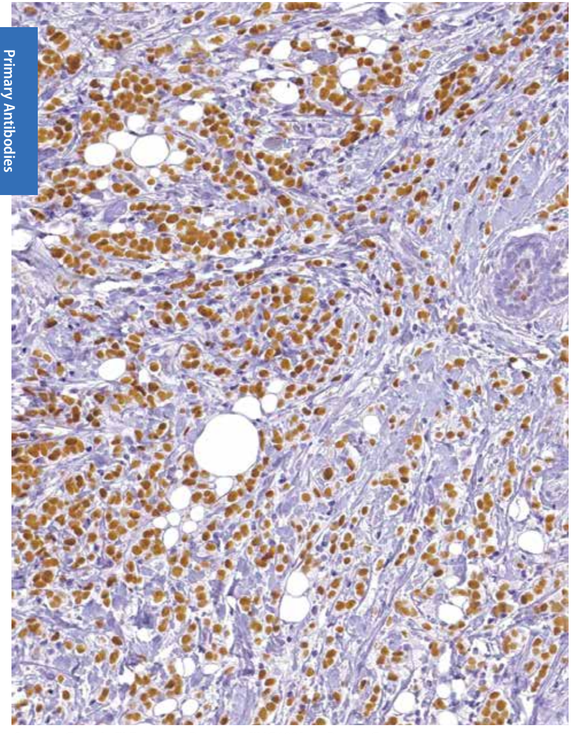
IVD: RUO:



Above: *GeneAb™ ERG [IHC569] on Prostate*

Estrogen Receptor

Clone: IHC403 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma



Above: *GeneAb™ Estrogen Receptor [IHC403] on Breast Cancer*

Description

Estrogen Receptors (ER) are a group of nuclear hormone receptors activated by the hormone estrogen. ER is found in normal epithelial cells of the breast and endometrium, as well as in breast cancer cells.

References

1. Dahlman-Wright K, et al. Pharmacol Rev. 2006; 58:773-81. 2. Levin ER, et al. Mol Endocrinol. 2005; 19:1951-9. 3. Harris HA, et al. Endocrinology. 2003; 144:4241-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC403-100	$155
1 ml, Concentrate	IHC403-1	$620
7 ml, Predilute	IHC403-7	$375
25 ml, Predilute	IHC403-25	$1,135
3 Positive Control Slides	IHC403-PC	$200

Designations

IVD: RUO:

EZH2

Clone: IHC570 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate Adenocarcinoma, Tonsil, Breast Carcinoma

Description

Enhancer of Zeste Homolog 2 (EZH2) is a methylase of histone H3 that silences gene expression in those regions. EZH2 is overexpressed or mutated in gastric, prostate, uterine, breast, and renal cell cancers, as well as in melanoma and most B- and T-cell lymphomas. Although EZH2 is usually present in follicular centers, it is not expressed in the mantle zones, plasma cells, follicular or interfollicular T-lymphocytes, natural killer T-lymphocytes, plasmacytoma, lymphoplasmacytic lymphoma, or MALT lymphoma. EZH2 is rarely present in normal breast duct epithelium and in normal and hyperplastic lymph node. Anti-EZH2 is also useful for detecting lymphoma and non-small cell lung cancers. EZH2 is associated with tumour proliferation and can be used in staining panels to distinguish aggressive lymphomas from less aggressive lymphomas or normal cells.

References

1. Ciarapica R, et al. BMC Med. 2011; 9:63. 2. Abd Al Kader L, et al. Virchows Arch. 2013; 463:697-711. 3. Varambally S, et al. Nature. 2002; 419:624-9. 4. Tan JZ, et al. Acta Pharmacol Sin. 2014; 35:161-74.

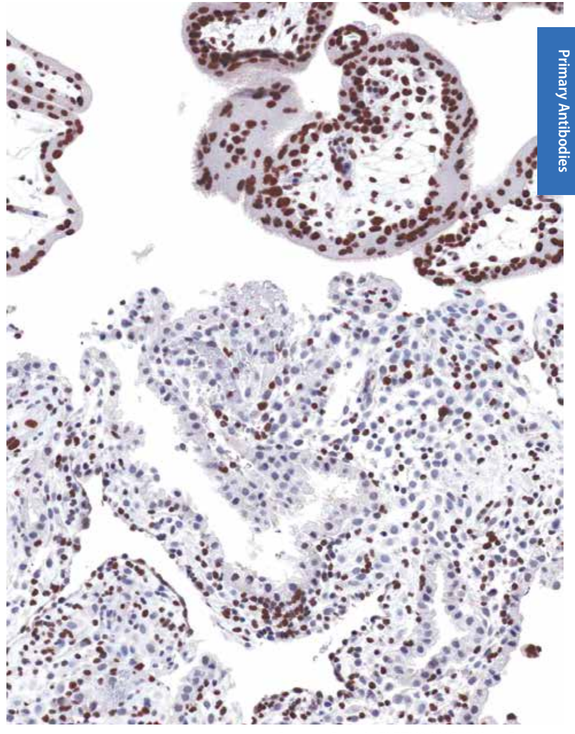
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC570-100	$135
1 ml, Concentrate	IHC570-1	$655
7 ml, Predilute	IHC570-7	$435
3 Positive Control Slides	IHC570-PC	$160

Designations

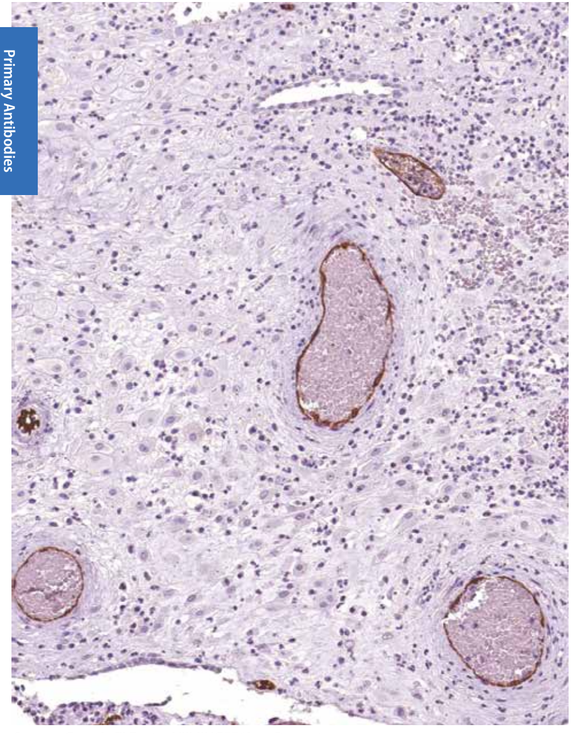
IVD: RUO:



Above: *GeneAb™ EZH2 [IHC570] on Placenta*

Factor VIII

Clone: IHC571 | **Source:** Mouse Monoclonal | **Positive Control:** Placenta



Above: *GeneAb™ Factor VIII [IHC571] on Placenta*

Description

Factor VIII (FVIII) is a blood-clotting protein that is mutated in hemophiliac patients. Anti-Factor VIII stains endothelial and neoplastic blood cells, and may determine the endothelial characteristics of some lesions of disputed histogenesis. Since not all endothelial cells express FVIII, not all endothelial tumours stain with this antibody.

References

1. Wick MR, et al. Lab Invest. 1985; 52:75. 2. Bhawan J, et al. Cancer. 1985; 55:570-6. 3. Ansell J, et al. Cancer. 1982; 50:1506-12. 4. Fulling KH, et al. Cancer. 1983; 51:1107-18. 5. Bian XW, et al. Anal Quant Cytol Histol. 2000; 22:267-74. 6. Yamamoto T, et al. Pathol Int. 1996; 46:364-71. Zatterstrom UK, et al. Head Neck. 1995; 17:312-8.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC571-100	$85
1 ml, Concentrate	IHC571-1	$365
7 ml, Predilute	IHC571-7	$195
3 Positive Control Slides	IHC571-PC	$160

Designations

IVD: RUO:

Factor XIIIa

Clone: IHC572 | **Source:** Mouse Monoclonal | **Positive Control:** Dermatofibroma

Description

Factor XIIIa (FXIIIa), also known as **Activated Factor XIII,** is a blood coagulation factor that stabilizes fibrin and is present in monocytes, macrophages, platelets, megakaryocytes, dermal dendritic cells, and fibroblast-like mesenchymal or histiocytic cells in the placenta. Anti-Factor XIIIa is useful for distinguishing between dermatofibrosarcoma protuberans (±), dermatofibroma (mostly +), and desmoplastic malignant melanoma (-). Hemangioendothelioma, hemangiopericytoma, capillary hemagioblastoma, hepatocellular carcinoma, glomus tumour, xanthogranuloma, xanthoma, and meningioma all stain positively with Anti-Factor XIIIa.

References

1. Abenoza P, et al. Am J Dermatopathol. 1993; 15:429-34. 2. Horenstein MG, et al. Am J Surg Pathol. 2000; 24:996-1003. 3. Kraus MD, et al. Am J Dermatopathol. 2001; 23:104-11.

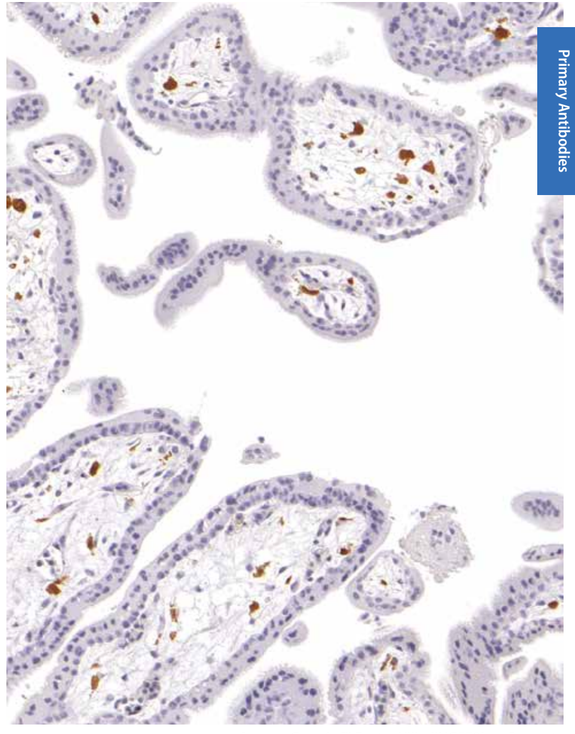
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC572-100	$130
1 ml, Concentrate	IHC572-1	$455
7 ml, Predilute	IHC572-7	$195
3 Positive Control Slides	IHC572-PC	$100

Designations

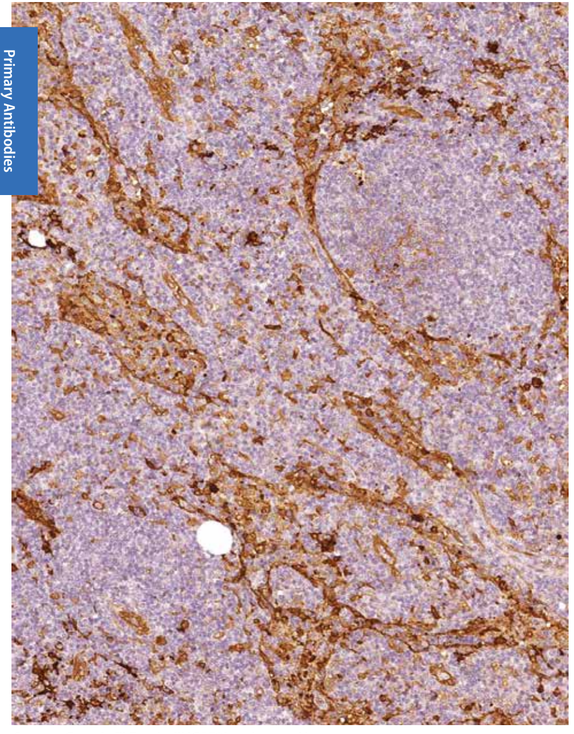
IVD: RUO:



Above: *GeneAb™ Factor XIIIa [IHC572] on Placenta*

Fascin

Clone: IHC573 | **Source:** Mouse Monoclonal | **Positive Control:** Hodgkin's Lymphoma



Above: *GeneAb™ Fascin [IHC573] on Lymph Node*

Description

Fascin is an actin cross-linking protein associated with cell motility. Fascin is detectable in dendritic cells, Reed-Sternberg cells, nodular sclerosis variants, mixed cellularity, and lymphocyte depletion in Hodgkin's disease, while being undetectable in lymphoid cells, plasma cells, and myeloid cells. Anti-Fascin is useful for differentiating between Hodgkin's and non-Hodgkin's lymphoma. As fascin is absent in neoplastic follicles in follicular lymphoma, Anti-Fascin is useful for differentiating these lymphomas from reactive follicular hyperplasia, where the number of follicular dendritic cells is normal or increased.

References

1. Pinkus GS, et al. Am J Pathol. 1997; 150:543-62. 2. Pelosi G, et al. Lung Cancer. 2003; 42:203-13. 3. Goncharuk VN, et al. J Cutan Pathol. 2002; 29:430-8. 4. Kempf W, et al. J Cutan Pathol. 2002; 29:295-300. 5. Kraus MD, et al. Am J Dermatopathol. 2001; 23:104-11. 6. Hu W, et al. Clin Exp Metastasis. 2000; 18:83-8. 7. Chu PG. Ann Diagn Pathol. 1999; 3:104-33. 8. Grothey A, et al. Br J Cancer. 2000; 83:870-3.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC573-100	$150
1 ml, Concentrate	IHC573-1	$635
7 ml, Predilute	IHC573-7	$330
3 Positive Control Slides	IHC573-PC	$160

Designations

IVD: RUO:

FGF2

Clone: IHC574 | **Source:** Mouse Monoclonal | **Positive Control:** Liver Cell Carcinoma

Description

FGF2, also known as **b-FGF** or **Basic Fibroblast Growth Factor,** is suggested to play a role in angiogenesis; this is expected to occur in both normal and cancerous cells. Overexpression of FGF2 has been implicated in aggressive cancer phenotypes, enhanced chemotherapy resistance, and metastatic tumour phenotypes. Studies have also found FGF2 expression to be increased in fibroblasts, endothelial cells in early oral submucous fibrosis, and in advanced fibrosis.

References

1. Akl MR, et al. Oncotarget. 2016; 7:44735-62. 2. Pandiar D, et al. J Oral Maxillofac Pathol. 2014; 18:155-61. 3. Bishen KA, et al. J Oral Pathol Med. 2008; 37:402-11.

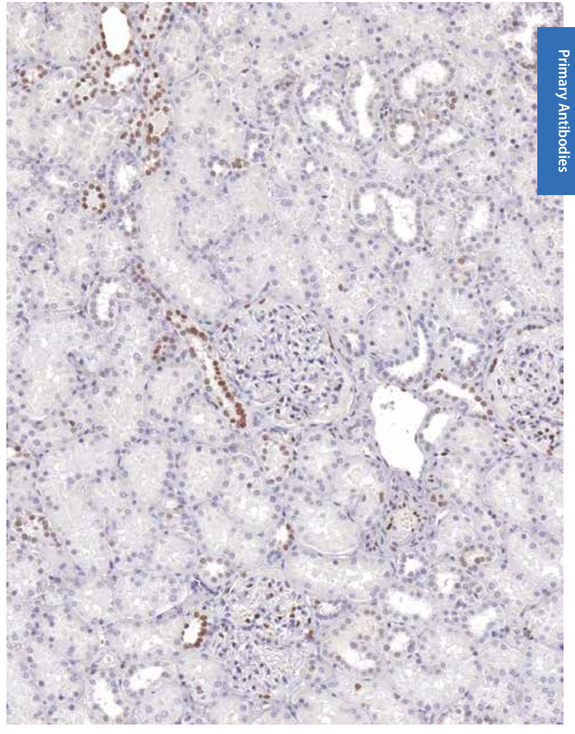
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC574-100	$155
1 ml, Concentrate	IHC574-1	$595
7 ml, Predilute	IHC574-7	$280
3 Positive Control Slides	IHC574-PC	$145

Designations

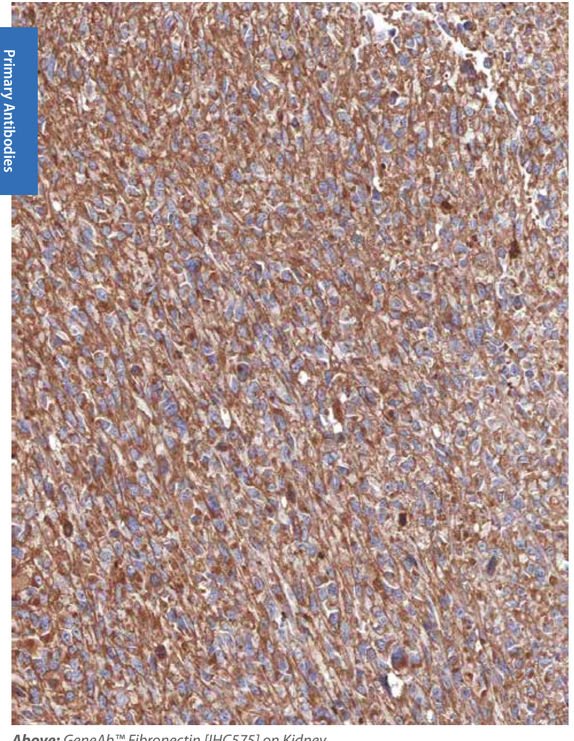
IVD: RUO:



Above: *GeneAb™ FGF2 [IHC574] on Kidney*

Fibronectin

Clone: IHC575 | **Source:** Mouse Monoclonal | **Positive Control:** Kidney



Above: *GeneAb™ Fibronectin [IHC575] on Kidney*

Description

Fibronectin is a glycoprotein that contributes to cell adhesion, migration, and metastasis. Renal cancer cells exhibit higher expression of fibronectin, therefore Anti-Fibronectin is useful for assessing the progression and aggressiveness of renal cancer cells.

References

1. Waalkes S, et al. BMC Cancer. 2010; 10:503. 2. Chen SH, et al. Anticancer Res. 2010; 30:4177-86.

Reference Panels

pg.

- Soft Tissue.....302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC575-100	$100
1 ml, Concentrate	IHC575-1	$340
7 ml, Predilute	IHC575-7	$195
3 Positive Control Slides	IHC575-PC	$100

Designations

IVD: RUO:

Fli-1

Clone: IHC576 | **Source:** Mouse Monoclonal | **Positive Control:** Primitive Neuroectodermal Tumour

Description

Friend Leukemia Integration 1 (Fli-1) is a transcription factor involved in cellular proliferation and tumourigenesis, and is normally expressed in endothelial and hematopoietic cells, including T-lymphocytes. Anti-Fli-1 is a valuable tool in the discrimination of Ewing's sarcoma/peripheral primitive neuroectodermal tumour (ES/PNET) from most of its potential mimics. Most cases of ES/PNET are characterized by a chromosomal translocation resulting in a fusion oncoprotein and aberrant transcription factor EWS/Fli-1. Fli-1 has been found to play an important role in the embryologic development of blood vessels, and is specifically expressed in adult endothelial cells in all types of blood vessels, as well as in both benign and malignant vascular tumours.

References

1. Rao VN, et al. Oncogene. 1993; 8:2167-73. 2. Mhawech-Fauceglia P, et al. Histopathology. 2006; 49:569-75. 3. Ohno T, et al. Cancer Res. 1993; 53:5859-63. 4. Ellison DA, et al. Hum Pathol. 2007; 38:205-11.

Reference Panels

pg.

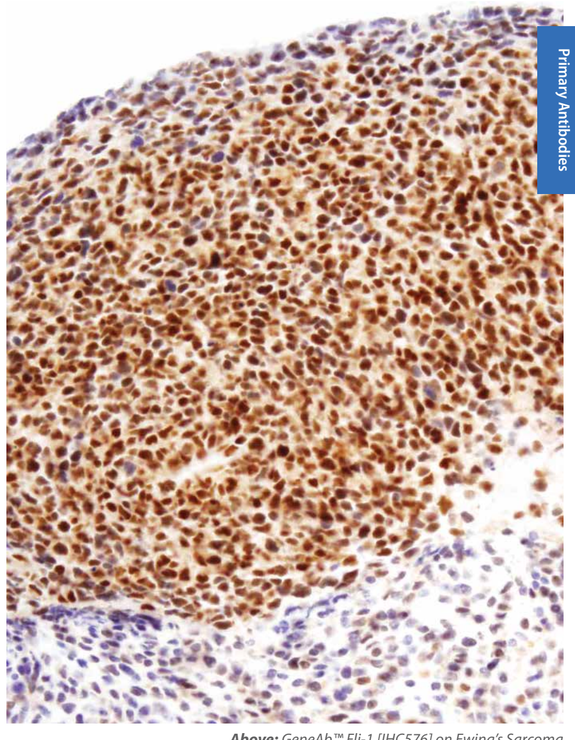
- Pediatric.....300
- Soft Tissue.....302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC576-100	$165
1 ml, Concentrate	IHC576-1	$640
7 ml, Predilute	IHC576-7	$505
3 Positive Control Slides	IHC576-PC	$265

Designations

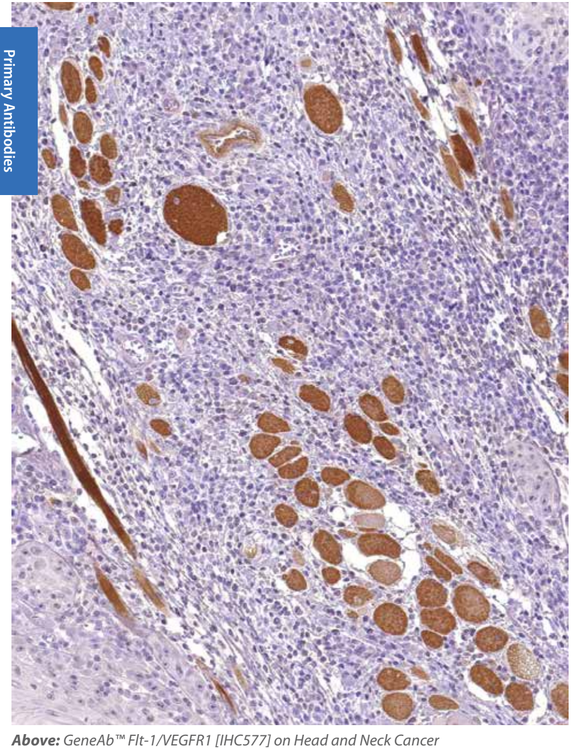
IVD: RUO:



Above: *GeneAb™ Fli-1 [IHC576] on Ewing's Sarcoma*

Flt-1/VEGFR1

Clone: IHC577 | **Source:** Mouse Monoclonal | **Positive Control:** Angiosarcoma



Above: *GeneAb™ Flt-1/VEGFR1 [IHC577] on Head and Neck Cancer*

Description

Flt-1, also known as **Fms Related Tyrosine Kinase 1** or **VEGFR1 (Vascular Endothelial Growth Factor Receptor 1),** is a tyrosine kinase involved in lymphangiogenesis, angiogenesis, and wound healing. It is present in endothelial cells, osteoblasts, placental trophoblasts, renal mesangial cells, and some hematopoietic stem cells. Anti-Flt-1/VEGFR1 is useful for identifying carcinomas of the larynx and esophagus.

References

1. Zhou X, et al. Sci Rep. 2015; 5:10071. 2. Xu WW, et al. Oncotarget. 2015; 6:1790-805.

Reference Panels

pg.
Head and Neck.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC577-100	$140
1 ml, Concentrate	IHC577-1	$540
7 ml, Predilute	IHC577-7	$270
3 Positive Control Slides	IHC577-PC	$145

Designations

IVD: RUO:

FOXA1

Clone: IHC578 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma

Description

Forkhead Box A1 (FOXA1), also known as **Hepatocyte Nuclear Factor 3α (HNF3α),** is a transcription factor present in normal breast ductal epithelium and other epithelia including that of the bladder, colon, lung, pancreas, and prostate. Studies have found FOXA1 to be co-expressed with estrogen receptor in many cases of breast carcinoma, and Anti-FOXA1 is therefore useful in sub-classifying this cancer.

References

1. Albergaria A, et al. Breast Cancer Res. 2009; 11:1-15. 2. Thorat MA, et al. J Clin Pathol. 2008; 61:327-32.

Reference Panels

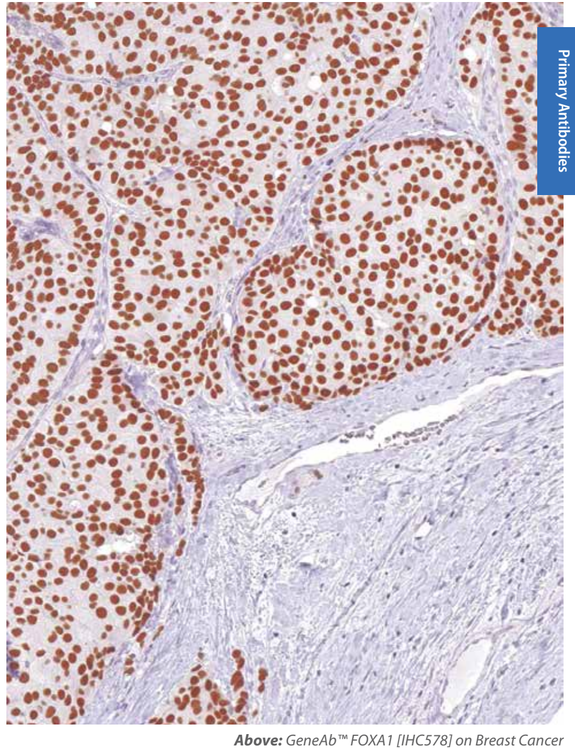
pg.
Breast/Gynecological.....277

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC578-100	$145
1 ml, Concentrate	IHC578-1	$475
7 ml, Predilute	IHC578-7	$305
3 Positive Control Slides	IHC578-PC	$110

Designations

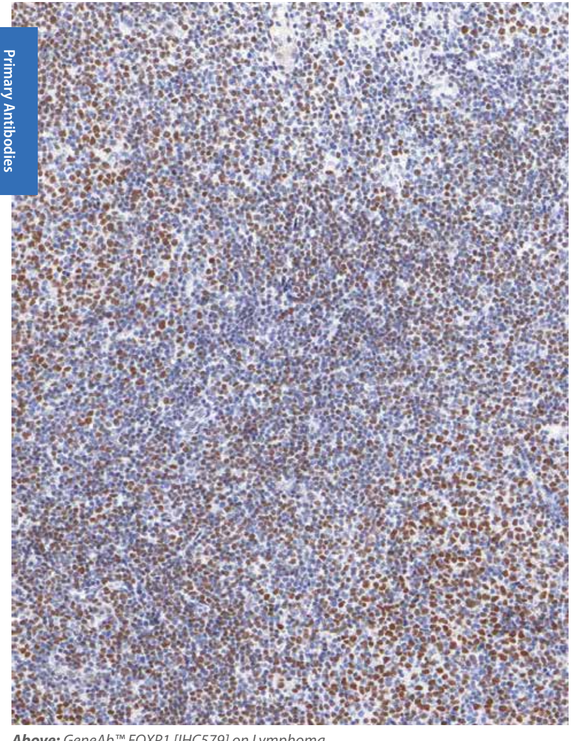
IVD: RUO:



Above: *GeneAb™ FOXA1 [IHC578] on Breast Cancer*

FOXP1

Clone: IHC579 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node



Above: *GeneAb™ FOXP1 [IHC579] on Lymphoma*

Description

Forkhead Box Protein P1 (FOXP1) is a transcription factor involved in brain, heart, and lung development. Diffuse large B-cell lymphoma (DLBCL) can be separated into two subtypes, germinal center B-cell or activated B-cell, or otherwise be defined as unclassified DLBCL, which can be difficult to differentiate. By using a panel of antibodies against CD10, BCL6, MUM1/IRF4, GCET1, FOXP1, LMO2, and BCL2, the sub-classification of DLBCL can be made.

References

1. Alizadeh AA, et al. Nature. 2000; 403:503-11. 2. Rosenwald A, et al. N Engl J Med. 2002; 346:1937-47. 3. Wright G, et al. Proc Natl Acad Sci U S A. 2003; 100:9991-6. 4. Colomo L, et al. Blood, 2003; 101:78-84. 5. Hans CP, et al. Blood. 2004; 103:275-82. 6. Muris JJ, et al. J Pathol, 2006; 208:714-23. 7. Choi WW, et al. Clin Cancer Res. 2009; 15:5494-502. 8. Nyman H, et al. Mod Pathol. 2009; 22:1094-101.

Reference Panels

pg.

Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC579-100	$170
1 ml, Concentrate	IHC579-1	$640
7 ml, Predilute	IHC579-7	$390
3 Positive Control Slides	IHC579-PC	$115

Designations

IVD: RUO:

FSH

Clone: IHC580 | **Source:** Mouse Monoclonal | **Positive Control:** Pituitary Gland

Description

Follicle-Stimulating Hormone (FSH) allows for progression of ovarian folliculogenesis, and enables Sertoli cell proliferation in the testis. Anti-FSH reacts with FSH-producing cells, and therefore FSH staining is useful for classifying pituitary cancers and understanding pituitary disease.

References

1. Schmid M, et al. Pathol Res Pract. 2001; 197:663-9. 2. Uccella S, et al. Pituitary. 2000; 3:131-9. 3. La Rosa S, et al. Virchows Arch. 2000; 437:264-9.

Reference Panels

pg.

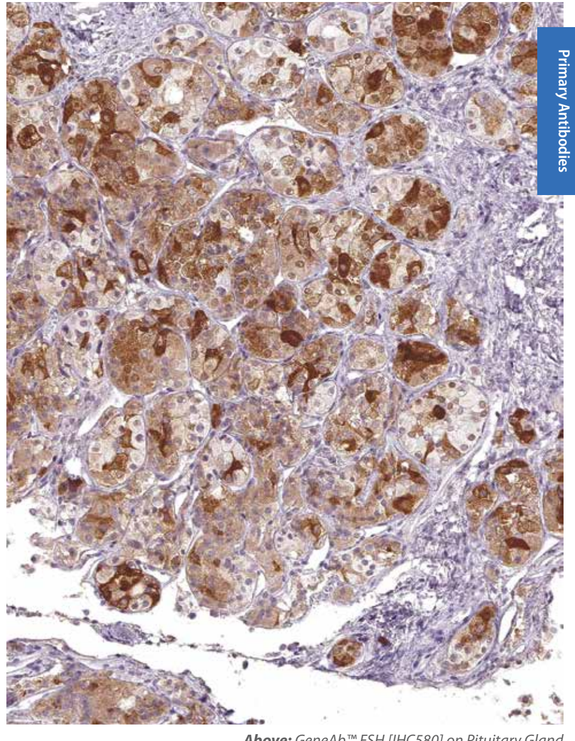
Neuropathology..... 299

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC580-100	$90
1 ml, Concentrate	IHC580-1	$255
7 ml, Predilute	IHC580-7	$145
3 Positive Control Slides	IHC580-PC	$160

Designations

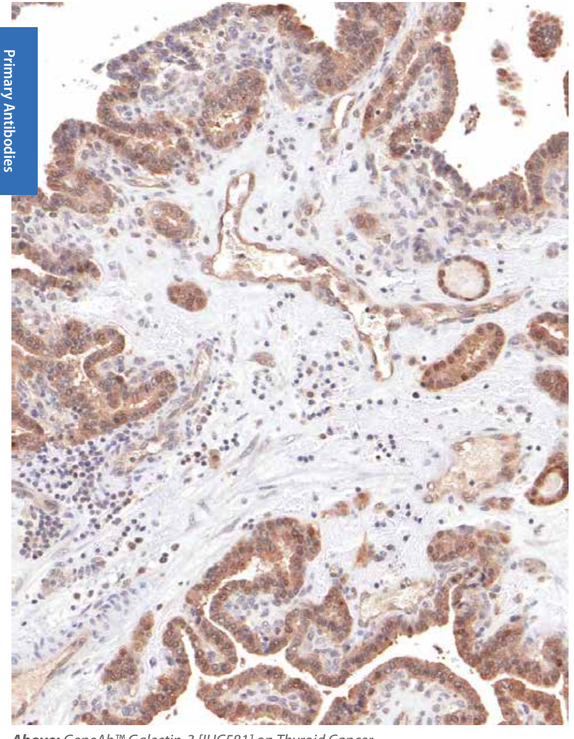
IVD: RUO:



Above: *GeneAb™ FSH [IHC580] on Pituitary Gland*

Galectin-3

Clone: IHC581 | **Source:** Mouse Monoclonal | **Positive Control:** Papillary Thyroid Carcinoma



Above: *GeneAb™ Galectin-3 [IHC581] on Thyroid Cancer*

Description

Galectin-3 is a lectin involved in cell adhesion, macrophage activation, angiogenesis, metastasis, and apoptosis. Anti-Galectin-3 is useful for distinguishing between benign and malignant thyroid neoplasms. Galectin-3 is also useful for recognizing anaplastic large cell lymphoma.

References

1. Inohara H, et al. Cancer. 1999; 85:2475-84. 2. Herrmann ME, et al. Arch Pathol Lab Med. 2002; 126:710-3. 3. Papotti M, et al. Eur J Endocrinol. 2002; 147:515-21. 4. Bartolazzi A, et al. Lancet. 2001; 357:1644-50. 5. Orlandi F, et al. Cancer Res. 1998; 58:3015-20. 6. Gasbarri A, et al. J Clin Oncol. 1999; 17:3494-502. 7. Orlandi F, et al. Cancer Res. 1998; 58:3015-20. 8. Konstantinov KN, et al. Am J Pathol. 1996; 148:25-30.

Reference Panels

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Head and Neck	288
Cytopathology	n/a

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC581-100	$115
1 ml, Concentrate	IHC581-1	$675
7 ml, Predilute	IHC581-7	$285
3 Positive Control Slides	IHC581-PC	$160

Designations

IVD: RUO:

Gastrin

Clone: IHC582 | **Source:** Mouse Monoclonal | **Positive Control:** Stomach

Description

Gastrin is a hormone that promotes hydrochloric acid secretion in the stomach. Anti-Gastrin stains human antral and pyloric mucosa G-cells, and other gastrin-producing cells, but it does not stain non-gastrin producing cells. Anti-Gastrin can react with sulfated or non-sulfated gastrin.

References

1. Rehfeld JF, et al. J Biol Chem. 1981; 256:10426-9. 2. Bornstein-Quevedo L, et al. Hum Pathol. 2001; 32:1252-6. 3. Kirchner T, et al. Am J Surg Path. 1987; 11:909-17. 4. Herrmann ME, et al. Arch Pathol Lab Med. 2000; 124:832-5.

Reference Panels

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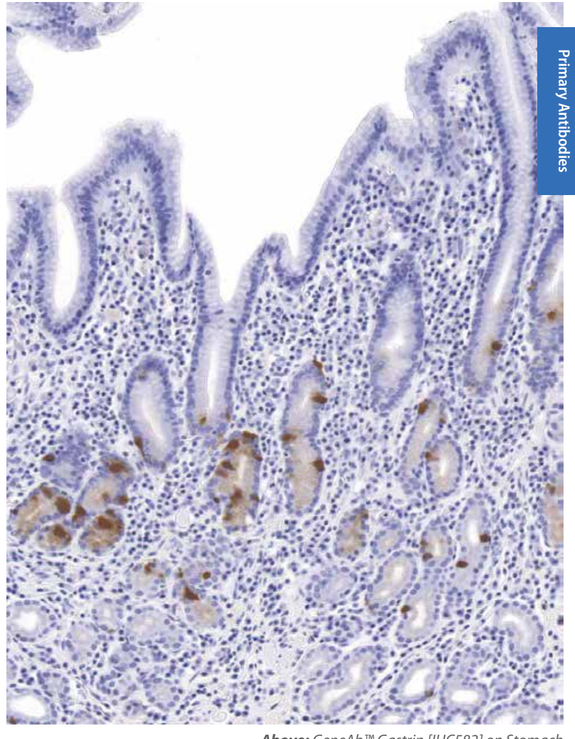
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC582-100	$100
1 ml, Concentrate	IHC582-1	$340
7 ml, Predilute	IHC582-7	$195
3 Positive Control Slides	IHC582-PC	$100

Designations

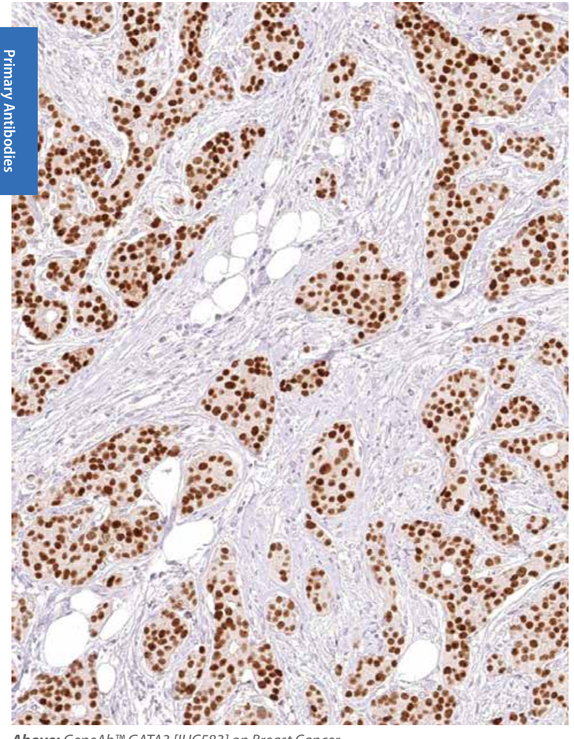
IVD: RUO:



Above: *GeneAb™ Gastrin [IHC582] on Stomach*

GATA3

Clone: IHC583 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma, Urothelial Carcinoma



Above: *GeneAb™ GATA3 [IHC583] on Breast Cancer*

Description

GATA3 is a transcription factor important in cell proliferation, development, and differentiation. GATA3 is mostly observed in breast and urothelial carcinomas, and is rarely present in other cancers such as endometrial endometrioid adenocarcinoma. Among the breast carcinomas, GATA3 has a lower expression in luminal B subtype breast carcinoma. Studies have found GATA3 expression to be associated with ER (estrogen receptor), PR (progesterone receptor), and HER2 in breast cancer cases. Urothelial carcinomas stain positively for GATA3 in invasive or high grade tumours, therefore Anti-GATA3 is useful for carcinoma diagnosis when those of the breast and bladder are plausible.

References

1. Higgins JP, et al. Am J Surg Pathol. 2007; 31:673-80. 2. Liu H, et al. Am J Clin Pathol. 2012; 138:57-64.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC583-100	$195
1 ml, Concentrate	IHC583-1	$990
7 ml, Predilute	IHC583-7	$305
25 ml, Predilute	IHC583-25	$945
3 Positive Control Slides	IHC583-PC	$205

Designations

IVD: RUO:

GCDFP-15

Clone: IHC015 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma

Description

Gross Cystic Disease Fluid Protein 15 (GCDFP-15) is a glycoprotein involved in the regulation of water transport, and is present in the apocrine metaplastic epithelial lining of breast cysts and apocrine glands of the axilla, ear canal, eyelid, vulva, and salivary glands. Most breast carcinomas stain positively, while lung carcinoma, colorectal carcinoma, and mesotheliomas rarely react with Anti-GCDFP-15. Anti-GCDFP-15 is often used for women with metastatic tumours of unknown origin.

References

1. Myal Y, et al. Mol Cell Endocrinol. 1993; 80:165-75. 2. Viacava P, et al. Virchows Arch. 1998; 432:255-60. 3. Ansai S, et al. Am J Dermatopathol. 1995; 17:249-55. 4. Mazoujian G, et al. Am J Pathol. 1983; 110:105-12. 5. Wick MR, et al. Hum Pathol. 1989; 20:281-7. 6. Hall RE, et al. Br J Cancer. 1998; 78:360-5.

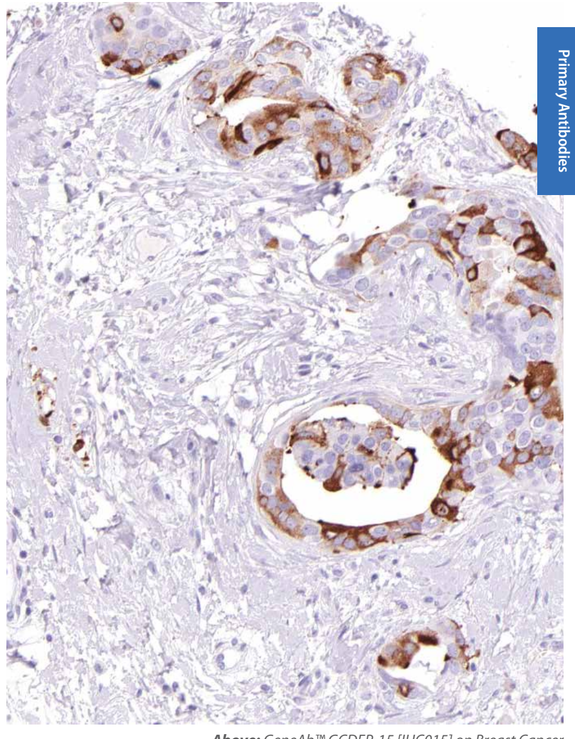
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC015-100	$145
1 ml, Concentrate	IHC015-1	$510
7 ml, Predilute	IHC015-7	$275
25 ml, Predilute	IHC015-25	$830
3 Positive Control Slides	IHC015-PC	$115

Designations

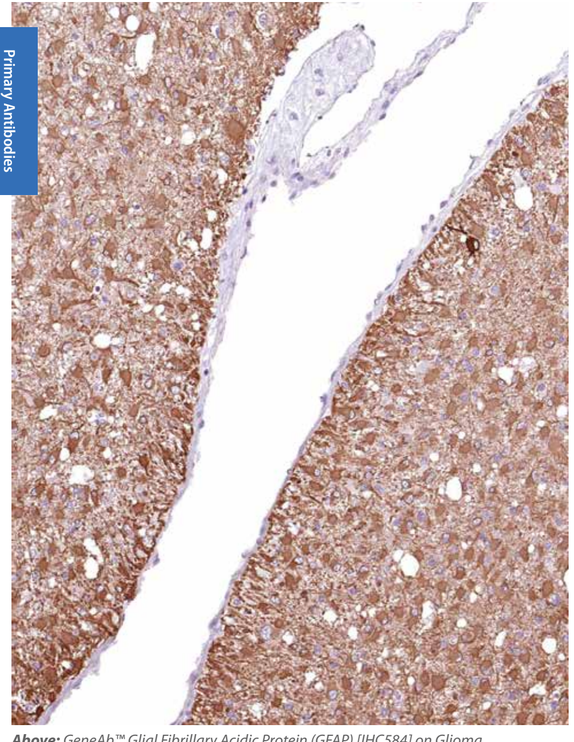
IVD: RUO:



Above: *GeneAb™ GCDFP-15 [IHC015] on Breast Cancer*

Glial Fibrillary Acidic Protein (GFAP)

Clone: IHC584 | **Source:** Mouse Monoclonal | **Positive Control:** Brain



Above: *GeneAb™ Glial Fibrillary Acidic Protein (GFAP) [IHC584] on Glioma*

Description

Glial Fibrillary Acidic Protein (GFAP) is an intermediate filament protein that is present in astrocytes and some ependymal cells of the central nervous system. In the peripheral nervous system, GFAP is present in Schwann cells, enteric glial cells, and satellite cells. Anti-GFAP staining is useful in differentiating neoplasms of astrocyte origin from other neoplasms in the central nervous system.

References

1. Isaacs A, et al. Genomics. 1998; 51:152-4. 2. Jacque CM, et al. J Neurol Sci. 1987; 35:147-55. 3. Roessmann U, et al. Brain Res. 1980; 200:13-21. 4. Korshunov AG, et al. Arkh Patol. 1995; 57:30-8. 5. McLendon RE, et al. Brain Pathol. 1994; 4:221-8.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC584-100	$165
1 ml, Concentrate	IHC584-1	$530
7 ml, Predilute	IHC584-7	$275
3 Positive Control Slides	IHC584-PC	$115

Designations

IVD: RUO:

GLUT1

Clone: IHC404 | **Source:** Mouse Monoclonal | **Positive Control:** Colorectal Carcinoma, Malignant Mesothelioma

Description

Glucose transporter type I (GLUT1), also known as **SCL2A1,** is a glucose transporter present in the blood-brain barrier and erythrocytes. GLUT1 overexpression is associated with tumour progression or poor prognoses of bladder, breast, cervical, colon, and lung carcinomas, as well as mesothelioma. Anti-GLUT1 is useful for distinguishing malignant mesothelioma (GLUT1(+)) from reactive mesothelium (GLUT1(-)).

References

1. Kato Y, et al. Mod Pathol. 2007; 20:215-20. 2. Acurio A, et al. Mod Pathol. 2008; 21:334-44. 3. Afify A, et al. Acta Cytol. 2005; 49:621-6.

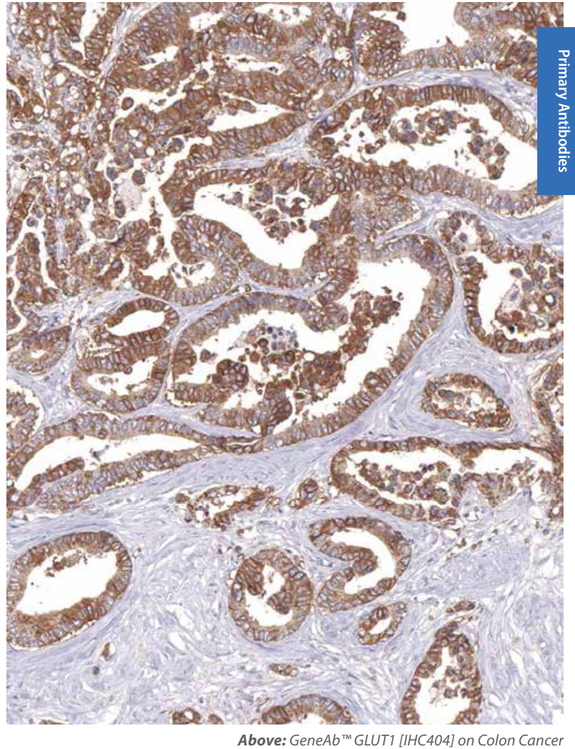
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC404-100	$100
1 ml, Concentrate	IHC404-1	$390
7 ml, Predilute	IHC404-7	$245
3 Positive Control Slides	IHC404-PC	$130

Designations

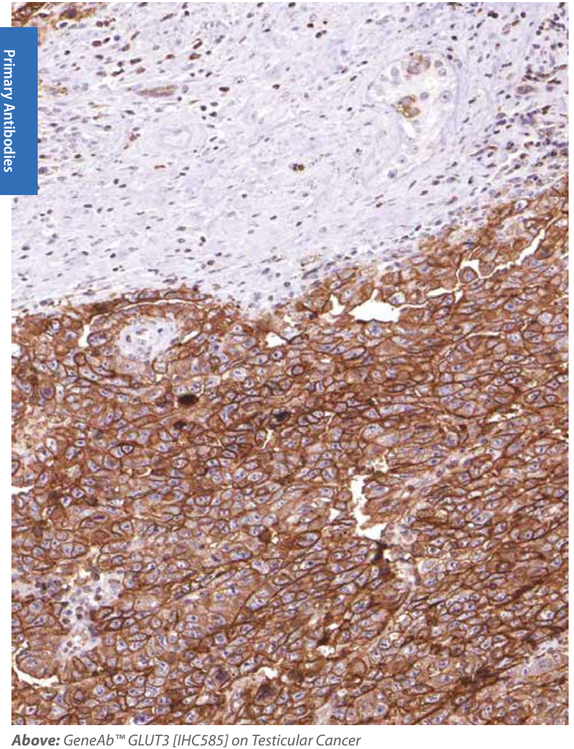
IVD: RUO:



Above: *GeneAb™ GLUT1 [IHC404] on Colon Cancer*

GLUT3

Clone: IHC585 | **Source:** Mouse Monoclonal | **Positive Control:** Embryonal Carcinoma, Yolk Sac Tumour



Above: *GeneAb™ GLUT3 [IHC585] on Testicular Cancer*

Description

Glucose Transporter Membrane 3 (GLUT3) is a solute transporter present in neural cells, testis, and spermatozoa. As GLUT3 is absent in non-germ cell tumours (Leydig cell tumour and adenomatoid tumour), spermatocytic seminoma, choriocarcinoma, and immature teratoma, Anti-GLUT3 is useful for identifying germ cell neoplasms.

References

1. Howitt BE, et al. Appl Immunohistochem Mol Morphol. 2013; 21:401-7. 2. Haber RS, et al. Endocrinology. 1993; 132:2538-43.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC585-100	$210
1 ml, Concentrate	IHC585-1	$980
7 ml, Predilute	IHC585-7	$520
3 Positive Control Slides	IHC585-PC	$275

Designations

IVD: RUO:

Glutamine Synthetase

Clone: IHC586 | **Source:** Mouse Monoclonal | **Positive Control:** Hepatocellular Carcinoma

Description

Glutamine Synthetase (GS-6 or GS) catalyzes the conversion of glutamate and ammonia to glutamine in the liver, and is expressed in pericentral hepatocytes, but not in periportal hepatocytes or in the mid-zonal. Anti-Glutamine Synthetase is useful in some hepatocellular carcinomas and many high grade dysplastic nodules, and therefore may be useful in recognizing these cases. A panel of antibodies against HSP70 (heat shock protein 70), GPC3, and glutamine synthetase is useful for differentiating dysplastic from early malignant hepatocellular nodules in cirrhosis. GS staining of hepatocellular lesions is useful for the differential diagnosis of focal nodular hyperplasia (FNH), hepatic adenoma (HCA), dysplastic nodules, and low grade hepatocellular carcinoma. FNH produces a "map-like" pattern when stained with Anti-Glutamine Synthetase. Conversely, HCA can stain negatively, produce border staining, or stain around the tumour veins.

References

1. Di Tommaso L, et al. Hepatology. 2007; 45:725-34. 2. Bioulac-Sage P, et al. Liver Int. 2009; 3:459-65. 3. Shafizideh N, et al. Adv Anat Pathol. 2011; 18:438-45. 4. Bioulac-Sage, P et al. Sem Liver Dis. 2011; 31:91-103.

Reference Panels

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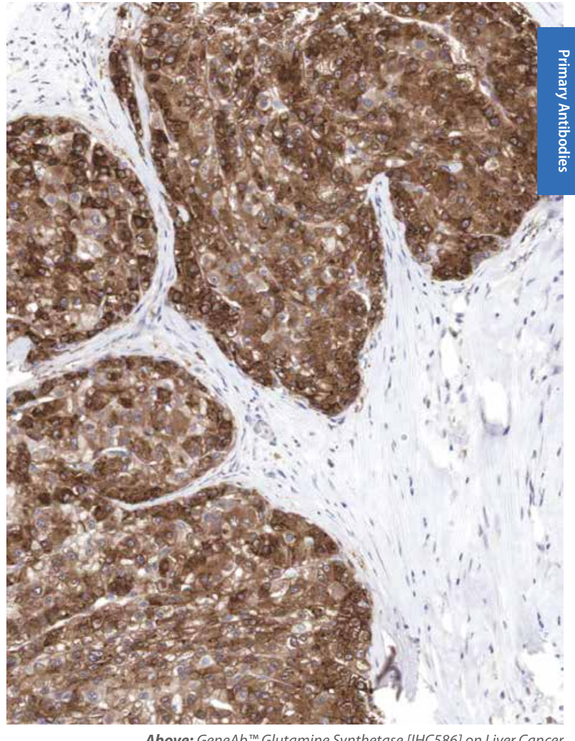
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC586-100	$140
1 ml, Concentrate	IHC586-1	$760
7 ml, Predilute	IHC586-7	$230
3 Positive Control Slides	IHC586-PC	$125

Designations

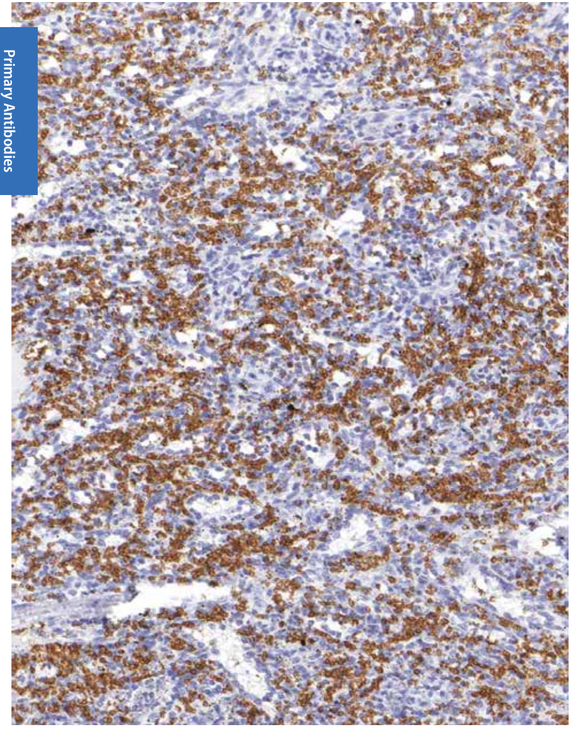
IVD: RUO:



Above: *GeneAb™ Glutamine Synthetase [IHC586] on Liver Cancer*

Glycophorin A

Clone: IHC587 | **Source:** Mouse Monoclonal | **Positive Control:** Bone Marrow



Above: *GeneAb™ Glycophorin A [IHC587] on Spleen*

Description

Glycophorin A (GPA) and Glycophorin B (GPB) are erythrocyte blood group determinants that minimize erythrocyte aggregation during the circulation of blood. Anti-Glycophorin A is useful for understanding erythroid cell development and identifying erythroid leukemias.

References

1. Rollins-Raval MA, et al. Am J Clin Pathol. 2012; 137:30-8. 2. Dong HY, et al. Am J Surg Pathol. 2011; 35:723-32. 3. Sadahira Y, et al. J Clin Pathol. 1999; 52:919-21. 4. Chang CC, et al. Am J Clin Pathol. 2000; 114:807-11.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC587-100	$135
1 ml, Concentrate	IHC587-1	$355
7 ml, Predilute	IHC587-7	$230
3 Positive Control Slides	IHC587-PC	$160

Designations

IVD: RUO:

Glypican-3

Clone: IHC405 | **Source:** Mouse Monoclonal | **Positive Control:** Hepatocellular Carcinoma

Description

Glypican-3 (GPC3) is a GPI-anchored proteoglycan involved in cell division and growth regulation. Glypican-3 is a useful tumour marker, and its expression has been shown to be upregulated in hepatocellular carcinoma (HCC), hepatoblastoma, melanoma, testicular germ cell tumours, and Wilms' tumour. Patients with HCC have presented elevated levels of GPC3 in the neoplastic liver tissues and serum, levels which are higher than detected in cirrhotic liver or liver with focal lesions, including those with hepatic adenoma and dysplastic nodules. Glypican-3 is also overexpressed in testicular germ cell tumours of certain subtypes, such as yolk sac tumours and choriocarcinoma, and in embryonal tumours.

References

1. Capurro M, et al. Gastroenterology. 2003; 125:89-97. 2. Coston WMP, et al. Am J Surg Pathol. 2008; 32:433-44. 3. Kandil D, et al. Cancer. 2007; 111:316-22. 4. Zynger DL, et al. Hum Pathol. 2008; 39:224-30. 5. Kandil DH, et al. Adv Anat Pathol. 2009; 16:125-9. 6. Zynger DL, et al. Am J Surg Pathol. 2006; 30:1570-5.

Reference Panels

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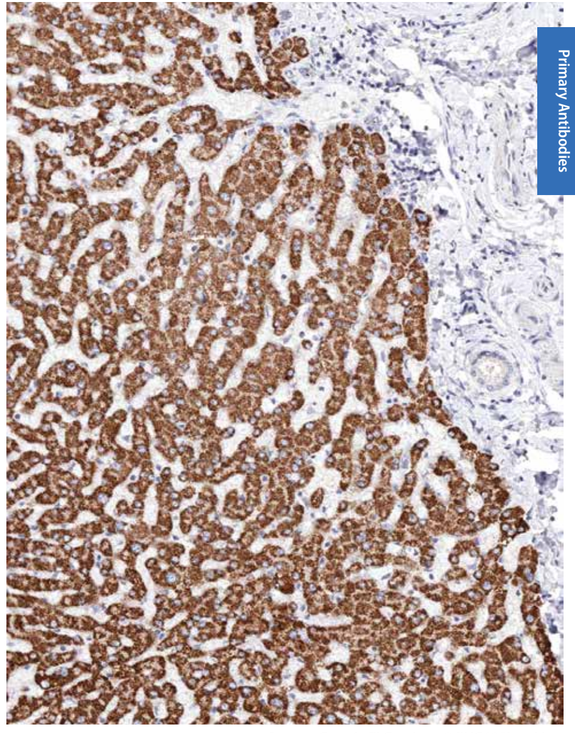
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC405-100	$165
1 ml, Concentrate	IHC405-1	$885
7 ml, Predilute	IHC405-7	$245
25 ml, Predilute	IHC405-25	$1,330
3 Positive Control Slides	IHC405-PC	$160

Designations

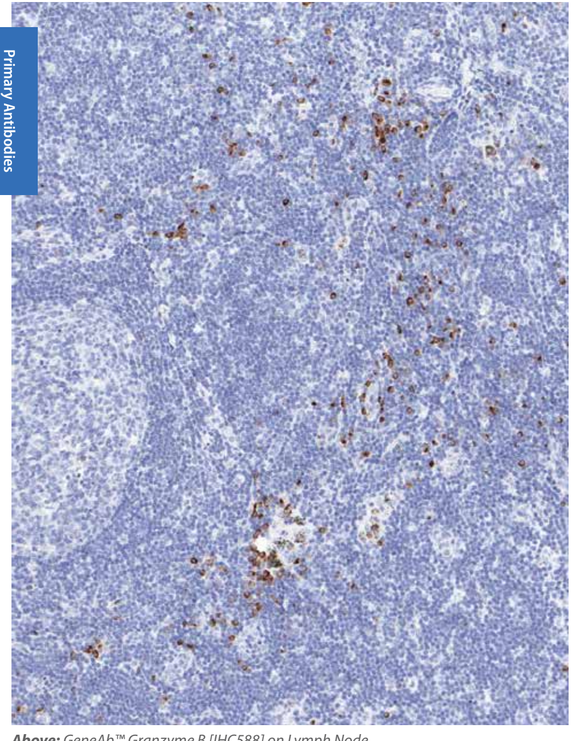
IVD: RUO:



Above: *GeneAb™ Glypican-3 [IHC405] on Liver*

Granzyme B

Clone: IHC588 | **Source:** Mouse Monoclonal | **Positive Control:** Spleen, Anaplastic Large Cell Lymphoma



Above: *GeneAb™ Granzyme B [IHC588] on Lymph Node*

Description

Granzyme B is a serine protease present in the granules of cytotoxic T-cells and natural killer (NK) cells. Anti-Granzyme B is useful for recognizing NK cell, anaplastic large cell, or T-cell lymphomas. Granzyme B is also present in Reed-Sternberg cells of Hodgkin's disease.

References

1. Oudejans JJ, et al. Blood. 1997; 89:1376-82. 2. Oudejans JJ, et al. Am J Pathol. 1996; 148:233-40. 3. Liu J, et al. J Dermatol. 2003; 30:735-41. 4. Kato N, et al. Am J Dermatopathol. 2003; 25:142-7. 5. Kummer JA, et al. Clin Exp Immunol. 1995; 100:164-72.

Reference Panels

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Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC588-100	$135
1 ml, Concentrate	IHC588-1	$580
7 ml, Predilute	IHC588-7	$330
3 Positive Control Slides	IHC588-PC	$160

Designations

IVD: RUO:

Growth Hormone (GH)

Clone: IHC589 | **Source:** Mouse Monoclonal | **Positive Control:** Pituitary

Description

Growth Hormone (GH or hGH) is a peptidic hormone produced by somatotrophs of the anterior pituitary gland. Anti-Growth Hormone stains somatotrophs in normal pituitary tissues, and is useful in identifying pituitary tumours and understanding pituitary disease or acromegaly. Studies have also found Anti-GH to stain non-pituitary cells, such as hepatocellular carcinoma and cutaneous lesions.

References

1. Fukaya T, et al. Cancer. 1980; 45:1598-603. 2. Kovacs K, et al. Virch Arch Pathol Anat. 1982; 395:59-68. 3. Cunha KS, et al. J Clin Pathol. 2003; 56:758-63. 4. Chopin LK, et al. Growth Horm IGF Res. 2002; 12:126-36. 5. Matsuno A, et al. Pathol Res Pract. 2001; 197:13-20. 6. Garcia-Caballero T, et al. Endocrine. 2000; 12:265-71.

Reference Panels

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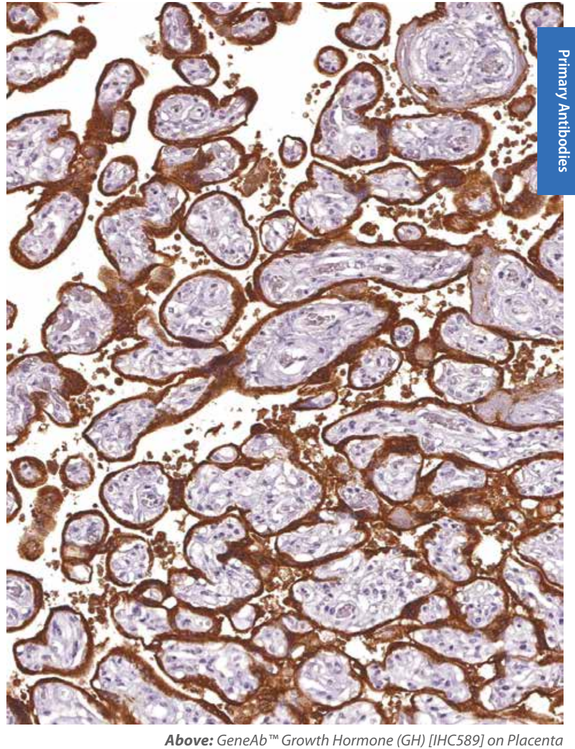
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC589-100	$125
1 ml, Concentrate	IHC589-1	$555
7 ml, Predilute	IHC589-7	$255
3 Positive Control Slides	IHC589-PC	$160

Designations

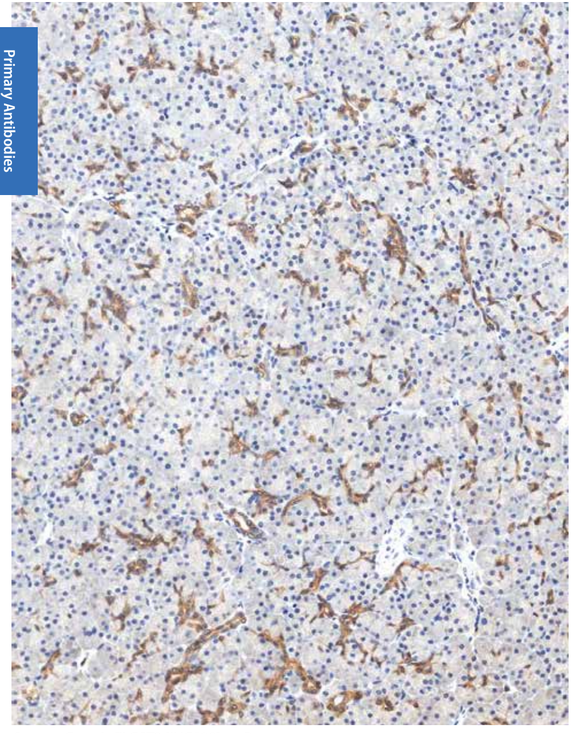
IVD: RUO:



Above: *GeneAb™ Growth Hormone (GH) [IHC589] on Placenta*

GST3

Clone: IHC590 | **Source:** Mouse Monoclonal | **Positive Control:** Sertoli Cells



Above: *GeneAb™ GST3 [IHC590] on Pancreas*

Description

GST3 defines a subset of isozymes of glutathione S-transferases (GSTs) that catalyzes the detoxification of glutathione to inhibit carcinogenesis. GST3 is present in tissues of the bowel, brain, breast, heart, kidney, liver, pancreas, skin, and stomach. Some studies have found elevated levels of GST3 in gastric carcinoma tissues relative to normal gastric epithelial tissues.

References

1. Strange RC, et al. Ann Hum Genet. 1984; 48:11-20. 2. Schipper DI, et al. Anticancer Res. 1995; 16:3721-4. 3. Nishigaki R, et al. Proteomics. 2005; 5:3205-13.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC590-100	$155
1 ml, Concentrate	IHC590-1	$595
7 ml, Predilute	IHC590-7	$345
3 Positive Control Slides	IHC590-PC	$185

Designations

IVD: RUO:

Hairy Cell Leukemia

Clone: IHC687 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Anti-Hairy Cell Leukemia stains various B-cells in the follicular mantle zone and virtually all cases of hairy cell leukemia. It also stains some high grade B-cell lymphomas.

References

1. Saati A, et al. Blood. 1989; 74:2476-85.

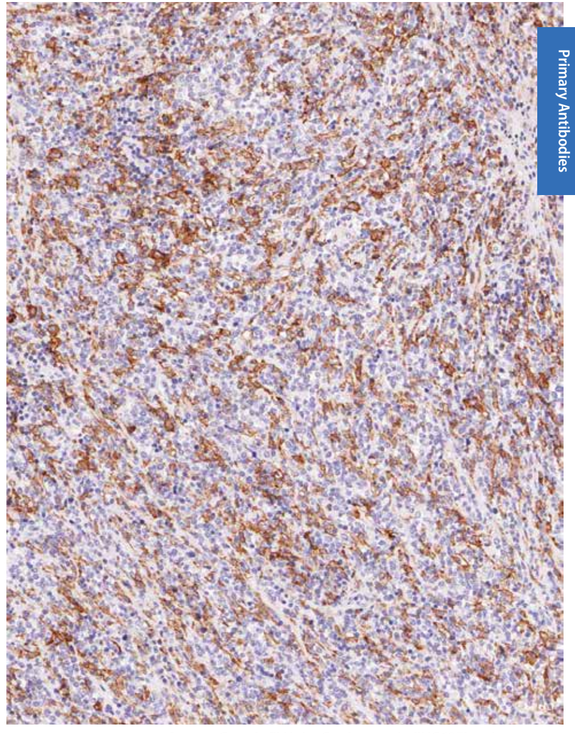
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC687-100	$210
1 ml, Concentrate	IHC687-1	$980
7 ml, Predilute	IHC687-7	$520
3 Positive Control Slides	IHC687-PC	$275

Designations

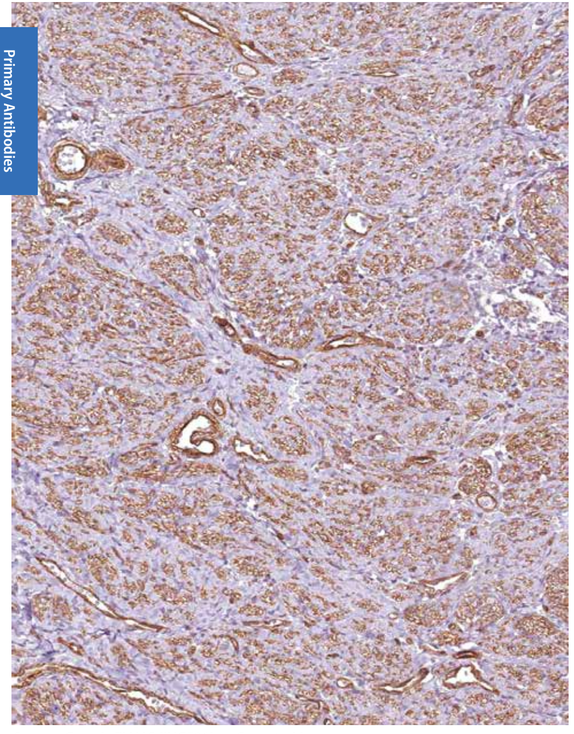
IVD: RUO:



Above: *GeneAb™ Hairy Cell Leukemia [IHC687] on Lymphoma*

HAS

Clone: IHC591 | **Source:** Mouse Monoclonal | **Positive Control:** Testis



Above: *GeneAb™ HAS [IHC591] on Smooth Muscle*

Description

Hyaluronic Acid Synthase (HAS), also known as **Hyaluronan Synthase** or **Hyaluronan Acid Synthase-1 (HAS1),** is a membrane-bound enzyme which produces hyaluronic acid (HA) from its substrates UDP-α-N-acetyl-D-glucosamine and UDP-α-D-glucuronate. The synthesis of HA allows tumour cells to migrate from the primary tumour mass. It also promotes the epithelial-mesenchymal transition through the activation of Rho GTPases and association with the CD44 receptor, which upregulates MMPs and proteolytic enzyme secretions involved in cancer metastasis. HAS is an emerging marker for cancer metastasis, as levels of HAS are elevated in malignant transformed tissues.

References

1. Bharadwaj AG, et al. Am J Path. 2009; 174:1027-36. 2. Fisher GJ. J Cell Commun Signal. 2015; 9:91-2. 3. Golshani R, et al. Cancer Res. 2008; 68:483-91. 4. Toole BP. Nat Rev Cancer. 2004; 4:528-39. 5. Vigetti D, et al. Adv Cancer Res. 2014; 123:95-119.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC591-100	$210
1 ml, Concentrate	IHC591-1	$980
7 ml, Predilute	IHC591-7	$520
3 Positive Control Slides	IHC591-PC	$275

Designations

IVD: RUO:

HBME-1

Clone: IHC592 | **Source:** Mouse Monoclonal | **Positive Control:** Mesothelioma

Description

HBME-1 is an antigen present on mesothelial microvilli. Anti-HBME-1 stains benign mesothelial cells and malignant mesothelioma. It is useful for differentiating mesothelioma from adenocarcinomas. HBME-1 is also a useful marker for differentiating follicular and papillary thyroid carcinomas from benign thyroid lesions.

References

1. Coli A, et al. J Exp Clin Cancer Res. 2007; 26:221-7. 2. Cabibi D, et al. Thyroid. 2007; 17:603-7. 3. Torregrossa L, et al. Hum Pathol. 2007; 38:1482-8. 4. Barroeta JE, et al. Endocr Pathol. 2006; 17:225-34.

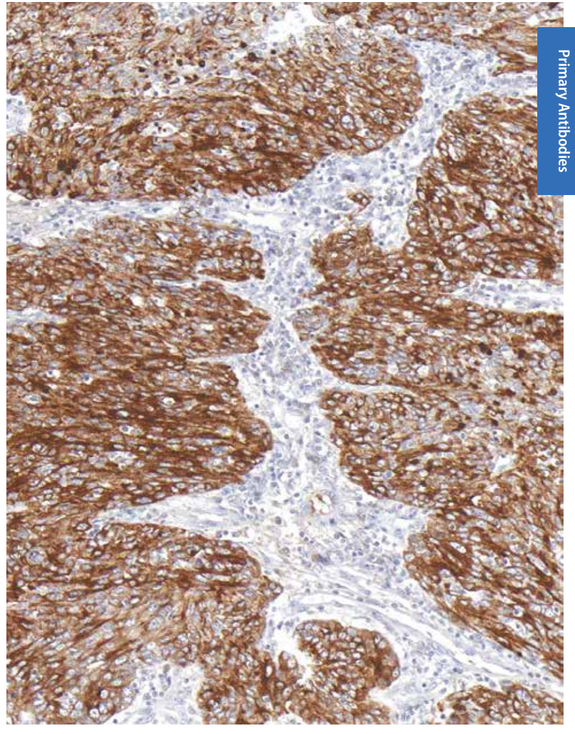
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC592-100	$135
1 ml, Concentrate	IHC592-1	$530
7 ml, Predilute	IHC592-7	$300
3 Positive Control Slides	IHC592-PC	$160

Designations

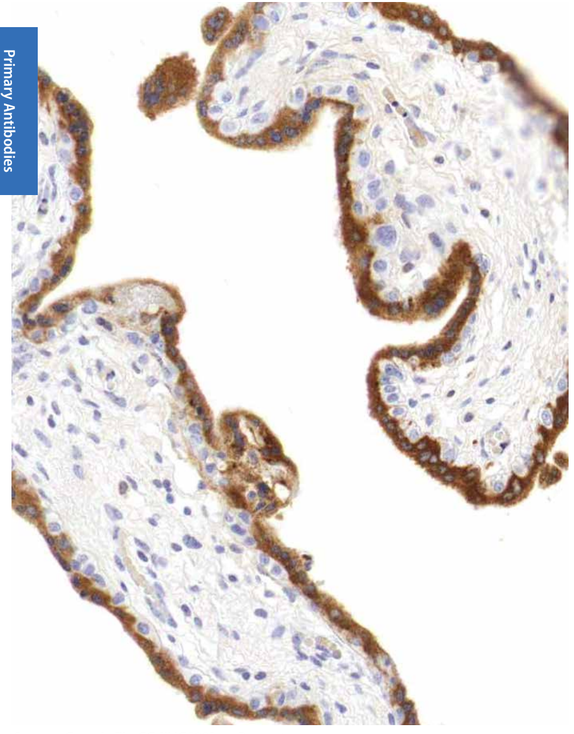
IVD: RUO:



Above: *GeneAb™ HBME-1 [IHC592] on Ovarian Cancer*

hCG

Clone: IHC593 | **Source:** Mouse Monoclonal | **Positive Control:** Placenta



Above: *GeneAb™ hCG [IHC593] on Placenta*

Description

Human Chorionic Gonadotropin (hCG) is a glycoprotein hormone produced by the trophoblastic cells of the placenta after conception. Anti-hCG is useful for identifying trophoblastic tumours, such as choriocarcinoma. hCG is also a marker for non-trophoblastic tumours such as large cell carcinoma and lung adenocarcinoma.

References

1. Morrish DW, et al. J Histochem Cytochem. 1987; 35:39-101. 2. Kurman RJ, et al. Cancer. 1976; 38:2404-19. 3. Kurman RJ, et al. Int J Gyn Pathol. 1984; 3:101-12. 4. Boucher LD, et al. Human Pathol. 1995; 26:1201-6.

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- Genitourinary (GU)..... 284

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC593-100	$75
1 ml, Concentrate	IHC593-1	$370
7 ml, Predilute	IHC593-7	$185
3 Positive Control Slides	IHC593-PC	$95

Designations

IVD: RUO:

Heat Shock Protein 27

Clone: IHC594 | **Source:** Mouse Monoclonal | **Positive Control:** Cervical Intraepithelial Neoplasm, Cervical Squamous Cell Carcinoma

Description

Heat Shock Protein 27 (HSP27) is a chaperone in protein folding. Anti-Heat Shock Protein 27 stains cervical intraepithelial neoplasia (CIN) and squamous cervical cell carcinoma. Anti-p16 staining is a useful addition to Anti-HSP27 staining when identifying CIN and cervical squamous cell carcinoma.

References

1. Tozawa-Ono A, et al. Hum Cell. 2012; 25:24-8.

Reference Panels

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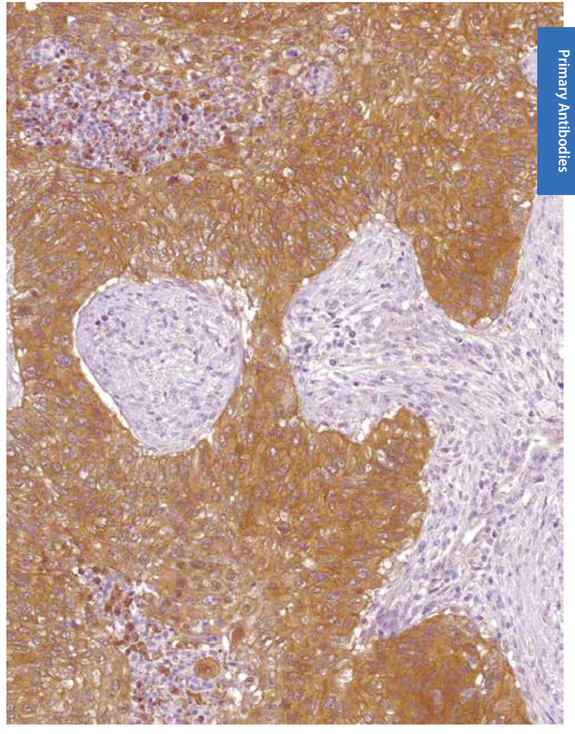
- Breast/Gynecological.....277

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC594-100	$155
1 ml, Concentrate	IHC594-1	$715
7 ml, Predilute	IHC594-7	$420
3 Positive Control Slides	IHC594-PC	$220

Designations

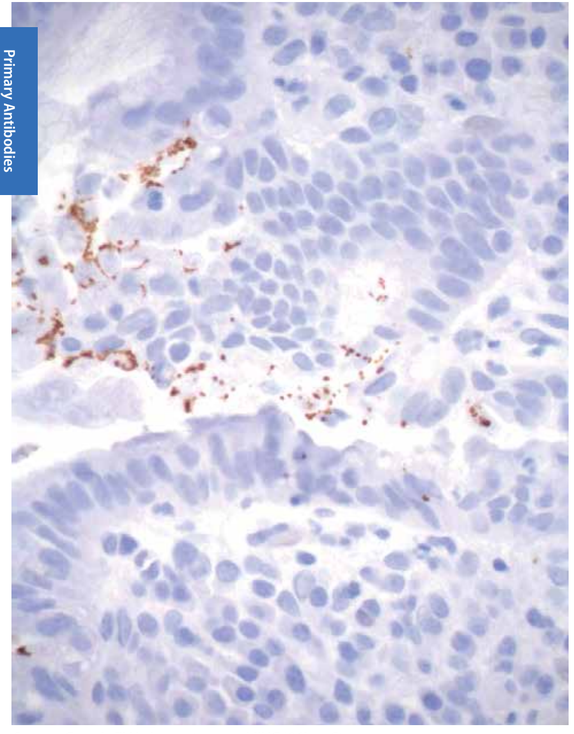
IVD: RUO:



Above: *GeneAb™ Heat Shock Protein 27 [IHC594] on Urothelial Cancer*

Helicobacter pylori

Clone: IHC406 | **Source:** Mouse Monoclonal | **Positive Control:** *H. Pylori* Infected Stomach Tissue



Above: *GeneAb™ Helicobacter pylori [IHC406] on Stomach*

Description

Helicobacter pylori are spiral-shaped, gram-negative bacteria that inhabit the mucosal lining of the gastric epithelium. Infection with *H. pylori* is strongly associated with many gastroduodenal diseases, including intestinal-type carcinomas, peptic and gastric ulcers, and chronic gastritis. There is evidence linking these bacteria to gastric and mucosa-associated lymphoid tissue lymphomas, and *H. pylori* have also been indicated as a risk factor for colorectal polyps in children.

References

1. Shimizu T, et al. Helicobacter. 1996; 1:197-206. 2. Jhala NC, et al. Am J Clin Pathol. 2003; 119:101-7. 3. Enomoto H, et al. Eur J Gastroenterol Hepatol. 1998; 10:473-8.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC406-100	$140
1 ml, Concentrate	IHC406-1	$545
7 ml, Predilute	IHC406-7	$310
25 ml, Predilute	IHC406-25	$935
3 Positive Control Slides	IHC406-PC	$165

Designations

IVD: RUO:

hENT1

Clone: IHC595 | **Source:** Mouse Monoclonal | **Positive Control:** Adrenal Cortex, Kidney, Thyroid Gland, Tonsil, Pancreas

Description

The **Human Equilibrative Nucleoside Transporter 1 (hENT1)** mediates the cellular uptake of physiologic nucleosides, including adenosine, as well as many anti-cancer drugs including gemcitabine, cytarabine, and decitabine. Deficiency of hENT1 can lead to resistance of such drugs, and the abundance of hENT1 protein in the plasma membrane is a major indicator of the efficiency and clinical outcome of these anti-cancer nucleosides.

References

1. Chow L, et al. Mod Pathol. 2005; 18:558-64. 2. Santini D, et al. Curr Cancer Drug Targets. 2011; 11:123-9. 3. Sundaram M, et al. J Biol Chem. 2001; 276:45270-5. 4. Borbath I, et al. Eur J Cancer. 2012; 48:990-6. 5. Greenhalf W, et al. J Natl Cancer Inst. 2014; 106:djt347. 6. Wu L, et al. J Transl Med. 2016; 14:66.

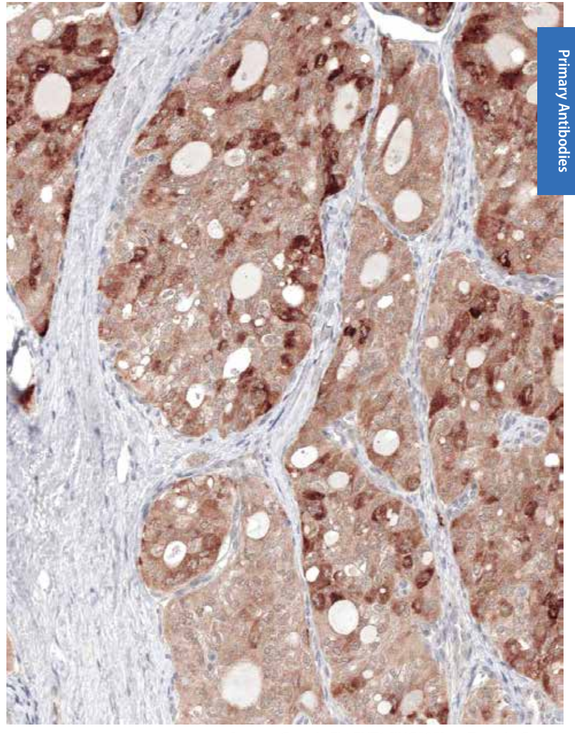
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC595-100	$210
1 ml, Concentrate	IHC595-1	$980
7 ml, Predilute	IHC595-7	$520
3 Positive Control Slides	IHC595-PC	$275

Designations

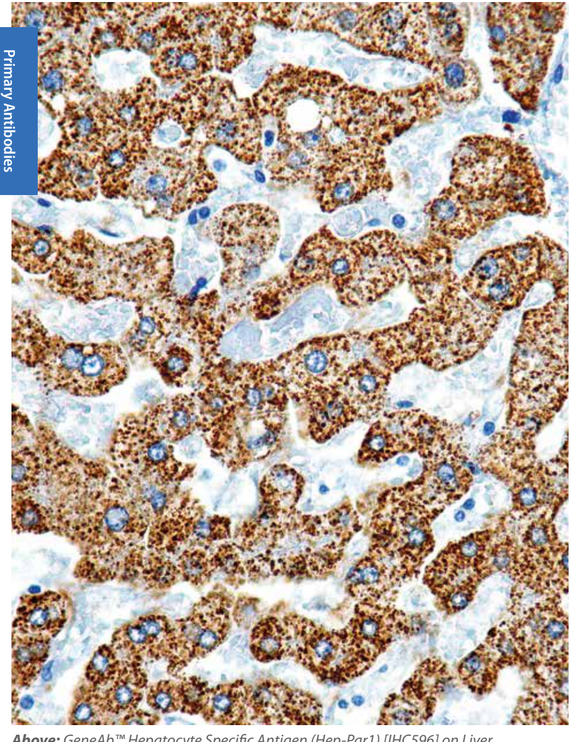
IVD: RUO:



Above: *GeneAb™ hENT1 [IHC595] on Thyroid Cancer*

Hepatocyte Specific Antigen (Hep-Par1)

Clone: IHC596 | **Source:** Mouse Monoclonal | **Positive Control:** Liver



Above: *GeneAb™ Hepatocyte Specific Antigen (Hep-Par1) [IHC596] on Liver*

Description

Hepatocyte Specific Antigen, also known as **Hep-Par1,** has proven to be strongly useful in the detection of both benign and malignant liver-derived tissues, and associated tumours such as hepatoblastoma and hepatocellular carcinoma (HCC). The pathologic diagnosis of HCC is often difficult as it shares histologic and cytologic features with adenoid cystic carcinoma, renal cell carcinoma, adenocarcinoma, and cholangiocarcinoma. Hep-Par1 is indicated as an effective marker to distinguish between these mimics, and therefore aids in the differential diagnosis of HCC.

References

1. Minervini MI, et al. Mod Pathol. 1997; 10:686-92. 2. Fasano M, et al. Mod Pathol. 1998; 11:934-8. 3. Wieczorek T, et al. Am J Clin Pathol. 2002; 118:911-21. 4. Chu PG, et al. Am J Surg Pathol. 2002; 26:978-88. 5. Maitra A, et al. Am J Clin Pathol. 2001; 115:689-94.

Reference Panels

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Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC596-100	$120
1 ml, Concentrate	IHC596-1	$490
7 ml, Predilute	IHC596-7	$305
3 Positive Control Slides	IHC596-PC	$115

Designations

IVD: RUO:

HER2/neu

Clone: IHC002 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma

Description

The **HER2/neu (c-erbB-2)** proto-oncogene is a transmembrane receptor tyrosine kinase that is clinically indicated in a number of carcinomas. Overexpression of the c-erbB-2 protein has been associated with ductal breast cancer, as well as pulmonary and gastric adenocarcinomas. A correlation between HER2 and p53 has also been documented, as overexpression of both proteins has been associated with early invasion and metastasis in bladder cancer.

References

1. Suthipintawong C, et al. Diagn Cytopathol. 1997; 17:127-33. 2. Alexiev BA, et al. Gen Diagn Pathol. 1997; 142:271-9. 3. Fernández Aceñero MJ, et al. Gen Diagn Pathol. 1997; 142:289-96. 4. Koeppen HKW, et al. Histopathology. 2001; 38:96-104. 5. Moch H, et al. Virchows Arch A Pathol Anat Histopathol. 1993; 423:329-34. 6. Cetin B, et al. Transl Gastroenterol Hepatol. 2016; 1:59.

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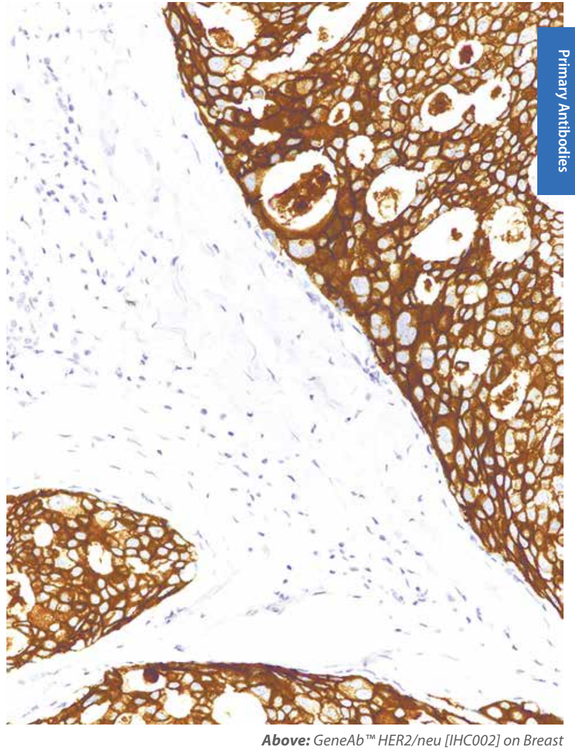
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC002-100	$145
1 ml, Concentrate	IHC002-1	$925
7 ml, Predilute	IHC002-7	$300
25 ml, Predilute	IHC002-25	$1,040
3 Positive Control Slides	IHC002-PC	$160

Designations

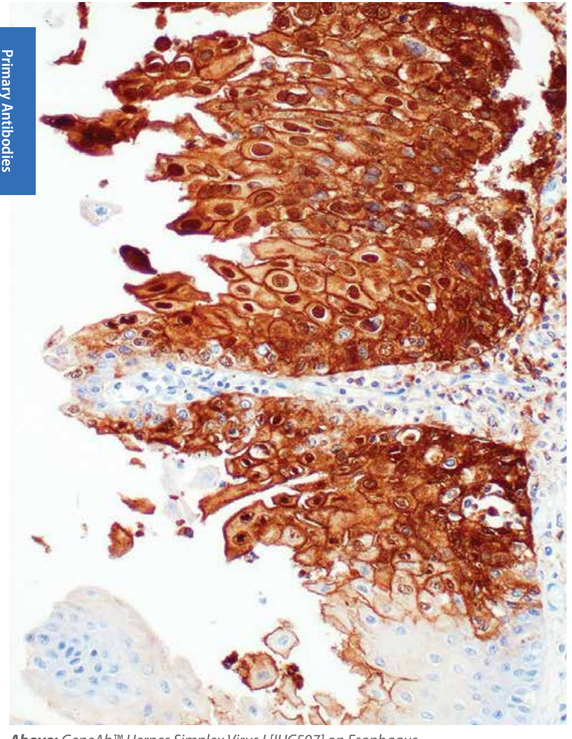
IVD: RUO:



Above: *GeneAb™ HER2/neu [IHC002] on Breast*

Herpes Simplex Virus I

Clone: IHC597 | **Source:** Mouse Monoclonal | **Positive Control:** HSV-Infected Tissue



Above: *GeneAb™ Herpes Simplex Virus I [IHC597] on Esophagus*

Description

Herpes Simplex Virus I (HSV-1) is a strain of Herpesviridae that typically infects non-genital mucosal surfaces, and, in immunocompromised individuals, may also affect internal organs, including the brain, lungs, liver, gastrointestinal tract, and adrenal glands. HSV-1 infection is contagious and manifests as a cold sore, night fever, or fever blister, and sores near the original site of infection may be recurrent. Viral antigens may be detected in the cytoplasm or nucleus.

References

1. Mehraein Y, et al. J Clin Virol. 2004; 31:25-31. 2. Martin JR, et al. Hum Pathol. 1991; 22:75-80. 3. Tomita T, et al. Virchows Arch A Pathol Anat Histopathol. 1991; 419:99-105. 4. Vogel R et al. J Virol. 2012; 86:143-55. 5. Luganini A et al. Antimicrob Agents Chemother. 2011; 55:3231-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC597-100	$125
1 ml, Concentrate	IHC597-1	$355
7 ml, Predilute	IHC597-7	$210
3 Positive Control Slides	IHC597-PC	$110

Designations

IVD: RUO:

HGAL

Clone: IHC598 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node

Description

Human Germinal center-Associated Lymphoma (HGAL) protein, also known as **Germinal Center-associated Lymphoma Protein** or **GCET,** is expressed specifically in the cytoplasm of germinal center B-cells. As HGAL is absent in mantle and marginal zone B-cells, and in the interfollicular and paracortical regions of normal tonsils and lymph nodes, this protein is an optimal prognostic marker for B-cell lymphomas derived from germinal centers, as well as follicular lymphoma. HGAL expression is also indicative of a subset of Hodgkin's lymphoma of germinal center derivation and improved survival, and predicts the outcome in patients with diffuse large B-cell lymphoma.

References

1. Natkunam Y, et al. Blood. 2005; 105:3979-86. 2. Natkunam Y, et al. Blood. 2007; 109:298-305. 3. Younes SF, et al. Am J Surg Pathol. 2010; 34:1266-76. 4. Higgins RA, et al. Arch Pathol Lab Med. 2008; 132:441-6. 5. Steinke JW, et al. Mol Immunol. 2004; 41:1145-53. 6. Lossos IS, et al. Blood. 2003; 101:433-40. 7. Azambuja D, et al. Leuk Lymphoma. 2009; 50:1830-6.

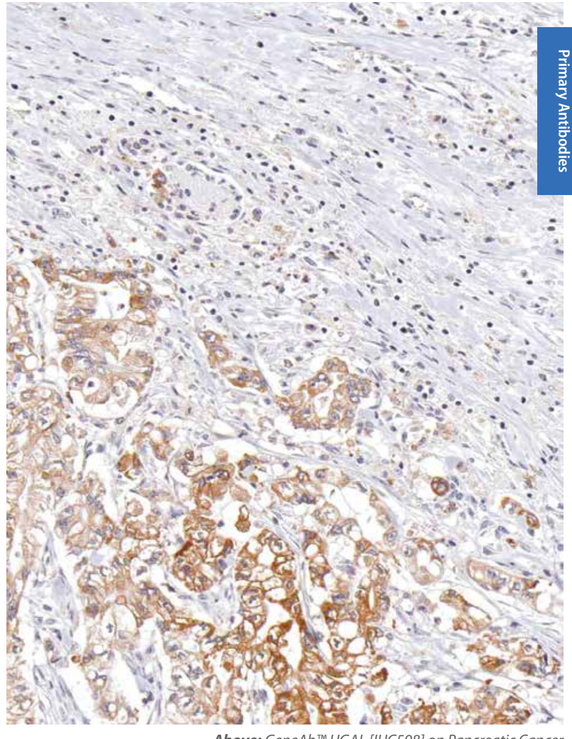
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC598-100	$130
1 ml, Concentrate	IHC598-1	$635
7 ml, Predilute	IHC598-7	$370
3 Positive Control Slides	IHC598-PC	$160

Designations

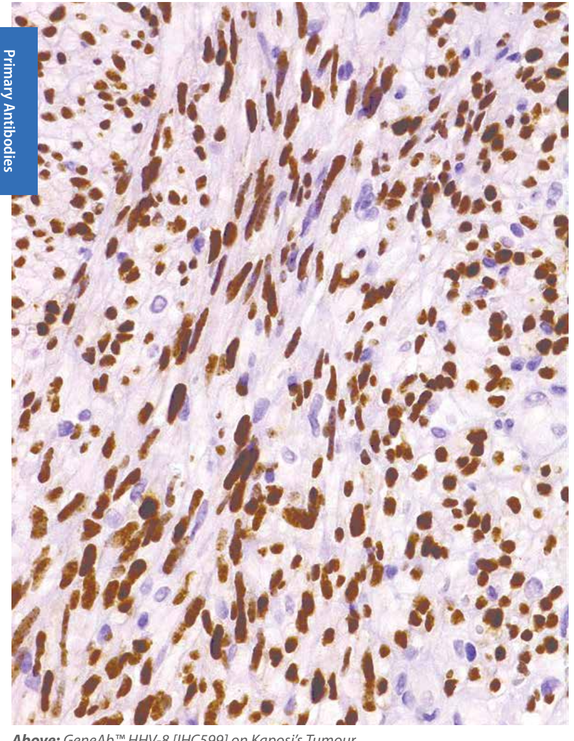
IVD: RUO:



Above: *GeneAb™ HGAL [IHC598] on Pancreatic Cancer*

HHV-8

Clone: IHC599 | **Source:** Mouse Monoclonal | **Positive Control:** Kaposi's Sarcoma



Above: *GeneAb™ HHV-8 [IHC599] on Kaposi's Tumour*

Description

Human Herpesvirus Type 8 (HHV-8) is commonly referred to as **Kaposi's Sarcoma-Associated Herpesvirus (KSHV)** due to its apparent link to the cancer of the same name. The viral DNA of HHV-8 has been detected in Kaposi's sarcoma lesions, as well as in primary effusion lymphoma, a rare distinct large B-cell neoplasm, and multicentric Castleman's disease, a lymphoproliferative disorder characterized by expanded germinal centers with vascular and B-cell proliferation.

References

1. Corbellino M, et al. AIDS Res Hum Retroviruses. 1996; 12:651-7. 2. Katano H, et al. J Med Virol. 1999; 59:346-55. 3. Katano H, et al. Am J Pathol. 1999; 155:47-52. 4. Katano H, et al. Mod Pathol. 2000; 13:77-85. 5. Kaaya E, et al. Med Oncol. 2000; 17:325-32. 6. Katano H, et al. J Hum Virol. 2001; 4:96-102. 7. Komatsu T, et al. Viral Immunol. 2001; 14:311-7. 8. Ryan P, et al. J Clin Pathol. 2002; 55:619-22. 9. Schwartz EJ, et al. Am J Surg Pathol. 2003; 27:1546-50. 10. Boulanger E, et al. Am J Hematol. 2004; 76:88-91. 11. Katano H, et al. J Hum Virol. 2001; 4:96-102. 12. Grulich AE, et al. J Acquir Immune Defic Syndr Hum Retrovirol. 1999; 20:387-93. 13. Osawa M, et al. Infect Agent Cancer. 2016; 11:37. 14. Lee YM, et al. J Pathol Transl Med. 2017; 51:99-102.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC599-100	$135
1 ml, Concentrate	IHC599-1	$535
7 ml, Predilute	IHC599-7	$315
3 Positive Control Slides	IHC599-PC	$205

Designations

IVD: RUO:

HIF-1α

Clone: IHC601 | **Source:** Mouse Monoclonal | **Positive Control:** Skin, Hypoxia-Induced Tumours, Placenta

Description

Hypoxia-Inducible Factor 1α (HIF-1α or HIF1A) is an important mediator of the cellular and systemic responses to hypoxia, promoting survival and maintaining homeostasis in conditions of low oxygen. HIF1A regulates the expression of proteins such as erythropoietin, nitric oxide synthase, and mesenchymal-epidermal transition (MET) receptor, which promote angiogenesis, anaerobic metabolism, and many other survival pathways necessary in hypoxic environments. It has been suggested that tumour hypoxia and the resultant overexpression of MET by HIF1A promotes metastasis, and MET overexpression is correlated with poor prognosis and metastatic disease in the case of breast cancer. HIF-1α expression is associated with cancer progression and clinical outcome in many types of tumours, including breast cancer, type 1 endometrial carcinoma, sarcoma, head and neck tumours, and brain tumours.

References

1. Takahashi Y, et al. Gene Ther. 2008; 15:572-82. 2. Jung SN, et al. Carcinogenesis. 2008; 29:713-21. 3. Zur Nedden S, et al. J Neurochem. 2008; 105:1901-14. 4. Semenza G, et al. Genomics; 34:437-9.

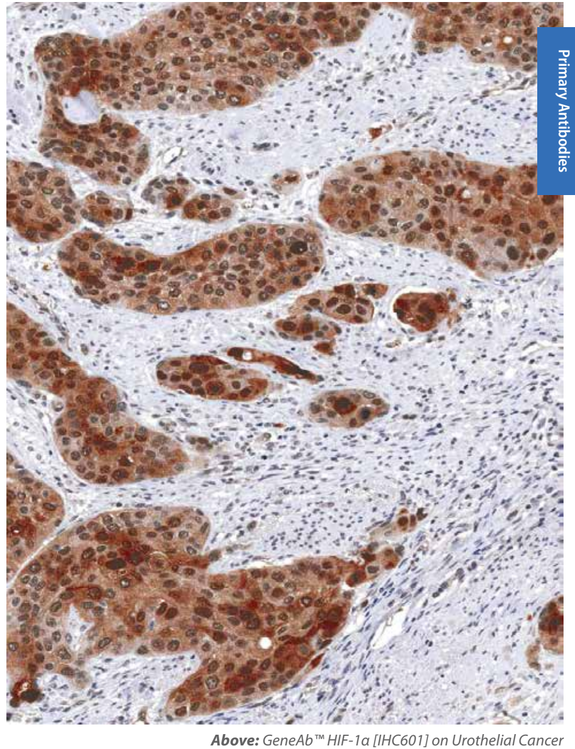
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC601-100	$125
1 ml, Concentrate	IHC601-1	$480
7 ml, Predilute	IHC601-7	$245
3 Positive Control Slides	IHC601-PC	$130

Designations

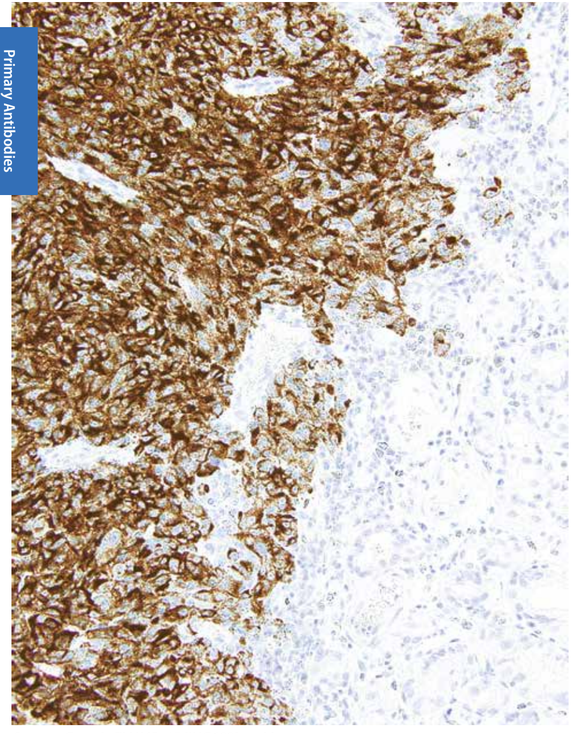
IVD: RUO:



Above: *GeneAb™ HIF-1α [IHC601] on Urothelial Cancer*

HMB-45

Clone: IHC602 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma



Above: *GeneAb™ HMB-45 [IHC602] on Melanoma*

Description

HMB-45 is specific for an antigen present in immature melanosomes, cutaneous melanocytes, and prenatal and infantile retinal pigment epithelium cells. It is therefore effective for identifying malignant melanoma, and differentiating metastatic amelanotic melanoma from a number of conditions where the discrimination is often extremely difficult, including large cell lymphomas, sarcomas, spindle cell carcinomas, and various types of mesenchymal neoplasms. This antibody can also differentiate between junctional nevus and intradermal nevus cells, and between fetal or neonatal melanocytes and normal adult melanocytes.

References

1. Gown AM, et al. Am J Pathol. 1986; 123:195-203. 2. Wick MR, et al. Arch Pathol Lab Med. 1988; 112:616-20. 3. Leong ASY, et al. Surg Path. 1989; 2:137-45. 4. Blessing K, et al. Histopathology. 1998; 32:139-46. 5. Jungbluth AA, et al. Am J Surg Pathol. 1998; 22:595-602. 6. Beaty MW, et al. Cancer. 1997; 81:57-63. 7. Bonetti F, et al. Amer J Clin Pathol. 1991; 95:454-9. 8. Ordonez NG, et al. Amer J Clin Pathol. 1988; 90:385-90.

Reference Panels

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Dermatopathology.....279

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC602-100	$135
1 ml, Concentrate	IHC602-1	$420
7 ml, Predilute	IHC602-7	$305
3 Positive Control Slides	IHC602-PC	$160

Designations

IVD: RUO:

HPV16

Clone: IHC603 | **Source:** Mouse Monoclonal | **Positive Control:** HPV16-Infected Tissue

Description

HPV16 is one of over 120 different subtypes of human papillomavirus (HPV) that have been identified, with approximately 40 of these subtypes infecting the epithelial lining of the anogenital tract, mouth, and throat. In the majority of cases, HPV infection is asymptomatic and endogenously resolved, without the need for medical intervention. However, infection with any of the 14 "high-risk" types, including HPV16, introduces the risk of developing cervical cancer. Anti-HPV16 can be used as a tool to screen for HPV16 infection, and to monitor the risk of the infection becoming cancerous.

References

1. de Villiers EM, et al. Virology. 2004; 324:17-27. 2. Muñoza N, et al. Vaccine. 2006; 24:S1-10. 3. Doorbar J. J Clin Virol. 2005; 32 Suppl 1: S7-15. 4. McLaughlin-Drubin ME, et al. Virology. 2004; 322:213-9. 5. Gupta S, et al. Virology. 2003; 317:155-64.

Reference Panels

pg.
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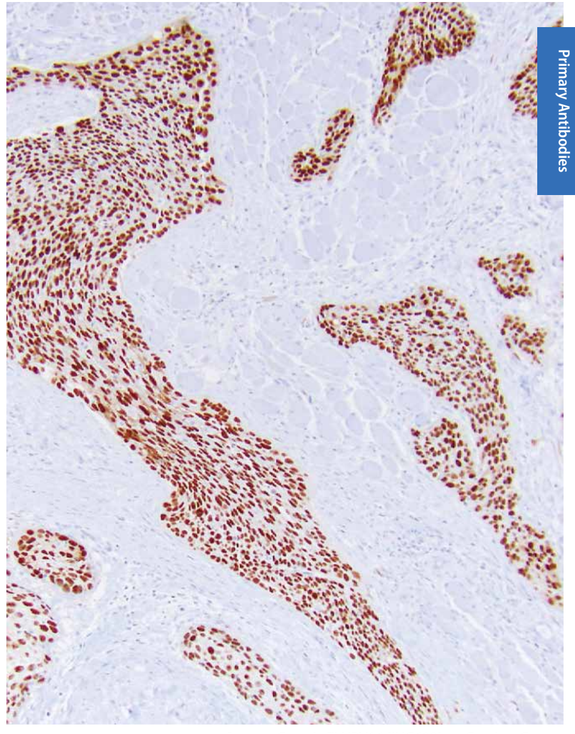
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC603-100	$195
1 ml, Concentrate	IHC603-1	$945
7 ml, Predilute	IHC603-7	$325
3 Positive Control Slides	IHC603-PC	$170

Designations

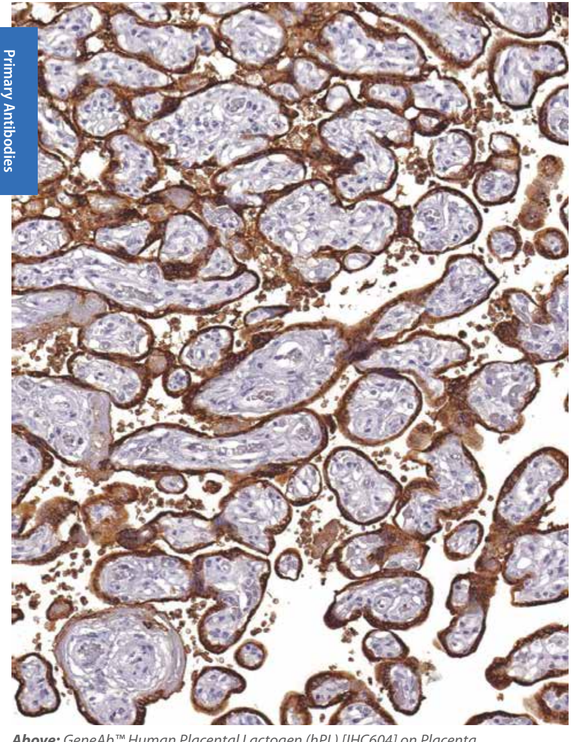
IVD: RUO:



Above: *GeneAb™ HPV16 [IHC603] on Cervical Cancer*

Human Placental Lactogen (hPL)

Clone: IHC604 | **Source:** Mouse Monoclonal | **Positive Control:** Placenta



Above: *GeneAb™ Human Placental Lactogen (hPL) [IHC604] on Placenta*

Description

Human Placental Lactogen, also known as **hPL** or **Human Chorionic Somatomammotropin,** is a placental hormone responsible for regulating the metabolism of the mother during pregnancy to ensure adequate energy supply to the fetus. hPL is clinically indicated in choriocarcinoma, being expressed in the syncytiotrophoblastic cells, and has also been associated with a rare variant of trophoblastic tumours reported in the testis. This rare variant resembled uterine placental site trophoblastic tumours, and consisted entirely of intermediate trophoblasts that were diffusely positive for human placental lactogen.

References

1. Josimovich JB, et al. Endocrinology. 2006; 358:773-84. 2. Shih IM, et al. Am J Surg Pathol. 2004; 28:1177-83. 3. Ulbright TM, et al. Am J Surg Pathol. 1997; 21:282-8.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC604-100	$210
1 ml, Concentrate	IHC604-1	$980
7 ml, Predilute	IHC604-7	$520
3 Positive Control Slides	IHC604-PC	$275

Designations

IVD: RUO:

IDH1 R132H

Clone: IHC132 | **Source:** Mouse Monoclonal | **Positive Control:** Astrocytoma

Description

Isocitrate Dehydrogenase 1 (IDH1) is a soluble, cytosolic enzyme involved in the TCA metabolic cycle. The most notable mutation in this enzyme, R132H, is clinically indicated in the majority of astrocytomas and oligodendroglial tumours, with the mutation being associated with more favourable prognosis and increased survival in those patients. IDH1 R132H is also useful in the differential diagnosis between anaplastic glioma and glioblastoma.

References

1. Cui D, et al. Int J Biochem Cell Biol. 2016;71:72-81. 2. Balss J, et al. Acta Neuropathol. 2008; 116:597-602. 3. Capper D, et al. Brain Pathol. 2010; 20:245-54. 4. Camelo-Piragua S, et al. Acta Neuropathol. 2010; 119:509-11.

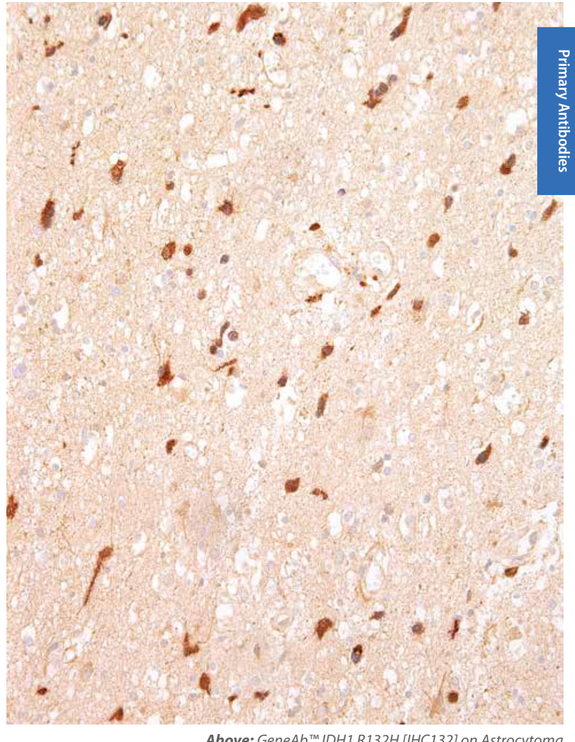
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC132-100	$425
1 ml, Concentrate	IHC132-1	$1,700
7 ml, Predilute	IHC132-7	$980
3 Positive Control Slides	IHC132-PC	$520

Designations

IVD: RUO:

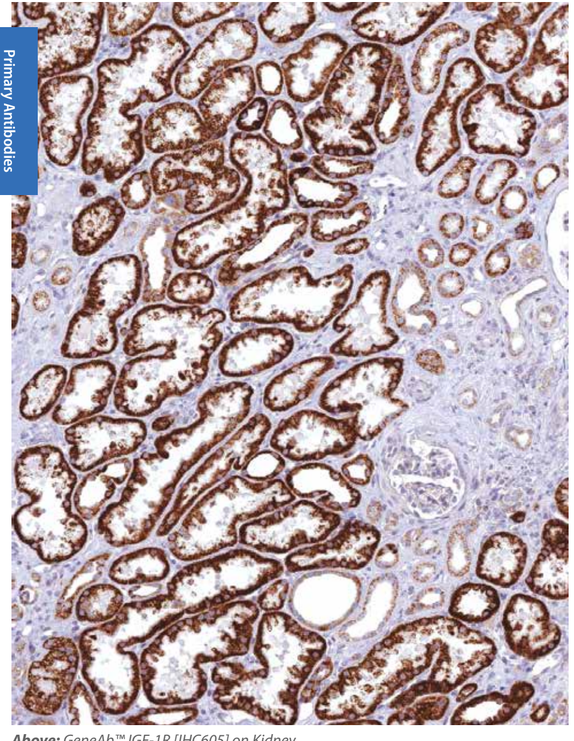


Above: *GeneAb™ IDH1 R132H [IHC132] on Astrocytoma*

GeneAb™

IGF-1R

Clone: IHC605 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Cancer, Breast Cancer, Lung Squamous Cell Carcinoma



Above: *GeneAb™ IGF-1R [IHC605] on Kidney*

Description

The **Insulin-like Growth Factor 1 Receptor,** also known as **IGF-1R** or **IGF1R,** is a transmembrane protein belonging to the tyrosine kinase receptor family. Upon activation by Insulin-like Growth Factor 1 (IGF-1), the receptor enhances cell survival through stimulation of mitosis and inhibition of apoptosis. The IGF-1R is highly overexpressed in malignant tissues, and is clinically implicated in a number of cancers, including those of the breast, prostate, and lung. Studies have shown IGF-1R to be associated with poor prognosis in breast cancer, and, when co-expressed with epidermal growth factor receptor (EGFR), IGF-1R has been linked with shorter disease-free survival in resected non-small-cell lung cancer patients.

References

1. Warshamana-Greene GS, et al. Clin Cancer Res. 2005; 11:1563-71. 2. Jones HE, et al. Endocr Relat Cancer. 2004; 11:793-814. 3. Appleby PN, et al. Lancet Oncol. 2010; 11:530-42. 4. Scartozzi M, et al. Int J Cancer. 2010; 127:1941-7. 5. Ludovini V. Ann Oncol. 2009; 20:842-9. 6. Creighton CJ, et al. J Clin Oncol. 2008; 26:4078-85. 7. Fukuda R, et al. J Biol Chem. 2002; 277:38205-11.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC605-100	$110
1 ml, Concentrate	IHC605-1	$305
7 ml, Predilute	IHC605-7	$230
3 Positive Control Slides	IHC605-PC	$125

Designations

IVD: RUO:

GeneAb™

IMP3

Clone: IHC606 | **Source:** Mouse Monoclonal | **Positive Control:** Pancreatic Ductal Adenocarcinoma, Placenta

Description

Insulin-like Growth Factor 2 mRNA-Binding Protein 3 (IMP3) is a regulator of targets such as insulin-like growth factor-2 and β-actin. The protein is localized mainly in the nucleolus, and plays a critical role in early embryogenesis as it helps mediate the development of the intestine, thymus, pancreas, and kidneys. IMP3 has been reported as a potential aid in the classification of non-small cell lung carcinomas and pancreatic adenocarcinomas, and studies have shown IMP3 to be correlated with increased tumour aggressiveness and reduced overall survival. IMP3 has also been clinically linked to a number of other cancers including adenocarcinomas of the uterine cervix and esophagus, as well as triple negative breast cancer, endometrial and urothelial carcinomas, renal cell and Merkel cell carcinomas, malignant melanoma, and neuroendocrine carcinoma of the lung.

References

1. Nielsen J, et al. Mol Cell Biol. 1999; 19:1262-70. 2. Mueller-Pillasch F, et al. Oncogene. 1997; 14:2729-33. 3. Wang T, et al. Br J Cancer. 2003: 88:887-94. 4. Istvanic S, et al. Mod Pathol. 2005; 18:298A-9A.

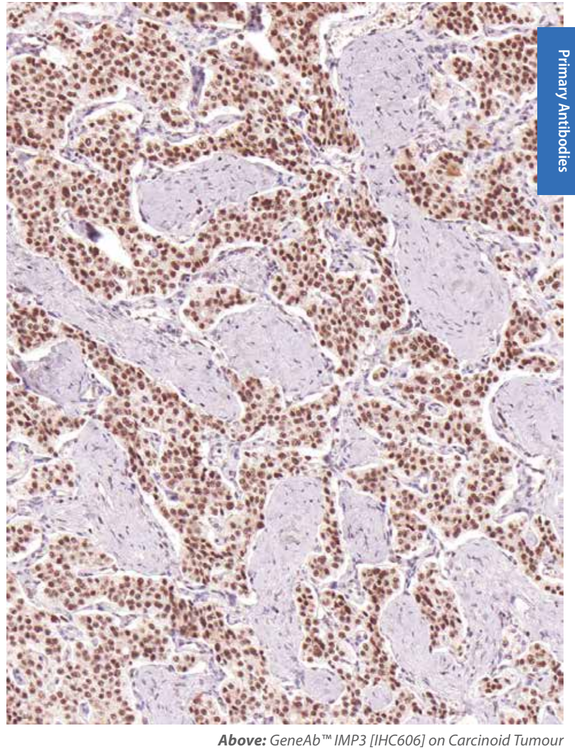
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC606-100	$145
1 ml, Concentrate	IHC606-1	$505
7 ml, Predilute	IHC606-7	$380
3 Positive Control Slides	IHC606-PC	$200

Designations

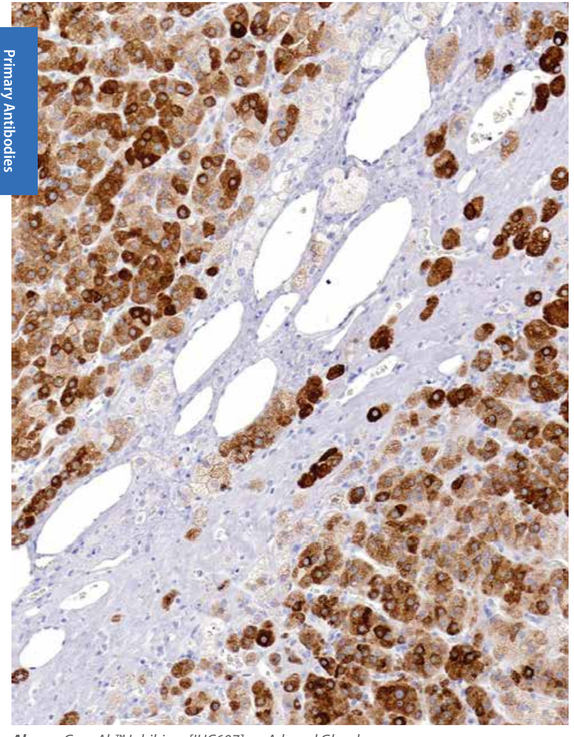
IVD: RUO:



Above: *GeneAb™ IMP3 [IHC606] on Carcinoid Tumour*

Inhibin α

Clone: IHC607 | **Source:** Mouse Monoclonal | **Positive Control:** Adrenal Cortex



Above: *GeneAb™ Inhibin α [IHC607] on Adrenal Gland*

Description

Inhibin α, also known as **INHA,** is a peptide hormone belonging to the transforming growth factor-beta (TGF-β) family. It is produced by ovarian granulosa cells in female follicles and by Sertoli cells in the male seminiferous tubules, with the purpose of inhibiting the release of follicle-stimulating hormone. Inhibin α is also found in the prostate, brain, and adrenal glands. This marker has proven effective in aiding with a number of differential diagnoses, including distinguishing between adrenal cortical tumours and renal cell carcinoma, and between intrauterine and ectopic pregnancy in endometrial curettage. Anti-Inhibin α can also be used to detect for sex cord stromal tumours of the ovary and trophoblastic tumours.

References

1. Kommoss F, et al. Mod Pathol. 1998; 11:656-64. 2. Fetsch PA, et al. Cancer. 1999; 87:168-72. 3. McCluggage WG. Histopathology. 2002; 40:309-26. 4. Arora DS, et al. J Pathol. 1997; 181:413-8. 5. McCluggage WG, et al. Am J Surg Pathol. 1998; 22:615-9. 6. Matias-Guiu X, et al. Hum Pathol. 1998; 29:840-5. 7. Pelkey TJ, et al. Hum Pathol. 1999; 30:26-31. 8. Stewart CJ, et al. Histopathology. 1997; 31:67-74. 9. Yamashita K, et al. Am J Obstet Gynecol. 1997; 177:1450-7.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC607-100	$155
1 ml, Concentrate	IHC607-1	$575
7 ml, Predilute	IHC607-7	$325
3 Positive Control Slides	IHC607-PC	$160

Designations

IVD: RUO:

INI-1

Clone: IHC608 | **Source:** Mouse Monoclonal | **Positive Control:** Brain, Endothelial Cells, Astrocytoma

Description

Integrase Interactor 1 (INI-1), also known as **hSNF5,** is an integral component of the hSWI/SNF (SWItch/Sucrose Non-Fermentable) chromatin remodeling complex, which facilitates DNA-dependent cellular processes including transcription, replication, and repair. The INI-1 gene is often mutated or deleted in malignant rhabdoid tumour (MRT), a tumour that is potentially mimicked by medulloblastoma and supratentorial primitive neuroectodermal tumours (sPNETs). The morphology of MRTs can often present challenges in differential diagnosis, and INI-1 has proven to be useful in distinguishing between the three conditions as the majority of medulloblastomas and sPNETs are labeled by Anti-INI-1, while a lack of nuclear labeling by the same antibody is characteristic of MRT.

References

1. Bourdeaut F, et al. J Pathol. 2007; 211:323-30. 2. Fowler DJ, et al. Fetal Pediatr Pathol. 2006; 25:159-68. 3. Haberler C, et al. Am J Surg Pathol. 2006; 30:1462-8. 4. Hornick JL, et al. Am J Surg Pathol. 2009; 33:542-50. 5. Das S. Curr Protein Pept Sci. 2015; 16:478-90.

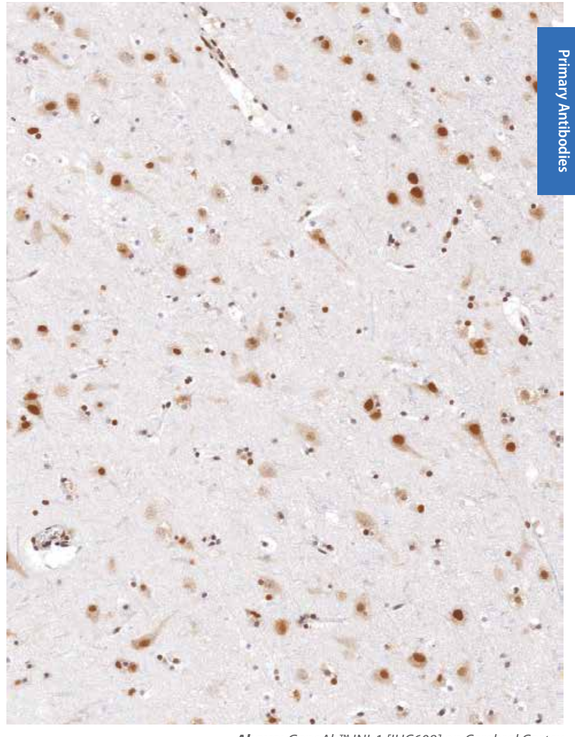
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC608-100	$185
1 ml, Concentrate	IHC608-1	$805
7 ml, Predilute	IHC608-7	$500
3 Positive Control Slides	IHC608-PC	$160

Designations

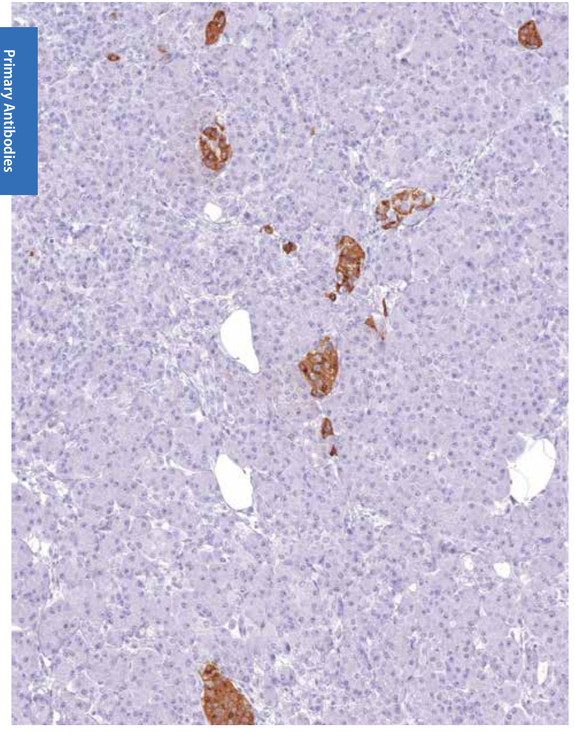
IVD: RUO:



Above: *GeneAb™ INI-1 [IHC608] on Cerebral Cortex*

Insulin

Clone: IHC609 | **Source:** Mouse Monoclonal | **Positive Control:** Pancreas



Above: *GeneAb™ Insulin [IHC609] on Pancreas*

Description

Insulin is a polypeptide hormone produced by the pancreas in the beta cells of the Islets of Langerhans. Its biological functions include regulating the storage and release of glucose, as well as promoting glycogen storage, triglyceride formation, and protein synthesis. Insulin has been clinically indicated in a number of conditions, including tumours of beta cell origin. The presence of insulin in the cytoplasm of islet cell tumours is indicative of functional insulinomas, while a deficiency of insulin results in diabetes mellitus.

References

1. Akagi T, et al. Cancer. 1981; 47:417-24. 2. Scully RE, et al. N Eng J Med. 1983; 308:30-7. 3. Erlandsen SL. Williams and Wilkins Baltimore. 1980: 140-55. 4. Friesen SR. N Eng J Med. 1982; 306:580-90. 5. Jorda M, et al. Arch Pathol Lab Med. 2003; 127:196-9. 6. Letizia C, et al. Eur J Endocrinol. 2001; 144:517-20. 7. Govindarajan M, et al. Diabetes Res Clin Pract. 2001; 51:29-38. 8. Azzoni C, et al. Virchows Arch. 1998; 433:495-504. 9. Lubensky IA, et al. Am J Pathol. 1998; 153:223-31.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC609-100	$100
1 ml, Concentrate	IHC609-1	$340
7 ml, Predilute	IHC609-7	$195
3 Positive Control Slides	IHC609-PC	$100

Designations

IVD: RUO:

Kappa

Clone: IHC610 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Anti-Kappa recognizes surface immunoglobulin on normal and neoplastic B-cells, and has been indicated as a potential aid in the identification of leukemias, plasmacytomas, and certain non-Hodgkin's lymphomas, where the expression of a single light chain class is restricted. The determination of light chain ratio is critical in evaluating B-cell neoplasms, as the majority of B-cell lymphomas express either kappa or lambda light chains, while a mixture of kappa and lambda is characteristic of reactive proliferations. In paraffin-embedded tissue, Anti-Kappa displays strong staining of kappa-positive plasma cells, as well as cells that have absorbed exogenous immunoglobulins.

References

1. Bray M, et al. Am J Clin Pathol. 1983; 80:526-8. 2. Ashton-Key M, et al. Histopathology. 1996; 29:525-31. 3. Kurtin PJ, et al. Am J Clin Pathol. 1999; 112:319-29. 4. Falini B, et al. J Histochem Cytochem. 1982; 30:21-6. 5. Marshall-Taylor CE, et al. Appl Immunohistochem Mol Morphol. 2002; 10:258-62. 6. Sobol RE, et al. Clin Immunol Immunopathol. 1982; 24:139 -44. 7. Samoszuk MK, et al. Diagn Immunol. 1985; 3:133-8. 8. Abbondanzo SL, et al. Ann Diagn Pathol. 1999; 3:318-27.

Reference Panels

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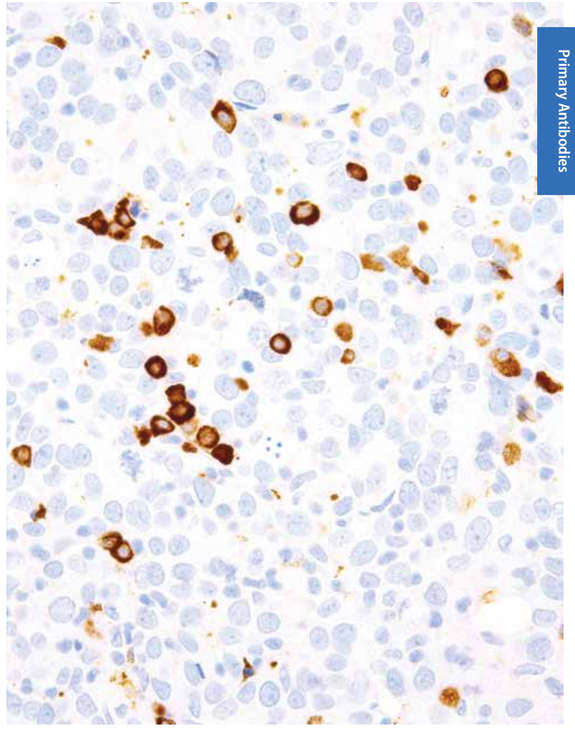
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC610-100	$75
1 ml, Concentrate	IHC610-1	$210
7 ml, Predilute	IHC610-7	$140
25 ml, Predilute	IHC610-25	$600
3 Positive Control Slides	IHC610-PC	$115

Designations

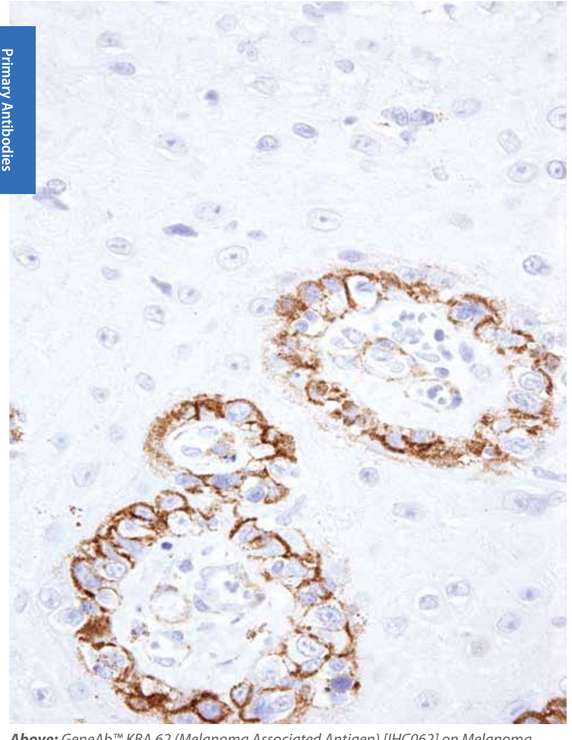
IVD: RUO:



Above: *GeneAb™ Kappa [IHC610] on Ovary*

KBA.62 (Melanoma Associated Antigen)

Clone: IHC062 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma



Above: *GeneAb™ KBA.62 (Melanoma Associated Antigen) [IHC062] on Melanoma*

Description

KBA.62, also known as **Melanoma Associated Antigen,** is used to detect an antigen present in melanocytic tumours, such as melanomas, due to its proven sensitivity and specificity. The antibody can also be used to distinguish between junctional nevus and intradermal nevus cells, and fetal melanocytes versus normal adult melanocytes. Studies have shown KBA.62 to be highly useful in differentiating between metastatic amelanotic melanoma and a number of poorly differentiated carcinomas, large cell lymphomas, sarcomas, and spindle cell carcinomas.

References

1. Kaufmann O, et al. Mod Pathol. 1998; 11:740-6. 2. Gown AM, et al. A J Path. 1986; 123:195. 3. Kocan P, et al. Cesk Patol. 2004; 40:50-6. 4. Pagès C, et al. Hum Pathol. 2008; 39:1136-42. 5. Wick MR, et al. Arch Path Lab. 1988; 112:616-20. 6. Cohen-Knafo E, et al. J Clin Pathol. 1995; 48:826-31. 7. Leong ASY, et al. Surg Path. 1989; 2:137.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC062-100	$150
1 ml, Concentrate	IHC062-1	$545
7 ml, Predilute	IHC062-7	$390
3 Positive Control Slides	IHC062-PC	$160

Designations

IVD: RUO:

Ki-67

Clone: IHC067 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Ki-67 is a nuclear, non-histone protein that is expressed only during active phases of the cell cycle (G1, S, G2 and M), but not in the resting phases (G0 and G1 early phase). Although the antigen has also been associated with ribosomal RNA transcription, it is strongly linked to cell proliferation and has thus been indicated as an effective marker in grading the proliferation rate of tumours, including those of the brain, breast, cervix, and prostate.

References

1. Mckeever P, et al. J Neuropathol Exp Neurol. 1998; 57:931-6. 2. Coons SW, et al. Neurosurgery. 1997; 41:878-84. 3. Allegra CJ, et al. J Clin Oncol. 2003; 21:241-50. 4. Pathmanathan N, et al. J Clin Pathol. 2013; 66:512-6. 5. Jansen R, et al. Br J Cancer. 1998; 78:460-65. 6. Goodson WH, et al. Breast Cancer Res Treat. 1998; 49:155-64. 7. Rossi S, et al. Am J Clin Pathol. 2005; 124:295-302. 8. Pena LL, et al. J Vet Diag Invest. 1998; 10:237-46. 9. Gibbons D, et al. Comparison Mod Pathol. 1997; 10:409-13.

Reference Panels

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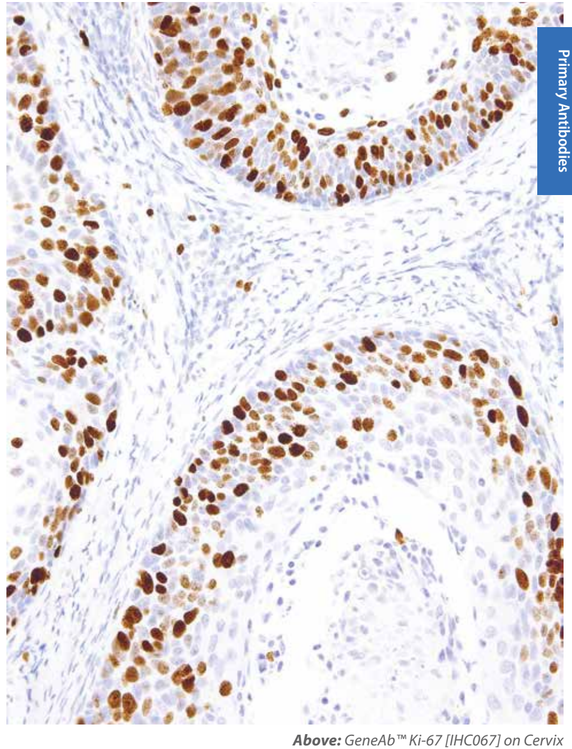
Breast/Gynecological	277
Genitourinary (GU)	284

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC067-100	$190
1 ml, Concentrate	IHC067-1	$855
7 ml, Predilute	IHC067-7	$360
25 ml, Predilute	IHC067-25	$1,285
3 Positive Control Slides	IHC067-PC	$115

Designations

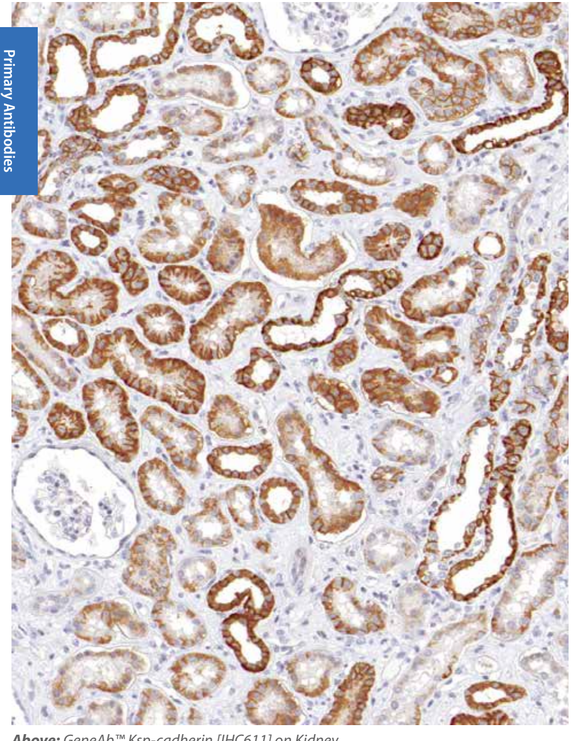
IVD: RUO:



Above: *GeneAb™ Ki-67 [IHC067] on Cervix*

Ksp-cadherin

Clone: IHC611 | **Source:** Mouse Monoclonal | **Positive Control:** Kidney



Above: *GeneAb™ Ksp-cadherin [IHC611] on Kidney*

Description

Ksp-cadherin, also known as **Kidney-Specific Cadherin,** is a cell adhesion molecule that is found exclusively in the basolateral membrane of renal tubular epithelial cells and collecting duct cells of the kidney, but not in glomerulus, renal interstitial cells, or blood vessels. Ksp-cadherin has been identified as a potentially useful marker in differentiating between chromophobe renal cell carcinoma and oncocytoma, as one study has found a membranous pattern of staining in 96% of 30 chromophobe carcinomas, and in only 6% of 31 oncocytomas. Cadherins have also been investigated in renal cell cancers, demonstrating that a loss of cadherins is potentially correlated to tumour differentiation and the presence of lymph node metastasis.

References

1. Mazal PR, et al. Hum Pathol. 2005; 36:22-8. 2. Shen SS, et al. Mod Pathol. 2005; 18:933-40. 3. Thedieck C, et al. Br J Cancer. 2005; 92:2010-7.

Reference Panels

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Genitourinary (GU)..... 284

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC611-100	$150
1 ml, Concentrate	IHC611-1	$490
7 ml, Predilute	IHC611-7	$400
3 Positive Control Slides	IHC611-PC	$160

Designations

IVD: RUO:

Laminin

Clone: IHC612 | **Source:** Mouse Monoclonal | **Positive Control:** Skin

Description

Laminins are a family of glycoproteins that comprise a major portion of the basal lamina of the extracellular matrix. These proteins are fundamental in early embryonic development and organogenesis, and are critical for many physiological functions associated with muscle, nerves, skin, kidney, lung, and the vasculature. Reports have indicated a number of human congenital diseases associated with laminin chain mutations, including congenital muscular dystrophy type 1A, junctional epidermolysis bullosa, cardiomyopathy, and Pierson syndrome.

References

1. Durbeej M. Cell Tissue Res. 2010; 339:259-68. 2. Timpl R, et al. J Biol Chem. 1979; 254:9933-7.

Reference Panels

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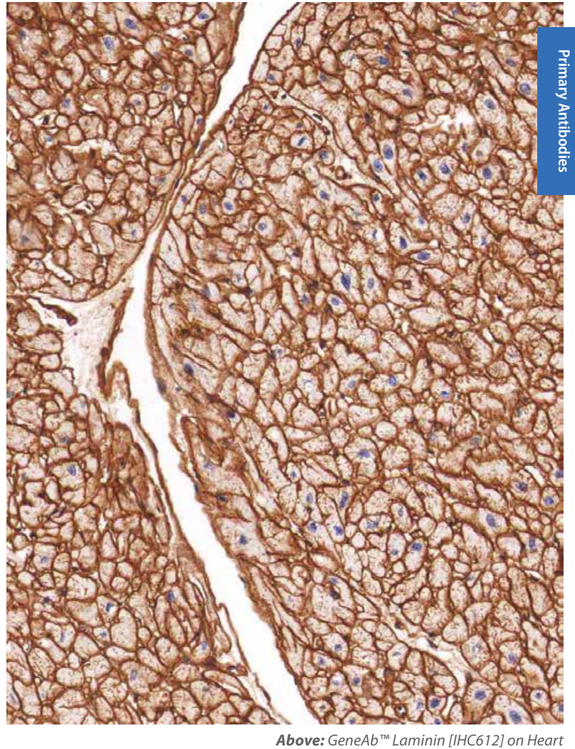
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC612-100	$100
1 ml, Concentrate	IHC612-1	$340
7 ml, Predilute	IHC612-7	$195
3 Positive Control Slides	IHC612-PC	$100

Designations

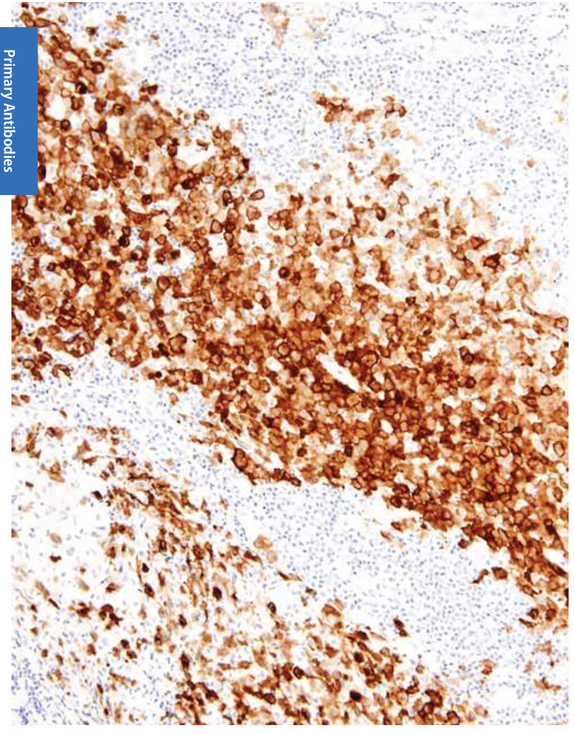
IVD: RUO:



Above: *GeneAb™ Laminin [IHC612] on Heart*

Langerin

Clone: IHC613 | **Source:** Mouse Monoclonal | **Positive Control:** Langerhans Cell Histiocytosis



Above: *GeneAb™ Langerin [IHC613] on Lymph Node*

Description

Langerin is a type II, C-type (Ca^{2+}-dependent) transmembrane lectin that is localized in the Birbeck granules of Langerhans cells. This marker has proven helpful in differentiating Langerhans cell histiocytosis from other non-Langerhans cell histiocytic proliferations; this is because evaluation of langerin expression is valuable in circumstances where a diagnosis of Langerhans cell histiocytosis is suspected, but cannot be confirmed due to lack of CD1a immunoreactivity. Anti-Langerin is also useful as part of a panel of antibodies against CD1a, CD21, CD23, CD35, and S-100 for the distinction of histiocytic sarcoma, interdigitating dendritic cell sarcoma, follicular dendritic cell sarcoma, disseminated juvenile xanthogranuloma, and Rosai-Dorfman disease (sinus histiocytosis with massive lymphadenopathy).

References

1. De Witte L, et al. Nat Med. 2007; 13:367-71. 2. Park L, et al. J Cutan Med Surg. 2012; 1:45-9. 3. Lau SK, et al. Am J Surg Pathol. 2008; 32:615-9. 4. Turville S, et al. J Leukoc Biol. 2003; 74:710-8. 5. Valladeau J, et al. Immunity. 2000; 12:71-81. 6. Valladeau J, et al. J Immunol. 2002; 168:782-92. 7. Demellawy DE, et al. Pathology. 2015; 4:294-301.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC613-100	$145
1 ml, Concentrate	IHC613-1	$700
7 ml, Predilute	IHC613-7	$430
3 Positive Control Slides	IHC613-PC	$205

Designations

IVD: RUO:

LEF-1

Clone: IHC614 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymphocytic Lymphoma

Description

Lymphoid Enhancer-Binding Factor 1 (LEF-1) is a nuclear protein with an important role in lymphopoiesis. It is normally expressed in T-cells and pre-B cells, but not in mature B-cells. LEF-1 plays a crucial role in many human cancers, and its overexpression has been shown to be associated with disease progression and poor prognosis in B-cell chronic lymphocytic leukemia, making it a potentially suitable immunohistochemical marker for diagnosis of this condition. LEF-1 has also been linked to high grade follicular lymphoma and diffuse large B-cell lymphoma, whereas a similar link has not been found in mantle cell lymphoma or marginal zone lymphoma. High levels of LEF-1 have also recently been demonstrated as a favourable prognostic marker in cytogenetically normal acute myeloid leukemia.

References

1. Milatovich A, et al. Genomics. 1992; 11:1040-8. 2. Erdfelder F, et al. Hematol Rep. 2010; 2:e3. 3. Boras-Granic K, et al. Dev Biol. 2006; 295:219-31. 4. Gandhirajan RK, et al. Neoplasia. 2010; 12:326-35. 5. Tandon B, et al. Mod Pathol. 2011; 24:1433-43. 6. Wang SH, et al. BMC Gastroenterol. 2012; 12: 53.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC614-100	$135
1 ml, Concentrate	IHC614-1	$655
7 ml, Predilute	IHC614-7	$400
3 Positive Control Slides	IHC614-PC	$210

Designations

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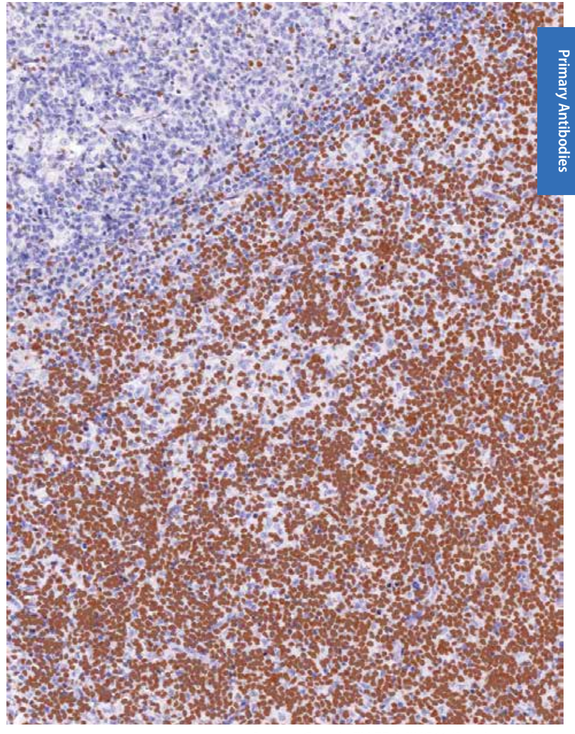
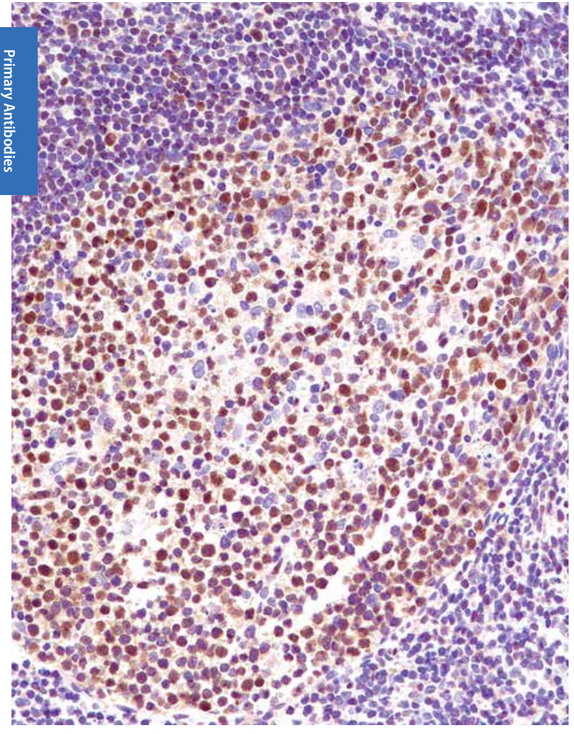


Above: *GeneAb™ LEF-1 [IHC614] on Lymph Node*

LMO2

Clone: IHC615 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Follicular Lymphoma, Diffuse Large B-Cell Lymphoma



Above: *GeneAb™ LMO2 [IHC615] on Tonsil*

Description

LMO2, also known as **LIM-Only Transcription Factor 2, RBTN2,** or **TTG2,** is an oncoprotein that is expressed in normal germinal center B-cells, as well as bone marrow hematopoietic precursors and endothelial cells. LMO2 plays a role in angiogenesis and hematopoesis, and its expression has been detected in erythroid and myeloid precursors, megakaryocytes, and also in lymphoblastic and acute myeloid leukemias. LMO2 protein expression has been noted in diffuse large B-cell lymphoma, the most common adult non-Hodgkin's lymphoma, as well as follicular lymphoma, a neoplasm derived from germinal center B-cells that accounts for a number of cases of non-Hodgkin's lymphomas.

References

1. Fouad-Younes S, et al. Am J Surg Pathol. 2010; 34:1266-76. 2. Natkunam Y, et al. Blood. 2007; 109:1636-42.

Reference Panels

pg.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC615-100	$250
1 ml, Concentrate	IHC615-1	$1,170
7 ml, Predilute	IHC615-7	$530
3 Positive Control Slides	IHC615-PC	$160

Designations

IVD: RUO:

Luteinizing Hormone (LH)

Clone: IHC616 | **Source:** Mouse Monoclonal | **Positive Control:** Pituitary

Description

Luteinizing Hormone (LH) is a reproductive hormone produced and secreted by the gonadotropes in the anterior pituitary gland. LH functions to stimulate ovulation in females and the production of testosterone from the Leydig cells in males. This hormone is useful for the study of pituitary disease, and acts as a clinical marker that is useful for classifying tumours of the pituitary.

References

1. La Rosa S, et al. Virchows Arch. 2000; 437:264-9. 2. Saccomanno K, et al. J Clin Endocrinol Metab. 1994; 78:1103-7. 3. Kovalic JJ, et al. J Neurooncol. 1993; 16:227-32. 4. Felix I, et al. Hum Pathol. 1991; 22:719-21. 5. Sano T, et al. Virchows Arch A Pathol Anat Histopathol. 1990; 417:361-7.

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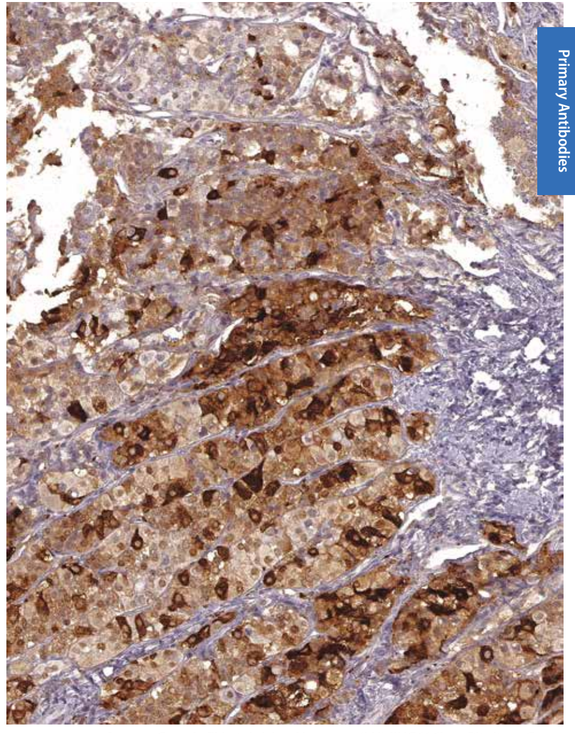
Neuropathology..... 299

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC616-100	$100
1 ml, Concentrate	IHC616-1	$340
7 ml, Predilute	IHC616-7	$195
3 Positive Control Slides	IHC616-PC	$100

Designations

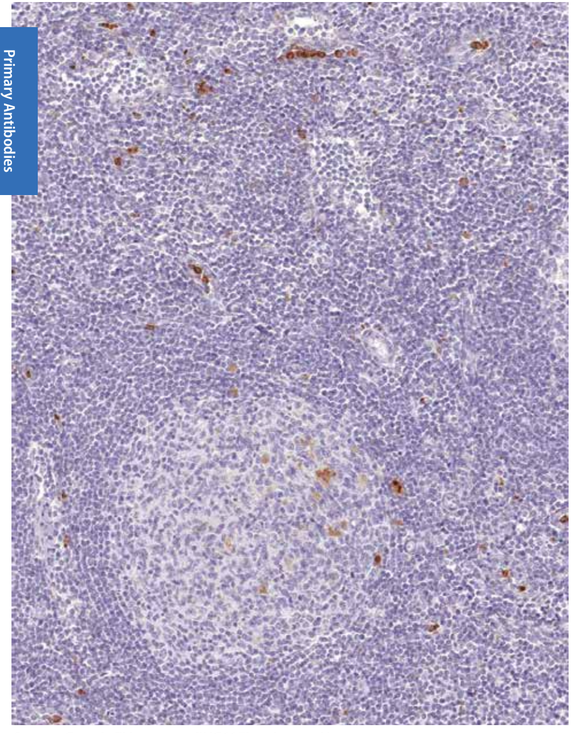
IVD: RUO:



Above: *GeneAb™ Luteinizing Hormone (LH) [IHC616] on Pituitary Gland*

Lysozyme

Clone: IHC617 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ Lysozyme [IHC617] on Lymph Node*

Description

Lysozyme is an enzyme present in and released via many mucosal secretions of the body, including tears and saliva. It functions to kill bacteria by hydrolyzing the polysaccharide component of the bacterial cell wall. Anti-Lysozyme stains myeloid cells, histiocytes, granulocytes, macrophages, and monocytes. The enzyme is clinically useful in demonstrating the myeloid or monocytic nature of acute leukemia, and may also be a suitable aid in the classification of lymphoproliferative disorders, and in the identification of histiocytic neoplasias and large lymphocytes.

References

1. Krugliak L, et al. Am J Hematol. 1986; 21:99-109. 2. Delaflor-Weiss E, et al. Acta Cytol. 1999; 43:1124-30. 3. Morsky P. Clin Chim Acta. 1988; 178:327-36.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC617-100	$120
1 ml, Concentrate	IHC617-1	$430
7 ml, Predilute	IHC617-7	$260
3 Positive Control Slides	IHC617-PC	$115

Designations

IVD: RUO:

Macrophage

Clone: IHC618 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Macrophages are a type of white blood cell present in essentially all tissues, functioning in host defense via phagocytosis and pinocytosis, as well as antigen digestion and presentation to T- and B-lymphocytes. Macrophages are associated with a large proportion of malignant tumours, and have been reported as a promising target for cancer therapies due to their angiogenesis-promoting and trophic roles. Anti-Macrophage, also known as **HAM-56,** detects tingible body macrophages found in the germinal centers of lymph nodes, as well as a subpopulation of endothelial cells, namely those of the capillaries and smaller blood vessels. Anti-Macrophage also reacts with interdigitating macrophages of lymph nodes and tissue macrophages, Kupffer cells of the liver, and alveolar macrophages of the lung.

References

1. Ovchinnikov DA. Genesis. 2008; 46:447-62. 2. Bosman C, et al. J Pediatr Hematol Oncol. 1999; 21:31-7. 3. Gown AM, et al. Am J Pathol. 1986; 125:191-207. 4. Alpers CE, et al. Am J Pathol. 1989; 92:662-5. 5. Soini Y, et al. Pathol Res Pract. 1990; 186:759-67.

Reference Panels

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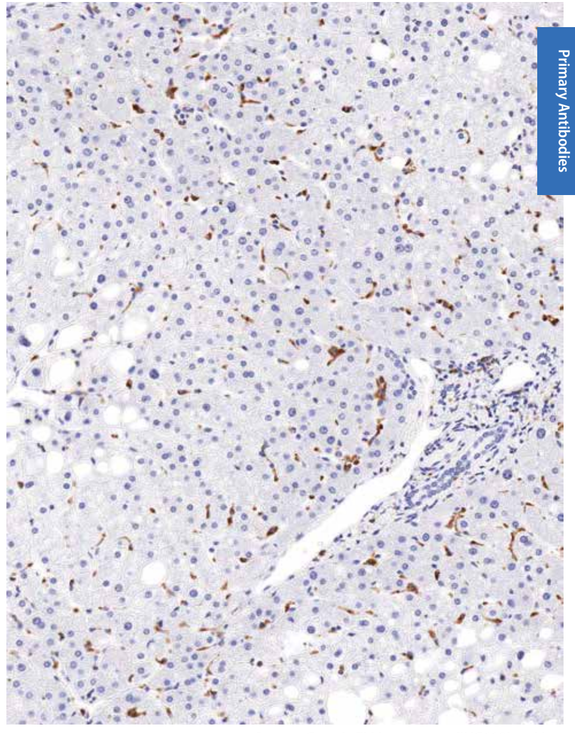
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC618-100	$115
1 ml, Concentrate	IHC618-1	$325
7 ml, Predilute	IHC618-7	$245
3 Positive Control Slides	IHC618-PC	$115

Designations

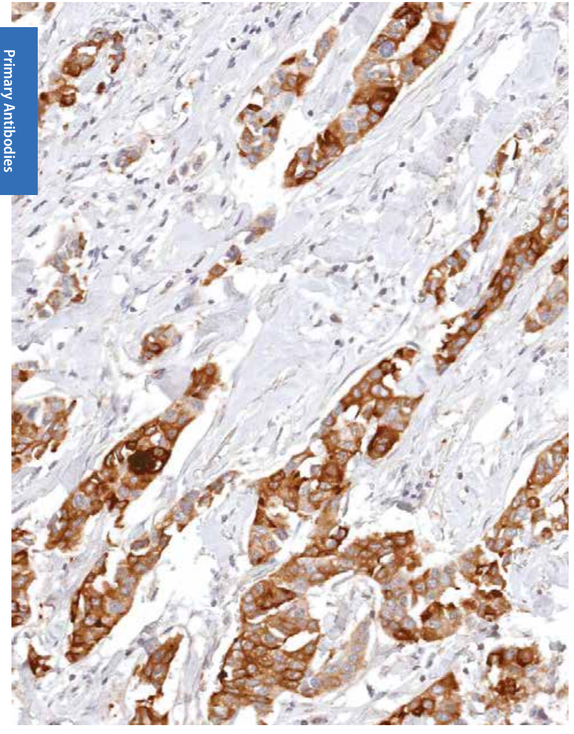
IVD: RUO:



Above: *GeneAb™ Macrophage [IHC618] on Liver*

Mammaglobin

Clone: IHC619 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma



Above: *GeneAb™ Mammaglobin [IHC619] on Breast Cancer*

Description

Mammaglobin is a glycoprotein associated with the human breast, as the gene is expressed solely in the adult mammary gland. A link between the glycoprotein and breast cancer has been reported, as high levels of mammaglobin mRNA are present in human breast cancer cell lines and primary breast cancers. Studies have shown that mammaglobin is a highly specific marker that can aid in determining breast origin in the setting of metastatic carcinoma, as well as correlating with several prognostic factors of breast cancer, including lymph node involvement.

References

1. Han JH, et al. Arch Pathol Lab Med. 2003; 127:1330-4. 2. Watson MA, et al. Cancer Res. 1999; 59:3028-31. 3. Watson MA, et al. Cancer Res. 1999; 59:3028-31. 4. Sjodin A, et al. J Invest Dermatol. 2003; 121:428-9. 5. Sasak E, et al. Mod Pathol. 2007; 20:208-14. 6. Wang Z, et al. Int J Clin Exp Pathol. 2009; 2:384-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC619-100	$125
1 ml, Concentrate	IHC619-1	$540
7 ml, Predilute	IHC619-7	$275
3 Positive Control Slides	IHC619-PC	$115

Designations

IVD: RUO:

MART-1 (Melan A)

Clone: IHC408 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma, Skin

Description

MART-1, also known as **Melan A** or **Melanoma Antigen Recognized by T-Cells 1,** is a protein antigen found specifically on melanocytes of normal skin, retina, and nevi, and not in other normal tissues. Anti-MART-1 is therefore useful as a marker for melanocytic tumours, and as an aid in establishing the diagnosis of metastatic melanomas.

References

1. Kageshita T, et al. J Immunother. 1997; 20:460-5. 2. Blessing K, et al. Histopathology. 1998; 32:139-46. 3. Fetsch PA, et al. Cancer. 1999; 87:37-42. 4. Orosz Z. Histopathology. 1999; 34:517-25. 5. Bergman R, et al. J Am Acad Dermatol. 2000; 42:496-500. 6. Orchard GE. Br J Biomed Sci .1998; 55:8-9.

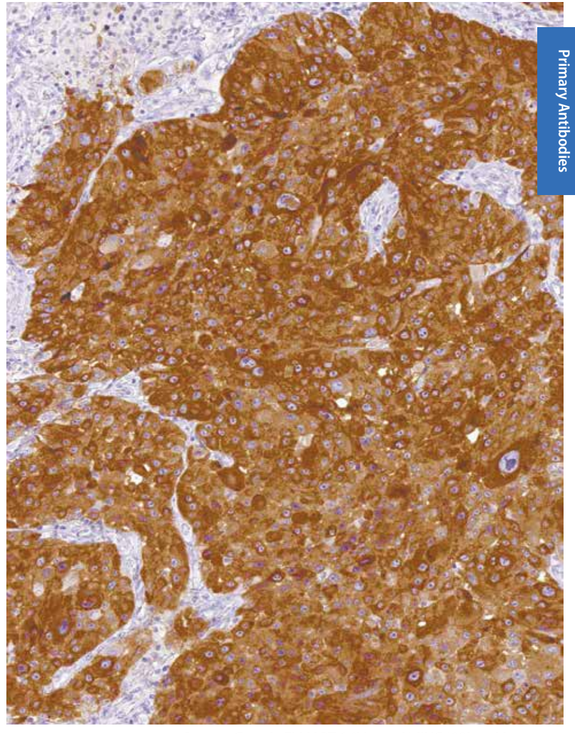
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC408-100	$120
1 ml, Concentrate	IHC408-1	$255
7 ml, Predilute	IHC408-7	$145
25 ml, Predilute	IHC408-25	$935
3 Positive Control Slides	IHC408-PC	$160

Designations

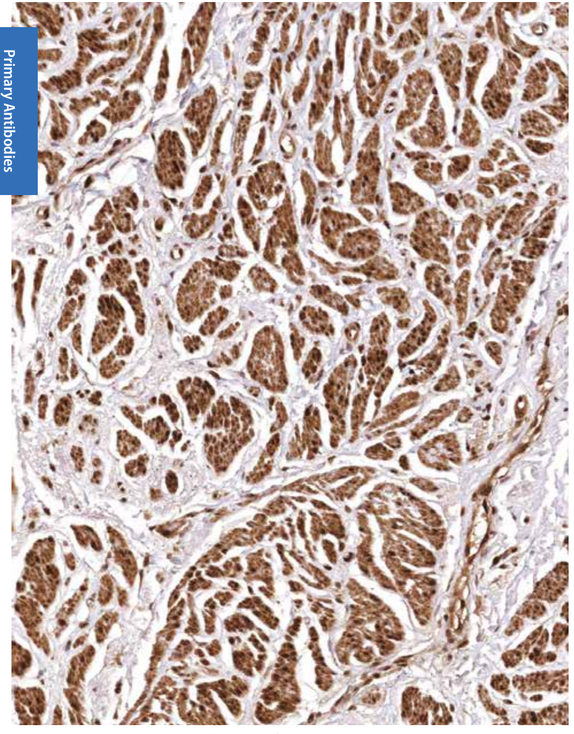
IVD: RUO:



Above: *GeneAb™ MART-1 (Melan A) [IHC408] on Melanoma*

MDM2

Clone: IHC620 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma



Above: *GeneAb™ MDM2 [IHC620] on Soft Tissue*

Description

Mouse Double Minute 2 Homolog (MDM2), also known as **HDM2** in humans, is crucial in negative regulation of the p53 tumour suppressor. Negative regulation is mediated through both the ubiquitination of p53/TP53, as well as inhibition of p53 transcriptional activation. Reports have indicated an overexpression of MDM2 to be associated with a number of different human tumour types, including soft tissue sarcomas, osteosarcomas, and breast tumours. When co-overexpressed with the CDK4 protein, MDM2 can also aid in the detection of well differentiated liposarcomas and dedifferentiated liposarcoma.

References

1. Oliner JD, et al. Nature. 1992; 358:80-3. 2. Wade M, et al. J Biol Chem. 2006; 281:33036-44. 3. Aleixo PB, et al. J Clin Pathol. 2009; 62:1127-35.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC620-100	$105
1 ml, Concentrate	IHC620-1	$395
7 ml, Predilute	IHC620-7	$255
3 Positive Control Slides	IHC620-PC	$135

Designations

IVD: RUO:

MDR3

Clone: IHC621 | **Source:** Mouse Monoclonal | **Positive Control:** Adrenal Cortex

Description

Multidrug Resistance 3 (MDR3), also known as **ATP Binding Cassette Subfamily B Member 4 (ABCB4),** is a membrane-associated protein belonging to the superfamily of ATP-binding cassette transporters. MDR3 is an energy-dependent phospholipid efflux translocator that mediates the translocation of phosphatidylcholine across the canalicular membrane of the hepatocyte, and also acts as a positive regulator of biliary lipid secretion. Defects in MDR3 are associated with progressive familial intrahepatic cholestasis type 3 and gallbladder disease type 1. Co-overexpression of MDR3 and MRP1 has been documented as correlating with blastemal subtype and high-risk prognosis of Wilms' tumour patients.

References

1. Hontecillas-Prieto L, et al. Oncotarget. 2017; 8:11173-86. 2. van Helvoort A, et al. Cell. 1996; 87:507-17. 3. Morita SY, et al. Hepatology. 2007; 46:188-99. 4. Crawford AR, et al. J Clin Invest. 1997; 100:2562-7. 5. de Vree JML, et al. Proc Natl Acad Sci U S A. 1998; 95. 6. Rosmorduc O, et al. Gastroenterology. 2001; 120:1459-67.

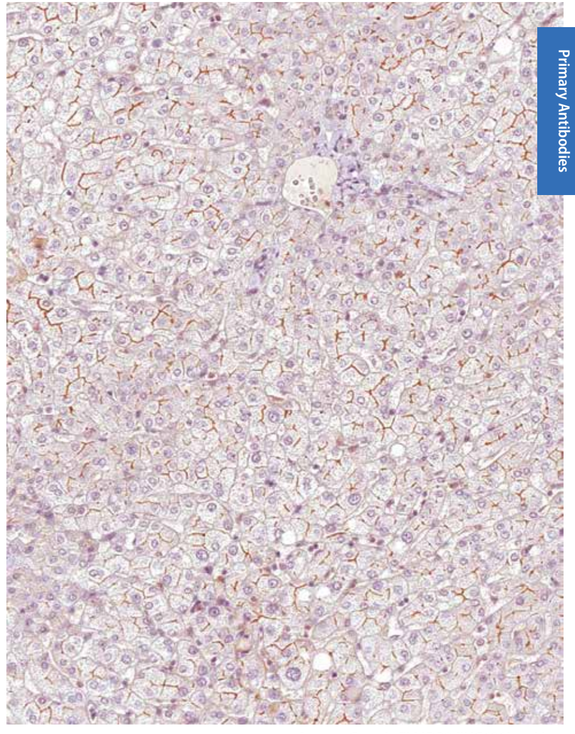
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC621-100	$210
1 ml, Concentrate	IHC621-1	$980
7 ml, Predilute	IHC621-7	$520
3 Positive Control Slides	IHC621-PC	$275

Designations

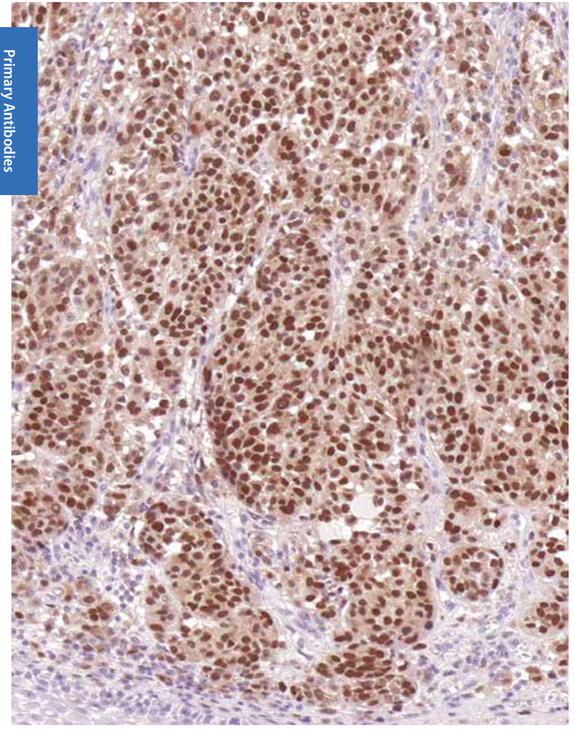
IVD: RUO:



Above: *GeneAb™ MDR3 [IHC621] on Liver*

Microphthalmia Transcription Factor (MiTF)

Clone: IHC622 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma



Above: *GeneAb™ Microphthalmia Transcription Factor (MiTF) [IHC622] on Melanoma*

Description

Microphthalmia-Associated Transcription Factor (MiTF) is a transcription factor involved in the differentiation of a number of cell types including mast cells, osteoclasts, neural crest-derived melanocytes, and optic cup-derived retinal pigment epithelium. Mutations in the MiTF gene are clinically indicated in auditory pigmentary syndromes, including Waardenburg syndrome type II and type IIa, and Tietze syndrome. MiTF has been reported as a highly specific and sensitive marker for malignant melanoma, including some spindle-cell variants, as well as a relatively rare class of tumours known as PEComas, which are tumours showing perivascular epithelioid cell differentiation. Anti-MiTF is also able to recognize serine phosphorylated and non-phosphorylated melanocytic isoforms of microphthalmia.

References

1. Liegl B, et al. Am J Surg Pathol. 2008; 32:608-14. 2. Righi A, et al. Int J Surg Pathol. 2008; 16:16-20. 3. Weinreb I, et al. Virchows Arch. 2007; 450:463-70. 4. Ohsie SJ, et al. J Cutan Pathol. 2008; 35:433-44. 5. Hornick JL, et al. Am J Surg Pathol. 2008; 32:493-501. 6. Sheffield MV, et al. Am J Clin Pathol. 2002; 118:930-6. 7. Dorvault CC, et al. Cancer. 2001; 93:337-43.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC622-100	$120
1 ml, Concentrate	IHC622-1	$490
7 ml, Predilute	IHC622-7	$175
25 ml, Predilute	IHC622-25	$1,065
3 Positive Control Slides	IHC622-PC	$160

Designations

IVD: RUO:

MLH1

Clone: IHC409 | **Source:** Mouse Monoclonal | **Positive Control:** Colon, Colon Carcinoma

Description

MutL Homolog 1 (MLH1) is a protein involved in the mismatch-repair pathway. This protein is commonly associated with hereditary non-polyposis colorectal cancer, as the MLH1 gene is frequently mutated in patients with this cancer. Studies have shown MLH1 to be deficient in a high percentage of patients with microsatellite instability, as well as endometrial and ovarian cancers. Use of Anti-MLH1 is optimized when paired in an IHC panel with MSH6, MSH2, and PMS2. Anti-MLH1 is useful in the detection of MLH1 in a number of normal and neoplastic tissues, and for identifying a loss of MLH1 in tumours that are microsatellite-unstable.

References

1. Pal T, et al. Cancer. 2008; 113:733-42. 2. Wright CL, et al. Am J Surg Pathol. 2003; 27:1393-406. 3. Brueckl WM, et al. Anticancer Res. 2003; 23:1773-8. 4. Rigau V, et al. Arch Pathol Lab Med. 2003; 127:694-700. 5. Renkonen E, et al. J Clin Oncol. 2003; 21:3629-37. 6. Hoedema R, et al. Am Surg. 2003; 69:387-92. 7. Christensen M, et al. Cancer. 2002; 95:2422-30. 8. Wahlberg SS, et al. Cancer Res. 2002; 62:3485-92. 9. Lanza G, et al. Mod Pathol. 2002; 15:741-9.

Reference Panels

	pg.
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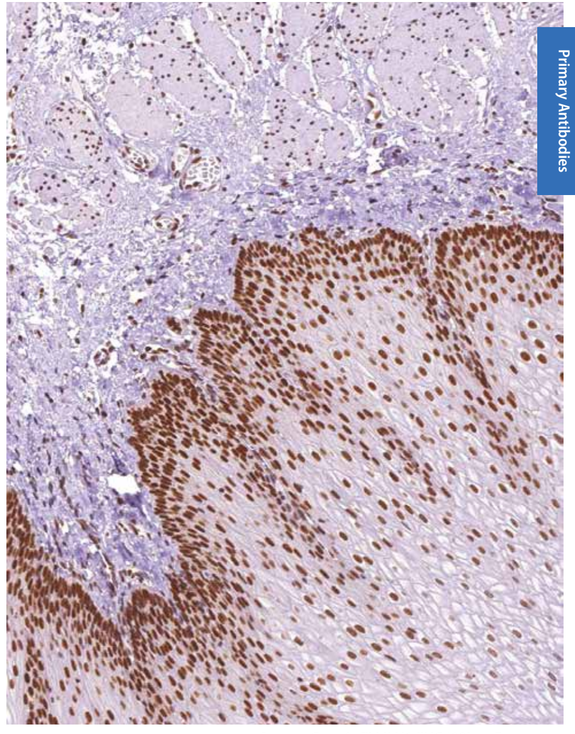
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC409-100	$165
1 ml, Concentrate	IHC409-1	$635
7 ml, Predilute	IHC409-7	$465
25 ml, Predilute	IHC409-25	$1,405
3 Positive Control Slides	IHC409-PC	$160

Designations

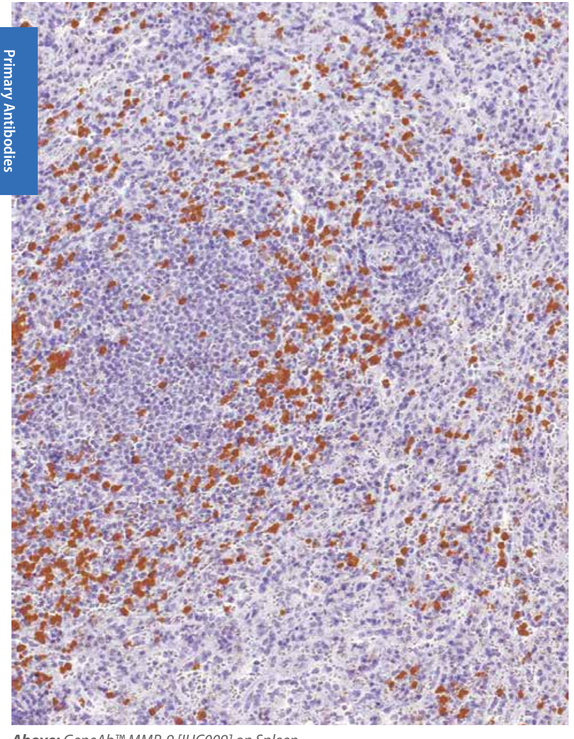
IVD: RUO:



Above: *GeneAb™ MLH1 [IHC409] on Esophagus*

MMP-9

Clone: IHC009 | **Source:** Mouse Monoclonal | **Positive Control:** Breast Carcinoma, Placenta



***Above:** GeneAb™ MMP-9 [IHC009] on Spleen*

Description

Matrix Metalloproteinase-9 (MMP-9), also known as **92-kDa Type IV Collagenase** or **Gelatinase B,** is a member of a family of proteins involved in degradation of the extracellular matrix (ECM). After activation in inflammatory tissues, MMP-9 is produced by neutrophils, macrophages, mast cells, and stromal cells. It has also been reported that the protein may have a crucial role in angiogenesis and neovascularization. As degradation of collagen IV in the basement membrane and ECM promotes tumour progression, including invasion, metastasis, growth, and angiogenesis, MMP-9 is involved in the development of several human malignancies. Overexpression of MMP-9 has been reported in a number of different cancers, including those of the breast and colon, as well as gastric and nasopharyngeal cancers.

References

1. Vandooren J, et al. Crit Rev Biochem Mol Biol. 2013; 48:222-72. 2. Forsyth PA, et al. Br J Cancer. 1999; 79:1828-35. 3. Heissig B, et al. Cell. 2002; 109:625-37. 4. Morini M, et al. Int J Cancer. 2000; 87:336-42. 5. Farina AR, et al. Cancers (Basel). 2014; 6:240-96. 6. Zucker S, et al. Cancer. 1995; 76:700-8. 7. Groblewska M, et al. Folia Histochem Cytobiol. 2012; 50:12-9.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC009-100	$145
1 ml, Concentrate	IHC009-1	$560
7 ml, Predilute	IHC009-7	$315
3 Positive Control Slides	IHC009-PC	$170

Designations

IVD: RUO:

MSH2

Clone: IHC410 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Mucosa, Colon Carcinoma

Description

MutS Homolog 2 (MSH2) is a protein involved in the mismatch-repair pathway. This protein is commonly associated with hereditary non-polyposis colorectal cancer, and mutations in this gene are correlated with the development of sporadic colorectal carcinoma. Expression levels of MSH2 are abnormally low in a high percentage of patients with microsatellite instability, as well as endometrial and ovarian cancers. Use of Anti-MSH2 is optimized when paired in an IHC panel with antibodies against MSH6, MLH1, and PMS2. Reports have shown Anti-MSH2 to be useful in the detection of the protein in a number of normal and neoplastic tissues, and for identifying a loss of MSH2 in tumours that are microsatellite-unstable.

References

1. Pal T, et al. Cancer. 2008; 113:733-42. 2. Brueckl WM, et al. Anticancer Res. 2003; 23:1773-8. 3. Rigau V, et al. Arch Pathol Lab Med. 2003; 127:694-700. 4. Renkonen E, et al. J Clin Oncol. 2003; 21:3629-37. 5. Hoedema R, et al. Am Surg. 2003; 69:387-92. 6. Christensen M, et al. Cancer. 2002; 95:2422-30. 7. Wahlberg SS, et al. Cancer Res. 2002; 62:3485-92. 8. Lanza G, et al. Mod Pathol. 2002; 15:741-9. 9. Thibodeau SN, et al. Cancer Res 1996; 56:4836-40.

Reference Panels

pg.

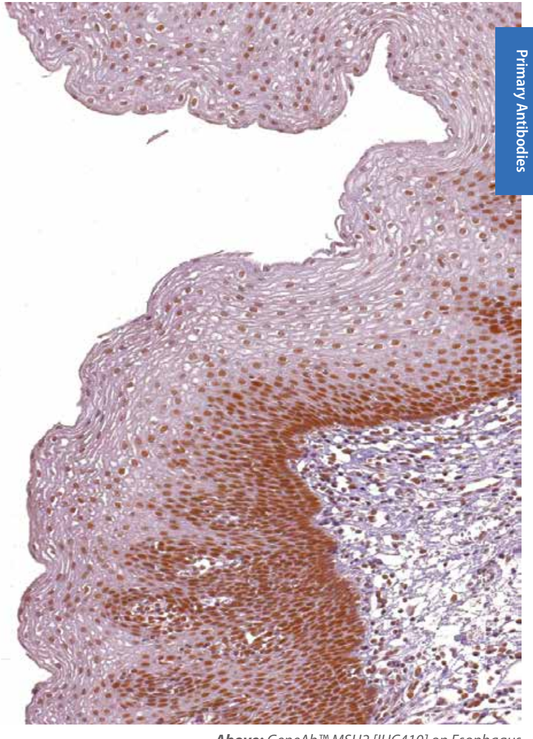
- Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC410-100	$150
1 ml, Concentrate	IHC410-1	$620
7 ml, Predilute	IHC410-7	$305
25 ml, Predilute	IHC410-25	$1,235
3 Positive Control Slides	IHC410-PC	$160

Designations

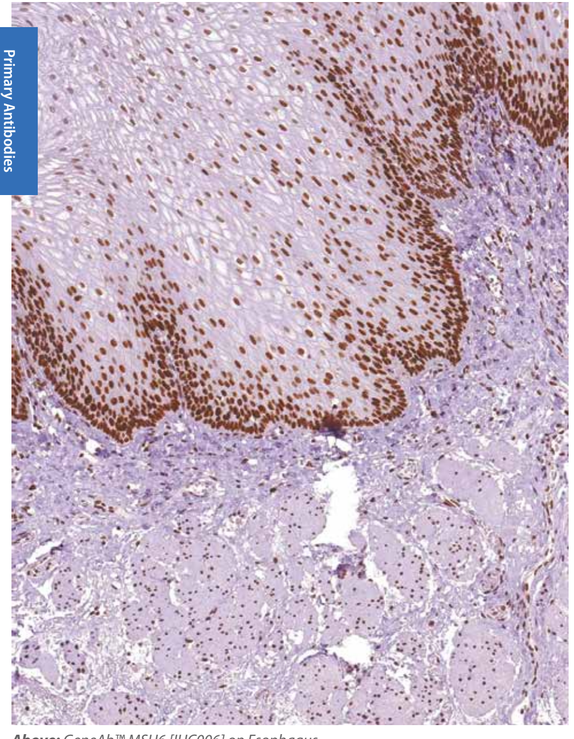
IVD: RUO:



***Above:** GeneAb™ MSH2 [IHC410] on Esophagus*

MSH6

Clone: IHC006 | **Source:** Mouse Monoclonal | **Positive Control:** Colon, Colon Carcinoma



Above: *GeneAb™ MSH6 [IHC006] on Esophagus*

Description

MutS Homolog 6 (MSH6) is a protein involved in the mismatch repair pathway. This protein is commonly associated with hereditary non-polyposis colorectal cancer, and mutations in this gene are correlated with the development of sporadic colorectal carcinoma. Studies have shown that mutations in MSH6, when co-indicated with mutations in MSH1 and MSH2, contribute to the development of sporadic colorectal carcinoma. Use of Anti-MSH2 is optimized when paired with MSH6, MLH1, and PMS2 in an IHC panel.

References

1. Lagerstedt Robinson K, et al. J Natl Cancer Inst. 2007; 99:291-9. 2. Niessen RC, et al. Gut. 2006; 55:1781-8. 3. Hansen TP, et al. Appl Immunohistochem Mol Morphol. 2006; 14:115-21. 4. Lawes DA, et al. Br J Cancer. 2005; 93:472-7. 5. Stormorken AT, et al. J Clin Oncol. 2005; 23:4705-12. 6. Rigau V, et al. Arch Pathol Lab Med. 2003; 127:694-700. 7. Renkonen E, et al. J Clin Oncol. 2003; 21:3629-37.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC006-100	$130
1 ml, Concentrate	IHC006-1	$540
7 ml, Predilute	IHC006-7	$295
25 ml, Predilute	IHC006-25	$1,235
3 Positive Control Slides	IHC006-PC	$160

Designations

IVD: RUO:

MUC1

Clone: IHC623 | **Source:** Mouse Monoclonal | **Positive Control:** Breast, Colon, Associated Adenocarcinomas

Description

Mucin 1 (MUC1) is a membrane-bound glycoprotein involved in a number of protective and cell-signaling functions, including cell-cell adhesion, proliferation, motility, invasion, and survival. Overexpression of MUC1 is clinically indicated in breast carcinomas, papillary thyroid carcinomas, and thymic carcinomas, and reports have named MUC1 as a useful marker for differentiating thymic carcinoma from type B3 thymoma. The expression of MUC1 is correlated with the grade of malignancy in thymic epithelial tumours, and loss of MUC1 expression has been associated with reactive gastropathy. MUC1 is not expressed in normal human epidermis, but it has been detected in the epidermis of psoriatic plaques of biopsies from patients diagnosed with psoriasis vulgaris.

References

1. Arciniegas E, et al. Histol Histopathol. 2015; 30:453-63. 2. Mino-Kenudson M, et al. Arch Pathol Lab Med. 2007; 131:86-90. 3. Zhan XX, et al. Endocr Pathol. 2015; 26:21-6. 4. Renaud F, et al. Thyroid. 2014; 24:1375-84. 5. Kaira K, et al. Virchows Arch. 2011; 458:615-20. 6. Hu XF, et al. Expert Rev Anticancer Ther. 2006; 6:1261-71. 7. Leroy X, et al. Ann Pathol. 2007; 26:257-66.

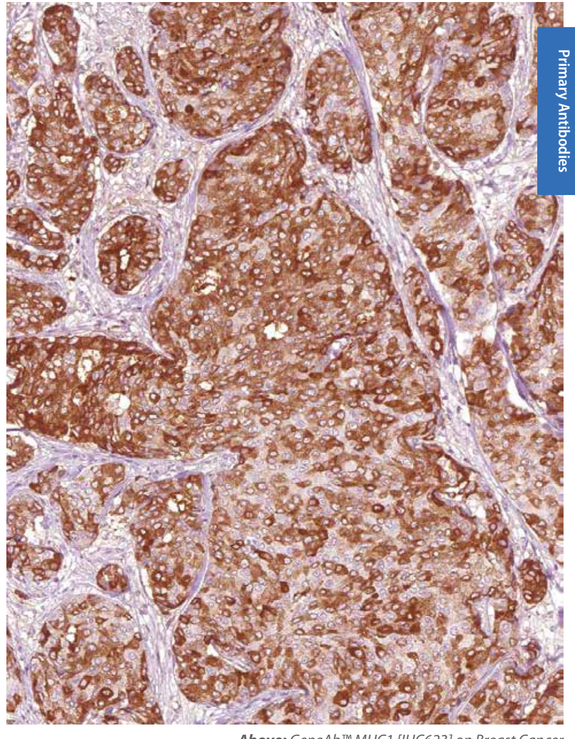
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC623-100	$130
1 ml, Concentrate	IHC623-1	$500
7 ml, Predilute	IHC623-7	$325
25 ml, Predilute	IHC623-25	$1,250
3 Positive Control Slides	IHC623-PC	$115

Designations

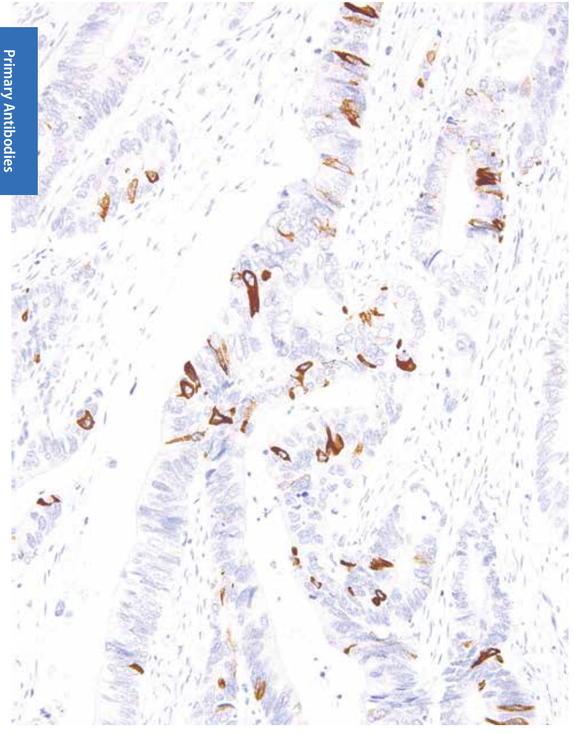
IVD: RUO:



Above: *GeneAb™ MUC1 [IHC623] on Breast Cancer*

MUC2

Clone: IHC624 | **Source:** Mouse Monoclonal | **Positive Control:** Colon



Above: *GeneAb™ MUC2 [IHC624] on Colon*

Description

Mucin 2 (MUC2) is an intestinal glycoprotein that functions to protect the gut lumen by forming an insoluble mucous barrier. Anti-MUC2 stains the colon, breast, and prostate, and the MUC2 IVD antibody is used clinically in gastrointestinal, colonic, breast, and prostate neoplasia. This diagnostic grade MUC2 antibody detects goblet cells of the colon and colonic carcinomas, normal and neoplastic breast tissues, and prostate adenocarcinoma.

References

1. Allen A, et al. Int J Biochem Cell Biol. 1998; 30:797-801. 2. Byrd JC, et al. Cancer Metastasis Rev. 2004; 23:77-99. 3. Leteurtre E, et al. World J Gastroenterol. 2006; 12:3324-31. 4. Rakha EA, et al. Mod Pathol. 2005; 18:1295-304.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC624-100	$130
1 ml, Concentrate	IHC624-1	$520
7 ml, Predilute	IHC624-7	$325
3 Positive Control Slides	IHC624-PC	$115

Designations

IVD: RUO:

MUC5AC

Clone: IHC625 | **Source:** Mouse Monoclonal | **Positive Control:** Stomach

Description

Mucin 5AC (MUC5AC) is a secretory-type mucin found in columnar mucous cells of surface gastric epithelium and in goblet cells of the fetal and precancerous colon, but not in normal colon cells. MUC5AC expression is indicated in carcinomas wherein the type is defined as diffuse and infiltrative, and those located mainly in the antrum. Studies have also suggested a correlation between MUC5AC and colorectal signet ring cell carcinoma, with overexpression of MUC5AC relating to the carcinogenesis, malignant potential, progression, and clinical behaviors.

References

1. Fetsch PA, et al. Cancer. 1998; 84:101-8. 2. Ichihara T, et al. Cancer. 1988; 61:324-33. 3. Soslow RA, et al. Int J Gynecol Pathol. 1996; 15:257-65. 4. Charpin C, et al. Int J Gynecol Pathol. 1982; 1:231-45. 5. Reis CA, et al. Int J Cancer. 1997; 74:112-21. 6. Kim GE, et al. Gastroenterology. 2002; 123:1052-60. 7. Chaves P, et al. Dis Esophagus. 2005; 18:383-7. 8. Leteurtre E, et al. World J Gastroenterol. 2006; 12:3324-31. 9. Mino-Kenudson M, et al. Arch Pathol Lab Med. 2007; 131:86-90. 10. Mizoshita T, et al. Histol Histopathol. 2007; 22:251-60. 11. O'Connell FP, et al. Arch Pathol Lab Med. 2005; 129:338-47. 12. Park SY, et al. Arch Pathol Lab Med. 2007; 131:1561-7. 13. Rakha EA, et al. Mod Pathol. 2005; 18:1295-304.

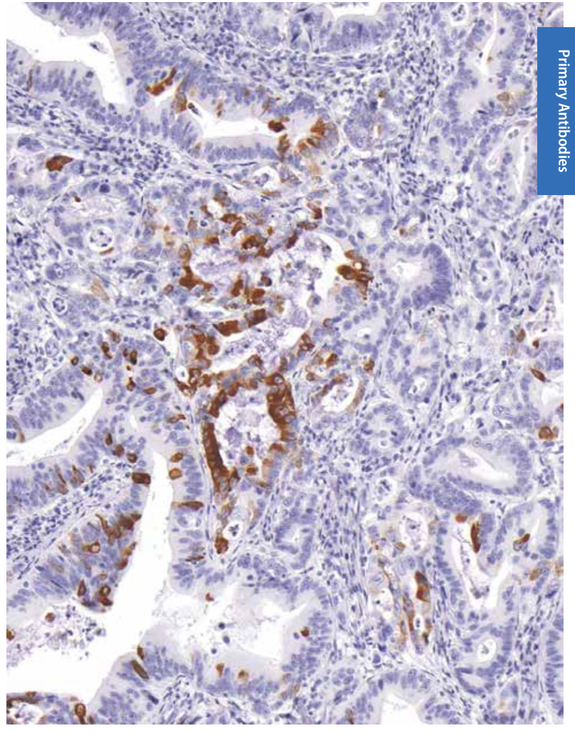
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC625-100	$110
1 ml, Concentrate	IHC625-1	$405
7 ml, Predilute	IHC625-7	$260
3 Positive Control Slides	IHC625-PC	$115

Designations

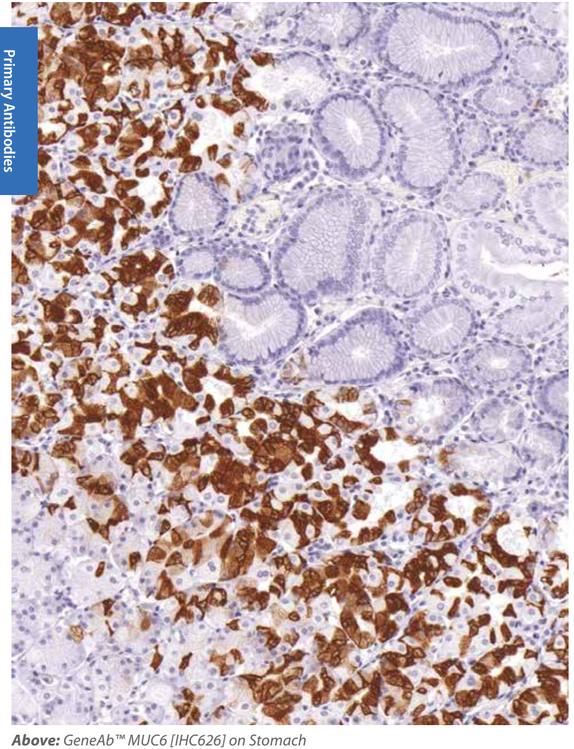
IVD: RUO:



Above: *GeneAb™ MUC5AC [IHC625] on Stomach Cancer*

MUC6

Clone: IHC626 | **Source:** Mouse Monoclonal | **Positive Control:** Stomach



Above: *GeneAb™ MUC6 [IHC626] on Stomach*

Description

Mucin 6 (MUC6) is a glycoprotein expressed in mucous neck cells, pyloric glands of the antrum, epigastric and bronchial epithelium, and in Müller ducts of the endocervix and urethral epithelium. Anti-MUC6 is useful for differentiating fetal, precancerous, and cancerous colonic mucosa from normal colon, as the antibody does not stain the latter. Anti-MUC6 stains the gastric epithelial surface of normal human gastrointestinal tracts.

References

1. Bartman AE, et al. J Pathol. 1999; 186:398-405. 2. Reis CA, et al. J Histochem Cytochem. 2000; 48:377-88. 3. Kim GE, et al. Gastroenterology. 2002; 123:1052-60. 4. Leteurtre E, et al. World J Gastroenterol. 2006; 12:3324-31. 5. Mino-Kenudson M, et al. Arch Pathol Lab Med. 2007; 131:86-90. 6. Mizoshita T, et al. Histol Histopathol. 2007; 22:251-60. 7. O'Connell FP, et al. Arch Pathol Lab Med. 2005; 129:338-47. 8. Park SY, et al. Arch Pathol Lab Med. 2007; 131:1561-7. 9. Rakha EA, et al. Mod Pathol. 2005; 18:1295-304. 10. Chaves P, et al. Dis Esophagus. 2005; 18:383-7.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC626-100	$110
1 ml, Concentrate	IHC626-1	$410
7 ml, Predilute	IHC626-7	$260
3 Positive Control Slides	IHC626-PC	$115

Designations

IVD: RUO:

MUM1

Clone: IHC627 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Diffuse Large B-Cell Lymphoma, Plasmacytoma

Description

Multiple Myeloma Oncogene-1 (MUM1), also known as **Interferon Regulatory Factor 4 (IRF4),** is a transcription factor present in a variety of hematolymphoid neoplasms and in malignant melanoma, but is absent from other human tumours. MUM1 expression has been indicated in both pediatric and adult diffuse large B-cell lymphoma (DLBCL), and, when the immunostaining status of CD10 and Bcl6 is also considered, Anti-MUM1 can be used to sub-distinguish germinal center type DLBCL from the non-germinal center type. Anti-MUM1 stains normal melanocytes, melanocytic nevi, and malignant melanoma in non-hematopoietic tissues, and can also stain other B-cell lymphomas such as lymphoplasmacytic lymphoma, grade 3 follicular lymphoma, primary central nervous system lymphoma, primary mediastinal large B-cell lymphoma, Burkitt-like lymphoma, and classic Hodgkin's lymphoma.

References

1. Alizadeh AA, et al. Nature. 2000; 403:403503-11. 2. Iida S, et al. Nat Genet. 1997; 17:226-30. 3. Falini B, et al. Blood. 2000; 95:2084-92. 4. Grossman A, et al. Genomics. 1996; 37:229-33. 5. Neresh KN. Haematologica. 2007; 92:267-8.

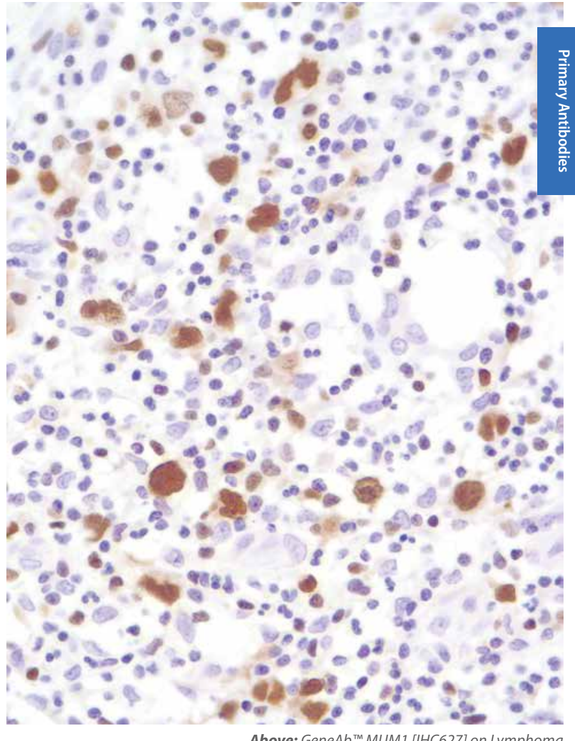
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC627-100	$160
1 ml, Concentrate	IHC627-1	$850
7 ml, Predilute	IHC627-7	$325
3 Positive Control Slides	IHC627-PC	$160

Designations

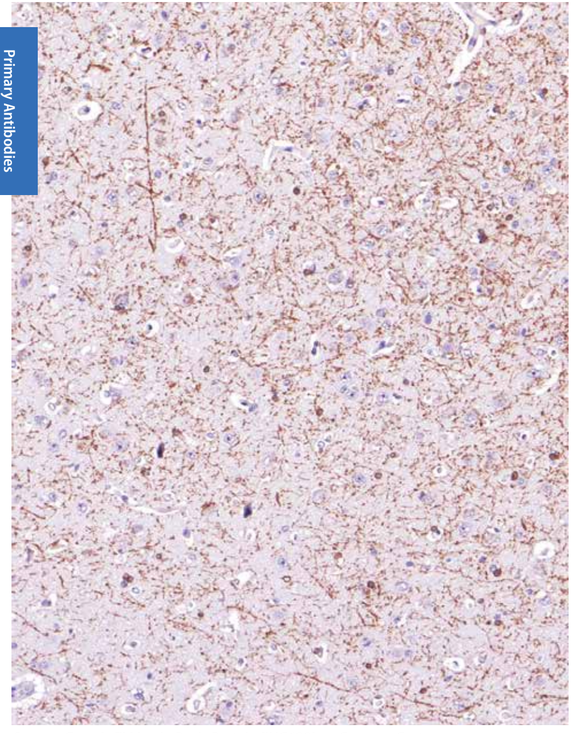
IVD: RUO:



Above: *GeneAb™ MUM1 [IHC627] on Lymphoma*

Myelin Basic Protein

Clone: IHC628 | **Source:** Mouse Monoclonal | **Positive Control:** Brain



Above: *GeneAb™ Myelin Basic Protein [IHC628] on Cerebral Cortex*

Description

Myelin Basic Protein (MBP) is associated with myelination of nerves in the central and peripheral nervous systems (CNS and PNS, respectively). Myelin basic protein has been clinically indicated in neuromas, neurofibromas, and neurogenic sarcomas, while other spindle-cell neoplasms do not stain with Anti-MBP. MBP is unique from GFAP, S-100, and other nervous system proteins, as it has not been detected in melanocytes or melanocyte-derived tumours.

References

1. Penneys NS, et al. Arch Pathol Lab Med. 1983; 107:302-3. 2. Mogollon R, et al. Cancer. 1984; 53:1190-3. 3. Martenson RE, et al. J Neurochem. 1981; 36:1543-60. 4. Uyemura K, et al. Adv Exp Med Biol. 1977; 100:95-11. 5. Buss A, et al. Brain. 2004; 127:34-44. 6. Neuen-Jacob E, et al. Int J Legal Med. 1993; 105:339-50.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC628-100	$210
1 ml, Concentrate	IHC628-1	$980
7 ml, Predilute	IHC628-7	$520
3 Positive Control Slides	IHC628-PC	$275

Designations

IVD: RUO:

Myeloperoxidase

Clone: IHC629 | **Source:** Mouse Monoclonal | **Positive Control:** Bone Marrow

Description

Myeloperoxidase (MPO) is a peroxidase enzyme found most amply in neutrophil granulocytes. Myeloperoxidase is readily detectable in myeloblasts and immature myeloid cells of acute myelogenous leukemia, myeloblastomas, monomyelocytic leukemia, progranulocytic leukemia, erythroleukemia, and other hematopoietic disorders. Anti-Myeloperoxidase has been utilized for immunophenotyping acute lymphoblastic leukemia in bone marrow biopsies, as part of a panel of antibodies. Anti-Myeloperoxidase staining is also used to aid in the diagnosis of extramedullary leukemia or chloroma.

References

1. Toth B, et al. J Clin Pathol. 1999; 52:688-92. 2. Pinkus GS, et al. Mod Pathol. 1991; 4:733-41. 3. Heinecke JW, et al. J Clin Invest. 1993; 91:2866-72. 4. Brennan ML, et al. N Engl J Med. 2003; 349:1595-604. 5. Hudock J, et al. Am J Clin Pathol. 1994; 102:55-60. 6. Hamoudi WH, et al. Arch Pathol Lab Med. 2000; 124:315-8. 7. Arber DA, et al. Am J Clin Pathol. 1996; 106:462-8. 8. Chang CC, et al. Am J Clin Pathol. 2000; 114:807-11. 9. Kaleem Z, et al. Am J Clin Pathol. 2001; 115:876-84. 10. Audouin J, et al. Int J Surg Pathol. 2003; 11:271-82. 11. Kojima M, et al. APMIS. 2003; 111:1133-6.

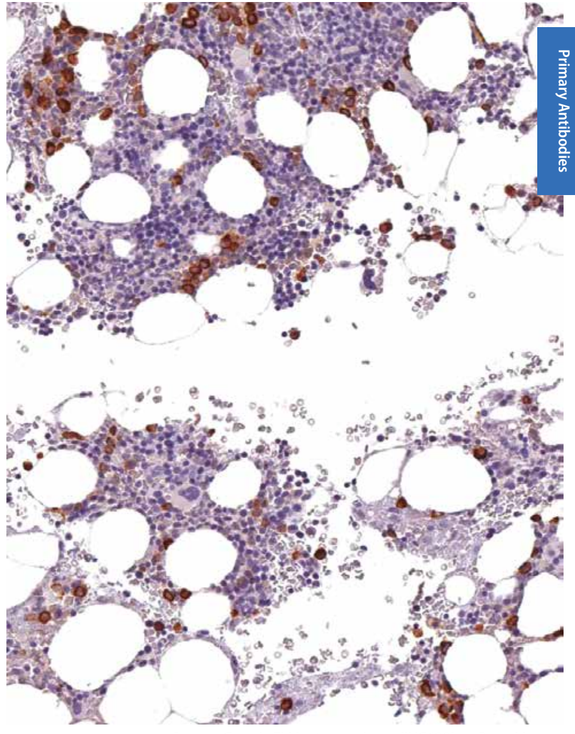
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC629-100	$240
1 ml, Concentrate	IHC629-1	$1,165
7 ml, Predilute	IHC629-7	$210
3 Positive Control Slides	IHC629-PC	$160

Designations

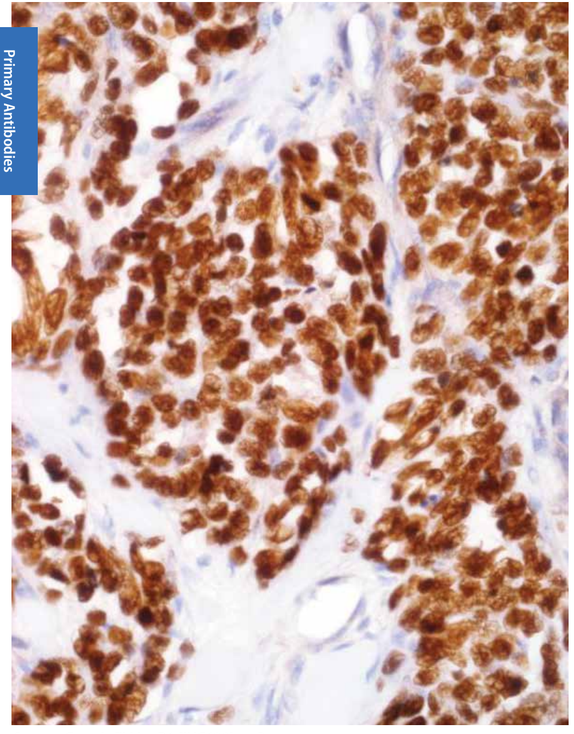
IVD: RUO:



Above: *GeneAb™ Myeloperoxidase [IHC629] on Bone Marrow*

MyoD1

Clone: IHC630 | **Source:** Mouse Monoclonal | **Positive Control:** Rhabdomyosarcoma



Above: *GeneAb™ MyoD1 [IHC630] on Rhabdomyosarcoma*

Description

Myogenic Differentiation 1 (MyoD1) belongs to a family of myogenic helix-loop-helix transcription factors, and, when combined with myogenin, plays a key role in the myogenic or muscle differentiation pathway. MyoD1 is expressed in myoblasts and in activated satellite cells, but not in normal mature skeletal muscle or in quiescent satellite cells; Anti-MyoD1 is therefore used to identify cells that are committed to myogenesis. Anti-MyoD1 is also utilized as a biomarker for rhabdomyosarcomas, a malignant soft tissue neoplasm, often as part of a panel also including Anti-Myogenin and Anti-Desmin.

References

1. Sebire NJ, et al. J Clin Pathol. 2003; 56:412-6. 2. Tallini G, et al. Am J Pathol. 1994; 144:693-701. 3. Morotti RA, et al. Am J Surg Pathol. 2006; 30:962-8.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC630-100	$180
1 ml, Concentrate	IHC630-1	$685
7 ml, Predilute	IHC630-7	$485
3 Positive Control Slides	IHC630-PC	$260

Designations

IVD: RUO:

Myogenin

Clone: IHC631 | **Source:** Mouse Monoclonal | **Positive Control:** Rhabdomyosarcoma

Description

Myogenin belongs to a family of myogenic transcription factors, including MyoD, Myf5, and MRF4, which are critical in muscle development. Myogenin is found strictly in cells of skeletal muscle origin, and is therefore used as a biomarker for tumours of the muscle lineage, including alveolar rhabdomyosarcomas. Anti-Myogenin staining may occur in Wilms' tumour, and it labels the nuclei of myoblasts in developing muscle tissue. It is also expressed in some leiomyosarcomas.

References

1. Zhu BL, et al. Chin Med J (Engl). 1994; 107:36-40. 2. Kock KF, et al. Forensic Sci Int. 1994; 65:113-9. 3. Horike K, et al. Jpn Circ J. 1991; 55:24-32. 4. Leader M, et al. Br J Cancer. 1989; 59:106-9. 5. Miller JB. J Cell Biol. 1990; 111:1149-59. 6. Wang NP, et al. Am J Pathol. 1995; 147:1799-810. 7. Cui S, et al. Pathol Int. 1999; 49:62-8. 8. Cessna MH, et al. Am J Surg Pathol. 2001; 25:1150-7. 9. Furlong MA, et al. Mod Pathol. 2001; 14:595-603. 10. Dias P, et al. Am J Pathol. 2000; 156:399-408.

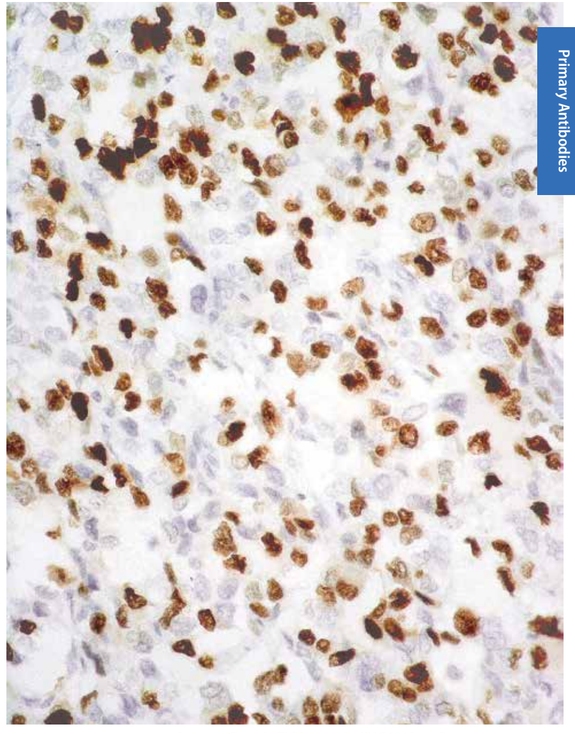
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC631-100	$100
1 ml, Concentrate	IHC631-1	$455
7 ml, Predilute	IHC631-7	$220
3 Positive Control Slides	IHC631-PC	$160

Designations

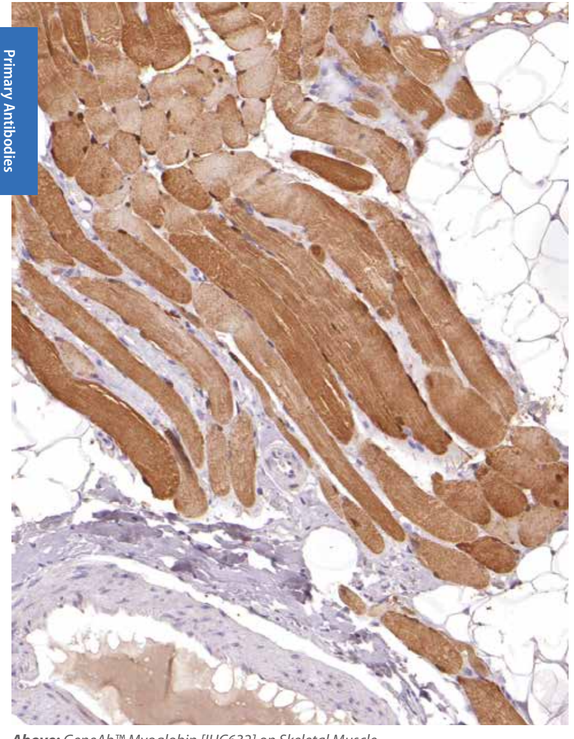
IVD: RUO:



Above: *GeneAb™ Myogenin [IHC631] on Rhabdomysarcoma*

Myoglobin

Clone: IHC632 | **Source:** Mouse Monoclonal | **Positive Control:** Skeletal Muscle



Above: *GeneAb™ Myoglobin [IHC632] on Skeletal Muscle*

Description

Myoglobin is a globular protein that functions as the primary oxygen carrier of muscle tissues. It is found solely in skeletal and cardiac muscle, and therefore it may be used to differentiate rhabdomyosarcoma from other soft tissue tumours. Anti-Myoglobin is also utilized to establish rhabdomyoblastic differentiation in other tumours, such as neurogenic sarcomas and malignant mixed mesodermal tumours of the uterus and ovary.

References

1. Furlong MA, et al. Ann Diagn Pathol. 2001; 5:199-206. 2. Furlong MA, et al. Mod Pathol. 2001; 14:595-603. 3. Corson JM, et al. Am J Pathol. 1981; 103:384-9. 4. Kindblom LG, et al. Acta Pathol Microbiol Immunol Scand A. 1982; 90:167-74. 5. Brooks JJ, Cancer. 1982; 50:1757-63. 6. Kahn HJ, et al. Cancer. 1983; 50:1897-903. 7. Mukai K, et al. Am J Surg Pathol. 1979; 3:373-6.

Reference Panels

	pg.
Soft Tissue	302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC632-100	$100
1 ml, Concentrate	IHC632-1	$340
7 ml, Predilute	IHC632-7	$195
3 Positive Control Slides	IHC632-PC	$100

Designations

IVD: RUO:

Myosin, Smooth Muscle

Clone: IHC633 | **Source:** Mouse Monoclonal | **Positive Control:** Skeletal Muscle

Description

Smooth Muscle Myosin is a critical structural component of the contractile apparatus in smooth muscle cells, and belongs to a large family of motor proteins known as myosins, which function in actin-based motility. Anti-Smooth Muscle Myosin stains human visceral and vascular smooth muscle cells, as well as human myoepithelial cells. By staining the intact myoepithelial cell layers in benign and *in situ* malignant breast and bronchoalveolar lesions, Anti-Smooth Muscle Myosin is useful for differentiating between benign and malignant tumours. In difficult cases, Anti-Smooth Muscle Myosin is clinically useful in distinguishing between benign sclerosing breast lesions and infiltrating carcinomas, due to its strong staining of the myoepithelial layer in the benign lesions versus its negative staining in the infiltrating carcinomas.

References

1. Nan Ping Wang, et al. Appl Immunohistochem. 5:141-51. 2. Lazard D, et al. Proc Natl Acad Sci U S A. 1993; 90:999-1003. 3. Popnikolov NK, et al. Am J Clin Pathol. 2003; 120:161-7. 4. Agoff SN, et al. Appl Immunohistochem Mol Morphol. 2001; 9:164-9. 5. Werling RW, et al. Am J Surg Pathol. 2003; 27:82-90. 6. Nicolas MM, et al. Hum Pathol. 2010; 41:663-71.

Reference Panels

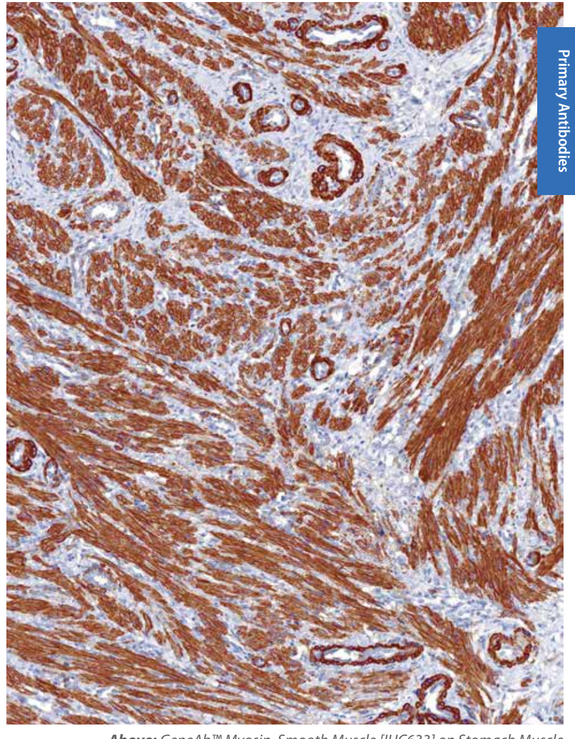
	pg.
Breast/Gynecological	277

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC633-100	$135
1 ml, Concentrate	IHC633-1	$485
7 ml, Predilute	IHC633-7	$270
3 Positive Control Slides	IHC633-PC	$115

Designations

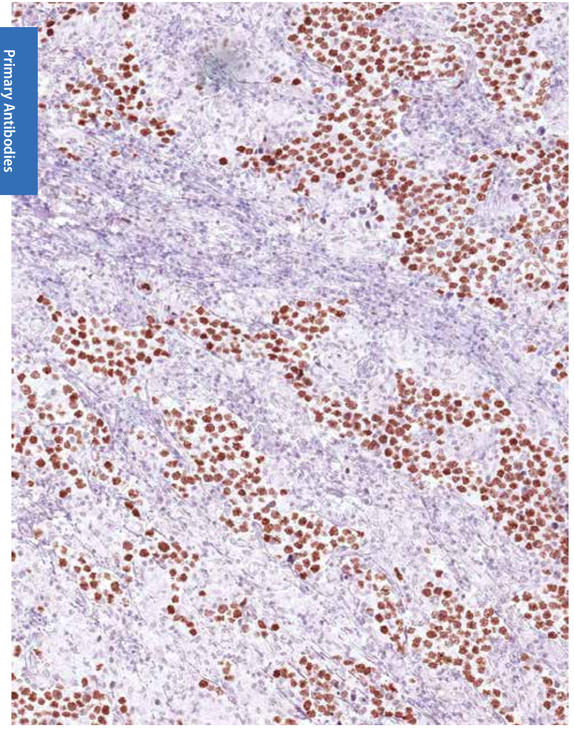
IVD: RUO:



Above: *GeneAb™ Myosin, Smooth Muscle [IHC633] on Stomach Muscle*

Nanog

Clone: IHC634 | **Source:** Mouse Monoclonal | **Positive Control:** Seminoma



Above: *GeneAb™ Nanog [IHC634] on Testicular Cancer*

Description

Nanog is a homeoprotein that functions with pluripotent factors, such as Oct-4 and SOX2, to maintain embryonic stem cell pluripotency. Expression of this protein has been noted in seminoma, dysgerminoma, embryonal carcinoma, and other undifferentiated germ cell tumours, while nanog expression is absent in normal adult organ tissues. Anti-Nanog may be useful in distinguishing between undifferentiated germ cell tumours and non-germ cell tumours.

References

1. Mitsu K, et al. Cell. 2003; 113:631-42. 2. Chambers I, et al. Cell. 2003; 113:643-55. 3. Pan G, et al. Cell Res. 2007; 17:42-9. 4. Hart AH, et al. Cancer. 2005; 104:2092-98. 5. Chang MC, et al. Int J Gynecol Pathol. 2009; 28:347-55.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC634-100	$145
1 ml, Concentrate	IHC634-1	$595
7 ml, Predilute	IHC634-7	$315
3 Positive Control Slides	IHC634-PC	$155

Designations

IVD: RUO:

Napsin A

Clone: IHC635 | **Source:** Mouse Monoclonal | **Positive Control:** Lung Adenocarcinoma, Kidney, Renal Cell Carcinoma

Description

Napsin A is a pepsin-like aspartic proteinase that is closely related to Napsin B. It is expressed mainly in the lung and kidney, and is involved in the correct folding, targeting, and control of aspartic proteinase zymogens. Napsin A expression has been indicated in type II pneumocytes and adenocarcinomas of the lung and kidney. Anti-Napsin A is also useful for differentiating between primary lung adenocarcinomas and adenocarcinomas of other organs, due to the high expression of Napsin A in adenocarcinomas of the lung.

References

1. Hirano T, et al. Lung Cancer. 2003; 41:155-62. 2. Ueno T, et al. Br J Cancer. 2003; 88:1229-33. 3. Suzuki A, et al. Pathol Res Pract. 2005; 201:579-86. 4. Jagirdar J. Arch Pathol Lab Med. 2008; 132:384-96. 5. Dejmek A, et al. Diagn Cytopathol. 2007; 35:493-7. 6. Inamura K, et al. Am J Surg Pathol. 2005; 29:660-5. 7. Bishop JA, et al. Hum Pathol. 2010; 41:20-5. 8. Ye J, et al. Appl Immunohistochem Mol Morphol. 2011; 19:313-7.

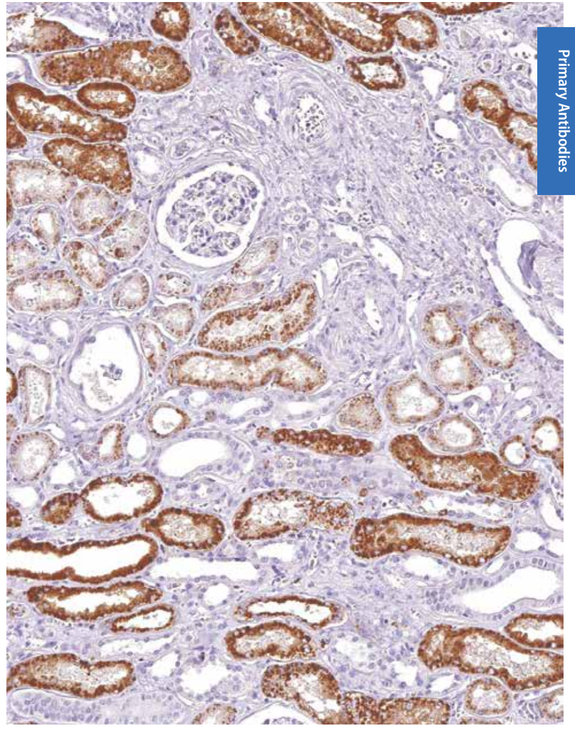
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC635-100	$100
1 ml, Concentrate	IHC635-1	$385
7 ml, Predilute	IHC635-7	$180
25 ml, Predilute	IHC635-25	$1,160
3 Positive Control Slides	IHC635-PC	$160

Designations

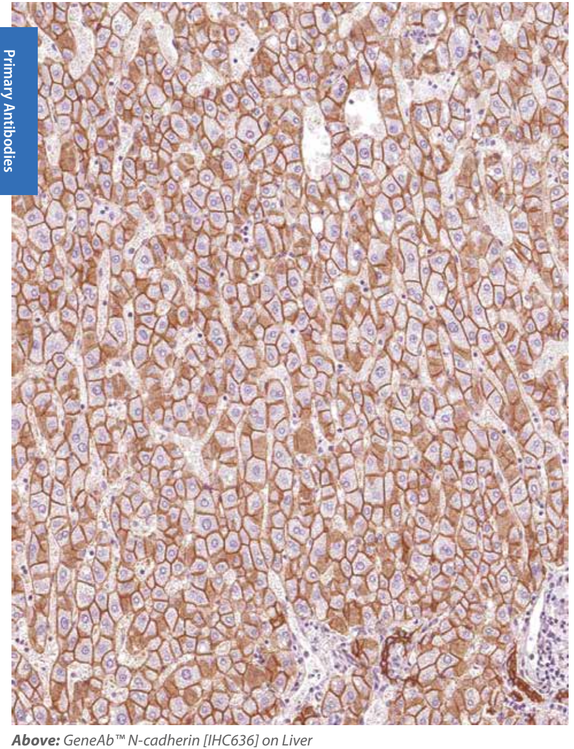
IVD: RUO:



Above: *GeneAb™ Napsin A [IHC635] on Kidney*

N-cadherin

Clone: IHC636 | **Source:** Mouse Monoclonal | **Positive Control:** Breast



Above: *GeneAb™ N-cadherin [IHC636] on Liver*

Description

N-cadherin, also known as **Cadherin-2 (CDH2)** or **Neural Cadherin (NCAD),** is a transmembrane cell adhesion molecule that was originally detected in nervous tissue. It plays an important role in embryogenesis, being involved in gastrulation and neural crest development. N-cadherin is found in cancer cells and allows for transendothelial migration, which is a critical process in the metastasis of cancer. Overexpression and disorderly arrangement of N-cadherin has been noted in dilated cardiomyopathy. It has been suggested that, when considered in adjunct with the status of a number of additional cell-cell adhesion molecules, missense mutations in N-cadherin may be a potential indicator of obsessive-compulsive disorder and Tourette disorder.

References

1. Walsh FS, et al. J Neurochem. 1990; 55:805-12. 2. Reid RA, et al. Nucleic Acids Res. 1990; 18:5896. 3. Ramis-Conde, I, et al. Phys Biol. 2009; 6:016008. 4. Moya PR, et al. Eur J Human Genet. 2013; 21:850-4. 5. Tsipis A, et al. Pathol Res Pract. 2010; 206:625-30. 6. Derycke LD, et al. Int J Dev Biol. 2004; 48:463-76.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC636-100	$210
1 ml, Concentrate	IHC636-1	$980
7 ml, Predilute	IHC636-7	$520
3 Positive Control Slides	IHC636-PC	$275

Designations

IVD: RUO:

Nerve Growth Factor Receptor (NGFR)

Clone: IHC637 | **Source:** Mouse Monoclonal | **Positive Control:** Breast

Description

Nerve Growth Factor Receptor (NGFR), also known as **p75, P-75NTR,** or **CD271,** is a neurotrophin receptor belonging to the tumour necrosis factor receptor family. It is expressed mainly in Schwann cells and neurons, as well as a number of other non-neuronal cell types, and is also expressed in melanocytes, melanomas, neuroblastomas, pheochromocytomas, neurofibromas, neurotized nevi (type C melanocytes), and other neural crest cell or tumour derivatives. It has been suggested that NGFR may act as a tumour suppressor indicated in prostate and urothelial cancer, and Anti-NGFR is often used in adjunct with S100, to aid in the diagnosis of desmoplastic and neurotrophic malignant melanomas. Anti-NGFR is also useful as an aid in the diagnosis of breast malignancy, as the antibody labels the myoepithelial cells of breast ducts and intralobular fibroblasts of breast ducts.

References

1. Radfar A, et al. Am J Dermatopathol. 2006; 28:162-7. 2. Kaplan DR, et al. Curr Opin Cell Biol. 1997; 9:213-21. 3. Bunone G, et al. Oncogene. 1997; 14:1463-70. 4. Kanik AB, et al. J Cutan Pathol. 1996; 23:205-10.

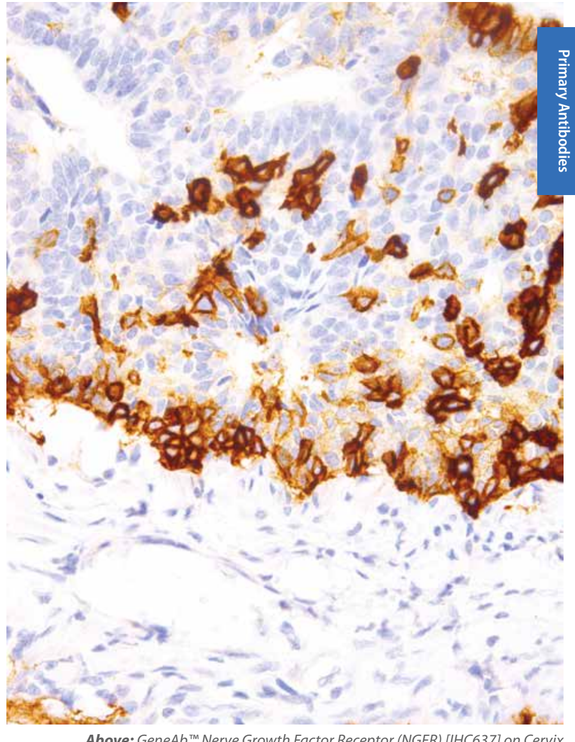
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC637-100	$190
1 ml, Concentrate	IHC637-1	$870
7 ml, Predilute	IHC637-7	$520
3 Positive Control Slides	IHC637-PC	$160

Designations

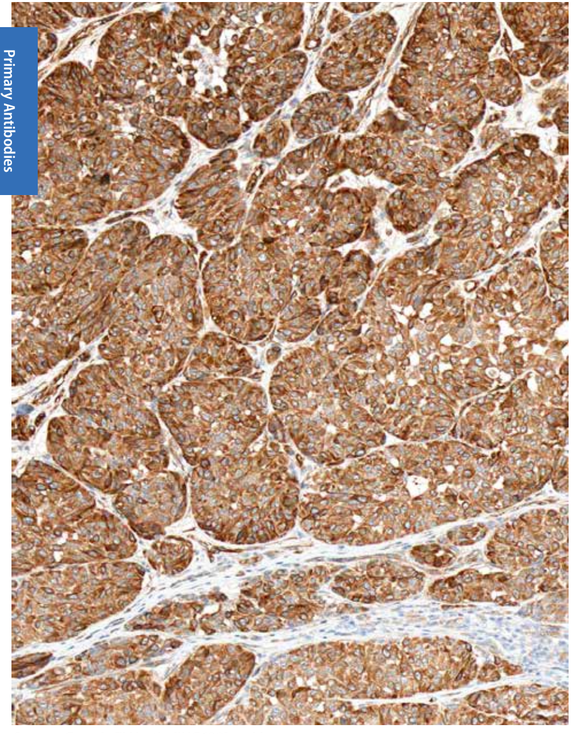
IVD: RUO:



Above: *GeneAb™ Nerve Growth Factor Receptor (NGFR) [IHC637] on Cervix*

Nestin

Clone: IHC638 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ Nestin [IHC638] on Melanoma*

Description

Nestin is a type IV intermediate filament protein that is expressed in dividing cells during early stages of Central Nervous System (CNS) and Peripheral Nervous System (PNS) development, as well as that of myogenic and other tissue types. Overexpression of nestin has been clinically linked to human gliomas, as well as tumours of the CNS, such as astrocytoma, ependymoma, oligodendroglioma, glioblastoma, and primitive neuroectodermal tumours. Nestin expression has also been indicated in prostatic adenocarcinoma, pancreatic ductal carcinoma, thyroid carcinoma, and mesenchymal tumours, such as gastrointestinal stromal tumour and dermatofibrosarcoma protuberans. Reports have suggested that nestin is significantly overexpressed in melanoma, and is linked to more advanced stages of the disease.

References

1. Michalczyk K, et al. Histol Histopathol. 2005; 20:665-71. 2. Maho K, et al. J Dermatol. 2010; 37:505-11. 3. Toshiyuki I, et al. World J Gastroenterol. 2011; 17:409-18. 4. Brychtova S, et al. J Cutan Pathol. 2007; 34:370-5. 5. Kanoh M, et al. J Dermatol. 2010; 37:505-11. 6. Ishiwata T, et al. World J Gastroenterol. 2011; 17:409-18. 7. Li H, et al. Cancer Res. 2007; 67:501-10.

Reference Panels pg.

- Dermatopathology.....279

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC638-100	$220
1 ml, Concentrate	IHC638-1	$970
7 ml, Predilute	IHC638-7	$465
3 Positive Control Slides	IHC638-PC	$245

Designations

IVD: RUO:

Neurofilament

Clone: IHC639 | **Source:** Mouse Monoclonal | **Positive Control:** Brain

Description

Neurofilaments are a group of intermediate filaments found abundantly around the axons of vertebrate neurons. They are also expressed in paragangliomas, adrenal pheochromocytomas, Merkel cell tumours, carcinoid tumours, neuroendocrine carcinomas of the skin, and oat cell carcinomas of the lung. Anti-Neurofilament stains a variety of neural, neuroendocrine, and endocrine tumours, such as neuromas, ganglioneuromas, gangliogliomas, ganglioneuroblastomas, and neuroblastomas.

References

1. Diepholder HM, et al. Cancer. 1991; 68:2192-201. 2. Franquemont DW, et al. Am J Clin Pathol. 1994; 102:163-70. 3. Wood, JN, et al. Biosci Rep. 1981; 1:263-8. 4. Anderton BH, et al. Nature. 1982; 298:84-6. 5. Miettinen M, et al. Lab Invest. 1985; 52:429-36. 6. Van Muijen GNP, et al. Am J Pathol. 1984; 116:363-9. 7. Trojanowski JQ, et al. N Eng J Med. 1985; 313:101-4. 8. Morrison CD, et al. Semin Diagn Pathol. 2000; 17:204-15. 9. Dubovy SR, et al. Br J Opthalmol. 2001; 85:949-51. 10. Erana-Rojas IE, et al. Ann Diagn Pathol. 2002; 6:265-71.

Reference Panels pg.

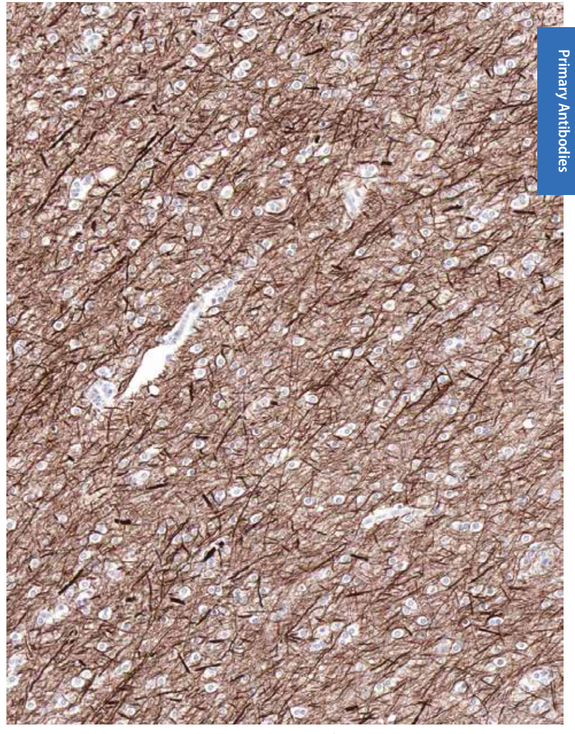
- Neuropathology.....299

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC639-100	$125
1 ml, Concentrate	IHC639-1	$450
7 ml, Predilute	IHC639-7	$250
3 Positive Control Slides	IHC639-PC	$115

Designations

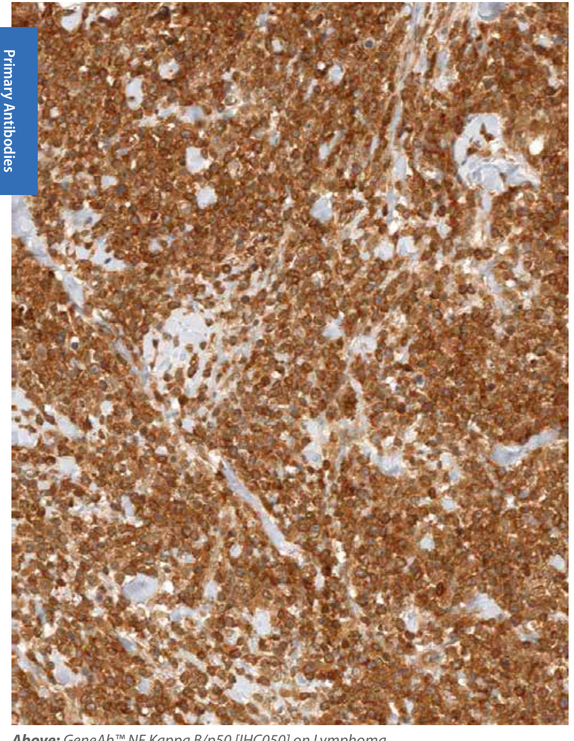
IVD: RUO:



Above: *GeneAb™ Neurofilament [IHC639] on Cerebral Cortex*

NF Kappa B/p50

Clone: IHC050 | **Source:** Mouse Monoclonal | **Positive Control:** Testis



Above: *GeneAb™ NF Kappa B/p50 [IHC050] on Lymphoma*

Description

NF Kappa B/p50 or **NFκB1** is one of five transcription factors belonging to the Nuclear Factor-κB (NFκB) family, which is involved in a number of physiological and pathological processes such as inflammatory and immune response, as well as cellular proliferation, differentiation, survival, and apoptosis. p50 has been specifically linked to transcription of IL-10, and is unique in that it lacks a transactivation domain. Overexpression of NF Kappa B/p50 has been associated with lipopolysaccharide tolerance in human monocytes, thereby blocking tumour necrosis factor gene expression. Increased expression of nuclear p50 is also correlated with chemoresistance and the prognosis of serous epithelial ovarian cancer. Polymorphisms in NFκB1 have been clinically linked to increased susceptibility to coronary artery disease.

References

1. Yonghui Y, at al. Curr Cancer Drug Targets. 2009; 9:566-71. 2. Cao S, et al. J Biol Chem. 2006; 281:26041-50. 3. Kastenbauer S, et al. Infect Immun. 1999; 67:1553-9. 4. Shuang T, et al. Exp Mol Pathol. 2016; 100:139-44. 5. Guo XL, et al. Genet Mol Res. 2016; 15.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC050-100	$105
1 ml, Concentrate	IHC050-1	$410
7 ml, Predilute	IHC050-7	$260
3 Positive Control Slides	IHC050-PC	$140

Designations

IVD: RUO:

NKX3.1

Clone: IHC640 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate Adenocarcinoma, Prostate

Description

NKX3.1, also known as **BAPX2** or **NKX3A,** is a homeobox protein located mainly in the prostate epithelium, and is also present in testis, ureter, and pulmonary bronchial mucous glands. NKX3.1 is clinically indicated in the majority of primary prostatic adenocarcinomas, as well as invasive ductal carcinomas and invasive lobular carcinomas of the breast. Underexpression of NKX3.1 is typical of human prostate carcinomas and prostatic intraepithelial neoplasia, and negative staining with Anti-NKX3.1 is common in urothelial carcinoma. Anti-NKX3.1 can be useful as an aid to distinguish between high grade prostate adenocarcinoma and high grade infiltrating urothelial carcinoma. It is also useful for identifying metastatic tumours and, when used in combination with Anti-ERG, this antibody may be a superior aid for identifying tumours of prostatic origin.

References

1. He WW, et al. Genomics. 1997; 43: 69-77. 2. Abate-Shen C, et al. Differentiation. 2008; 76: 717-27. 3. Bowen C, et al. Cancer Res. 2010; 70:3089-97. 4. Chuang A, et al. Am J Clin Pathol. 2007; 31:1246-55. 5. Asch-Kendrick R, et al. J Clin Pathol. 2014; 67:768-71. 6. Am J Surg Pathol. 2010; 34:1097-105.

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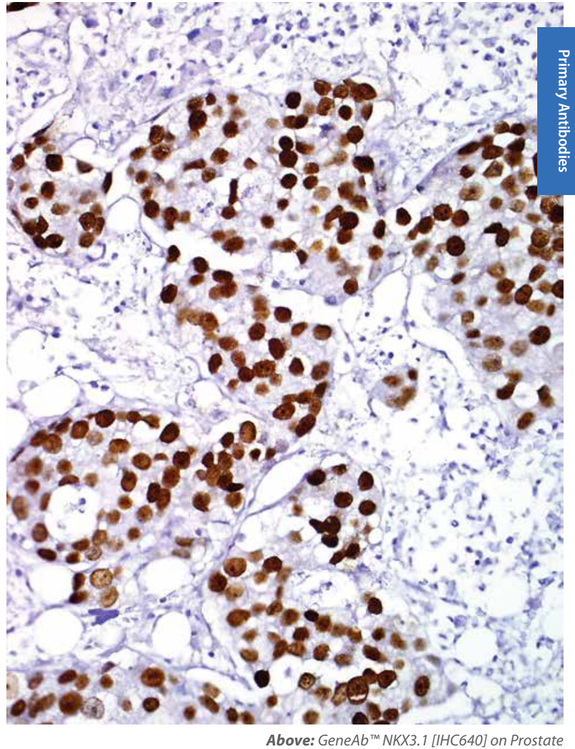
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC640-100	$95
1 ml, Concentrate	IHC640-1	$525
7 ml, Predilute	IHC640-7	$175
25 ml, Predilute	IHC640-25	$615
3 Positive Control Slides	IHC640-PC	$95

Designations

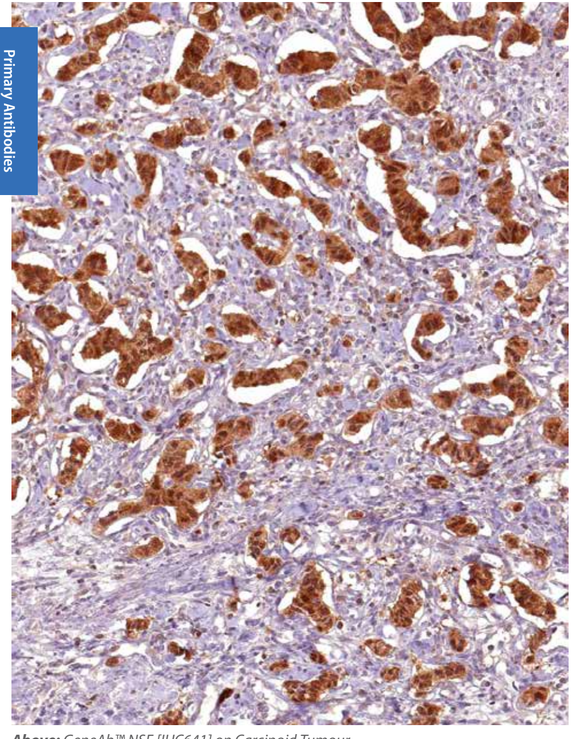
IVD: RUO:



Above: *GeneAb™ NKX3.1 [IHC640] on Prostate*

NSE

Clone: IHC641 | **Source:** Mouse Monoclonal | **Positive Control:** Pancreas, Carcinoid Tumour



***Above:** GeneAb™ NSE [IHC641] on Carcinoid Tumour*

Description

Neuron-Specific Enolase (NSE), also known as **Enolase 2 (ENO2),** is one of three enolase enzymes found in mammals, and acts as a phosphopyruvate hydratase. This mammalian glycolytic isoenzyme is located specifically in neurons of neuroendocrine cells, as well as tumours associated with those neurons. However, it has also been detected immunohistochemically in non-neoplastic cells of the pituitary, peptide-secreting tissues, pinealocytes, neuroendocrine cells of the lung, thyroid, parafollicular cells, adrenal medulla, islets of Langerhans, Merkel cells of the skin, and melanocytes. NSE is a useful marker for identifying normal striated muscle, hepatocytes, and peripheral nerves. Anti-NSE may detect for neuroendocrine differentiation, only when used in a panel of antibodies including more specific markers such as synaptophysin, chromogranin, and neurofilament.

References

1. Perentes E, et al. Arch Pathol Lab Med. 1987; 111:796-812. 2. Cras P, et al. Ann Neurol. 1986; 20:106-17. 3. Schmechal D, et al. Lab Invest. 1985; 52:239-42. 4. Dhillon AP, et al. Histopathology. 1982; 6:81-92. 5. Gu J, et al. Am J Pathol. 1981; 104:63-8.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC641-100	$150
1 ml, Concentrate	IHC641-1	$555
7 ml, Predilute	IHC641-7	$320
3 Positive Control Slides	IHC641-PC	$115

Designations

IVD: RUO:

Oct-2

Clone: IHC642 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node

Description

Octamer Transcription Factor-2 (Oct-2) is a member of the POU homeodomain family of transcription factors. It binds to the immunoglobin gene octamer motif, thereby regulating B-cell-specific gene expression and transcription in a variety of tissues. Oct-2 is highly expressed in germinal center B-cells, mantle B-cells, monocytoid B-cells, and plasma cells, thus making Anti-Oct-2 useful for detecting various lymphomas including B-chronic lymphocytic leukemia, mantle cell lymphoma, follicular lymphoma, marginal zone lymphoma, plasmacytoma, Burkitt's lymphoma, diffuse large cell lymphoma, diffuse large B-cell lymphoma, T-cell rich B-cell lymphoma, nodular lymphocyte predominant Hodgkin's lymphoma, and classic Hodgkin's lymphoma.

References

1. Browne P, et al. Am J Clin Pathol. 2003; 120:767-77. 2. Gibson SE, et al. Am J Clin Pathol. 2006; 126:916-24. 3. Hallermann C, et al. J Am Acad Dermatol. 2007; 56:588-97. 4. García-Cosío M, et al. Mod Pathol. 2004; 17:1531-8. 5. Staudt LM, et al. Nature. 1986; 323:640-3. 6. Scheidereit C, et al. Cell. 1987; 51:783-93. 7. Herr W, et al. Genes Dev. 1995; 9:1679-93. 8. Pfisterer P, et al. Mol Cell Biol. 1996; 16:6160-8. 9. Torlakovic E, et al. Am J Pathol. 2001; 159:1807-14.

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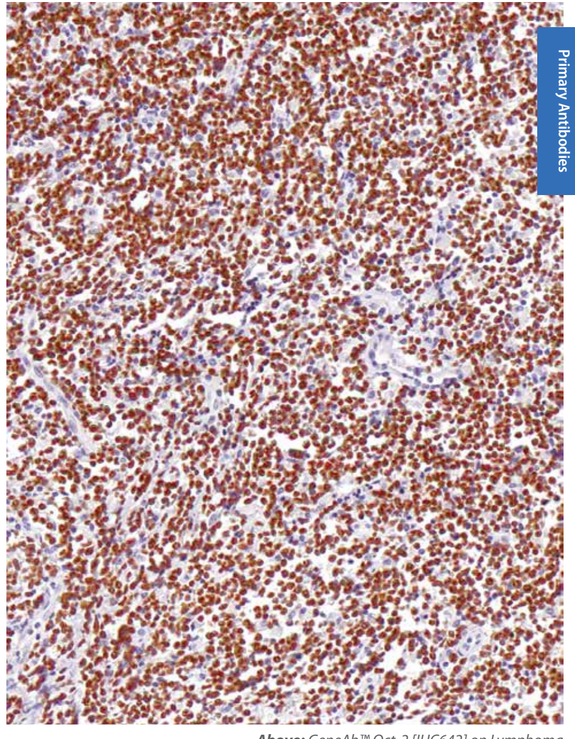
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC642-100	$130
1 ml, Concentrate	IHC642-1	$635
7 ml, Predilute	IHC642-7	$205
3 Positive Control Slides	IHC642-PC	$115

Designations

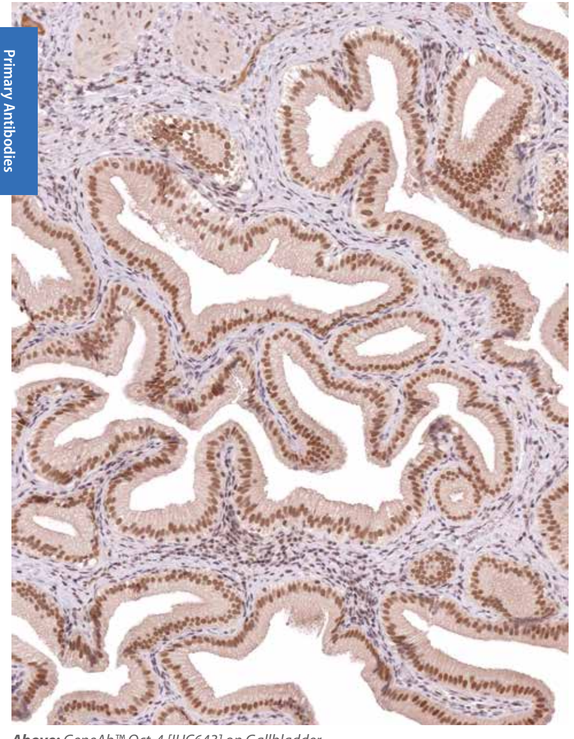
IVD: RUO:



***Above:** GeneAb™ Oct-2 [IHC642] on Lymphoma*

Oct-4

Clone: IHC643 | **Source:** Mouse Monoclonal | **Positive Control:** Seminoma



Above: *GeneAb™ Oct-4 [IHC643] on Gallbladder*

Description

Octamer-Binding Transcription Factor 4 (Oct-4), also known as **POU5F1 (POU Domain, Class 5, Transcription Factor 1),** is a member of the POU homeodomain family of transcription factors and is involved in the maintenance and regulation of pluripotency in embryonic stem and germ cells. Anti-Oct-4 is highly useful and sensitive for seminomas, germinoma, dysgerminoma, embryonal carcinoma, and gonadoblastoma. Oct-4 may be associated with tumourigenesis, and can have an effect on some aspects of tumour behavior, including tumour recurrence or resistance to therapies.

References

1. Baker PM, et al. Int J Gynecol Pathol. 2005; 24:39-55. 2. Biermann K, et al. Histopathology. 2006; 49:290-7. 3. Cheng CJ, et al. J Biomed Sci. 2007; 14:797-807. 4. Cools M, et al. J Clin Endocrinol Metab. 2006; 91:2404-13. 5. Niwa H, et al. Nat Genet. 2000; 24:372-6. 6. Biermann K, et al. Histopathology. 2006; 49:290-7. 7. Cheng L, et al. J Pathol. 2007; 211:1-9. 8. Linn DE, et al. Genes Cancer. 2010; 1:908-16.

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC643-100	$190
1 ml, Concentrate	IHC643-1	$955
7 ml, Predilute	IHC643-7	$350
3 Positive Control Slides	IHC643-PC	$160

Designations

IVD: RUO:

p21

Clone: IHC021 | **Source:** Mouse Monoclonal | **Positive Control:** Colon

Description

p21, also known as **$p21^{Cip1}$, $p21^{Waf1}$, Cyclin-Dependent Kinase Inhibitor 1,** or **CDK-Interacting Protein 1,** functions to regulate cell cycle progression at G1 by inhibiting the activity of Cyclin-CDK2 or -CDK4 complexes. This cyclin-dependent kinase inhibitor is expressed in all adult human tissues, and decreased expression of p21 is linked to poor prognosis in a number of carcinomas including gastric carcinoma, non-small cell lung carcinoma, and thyroid carcinoma. p21 is also associated with favourable prognosis in several tumours.

References

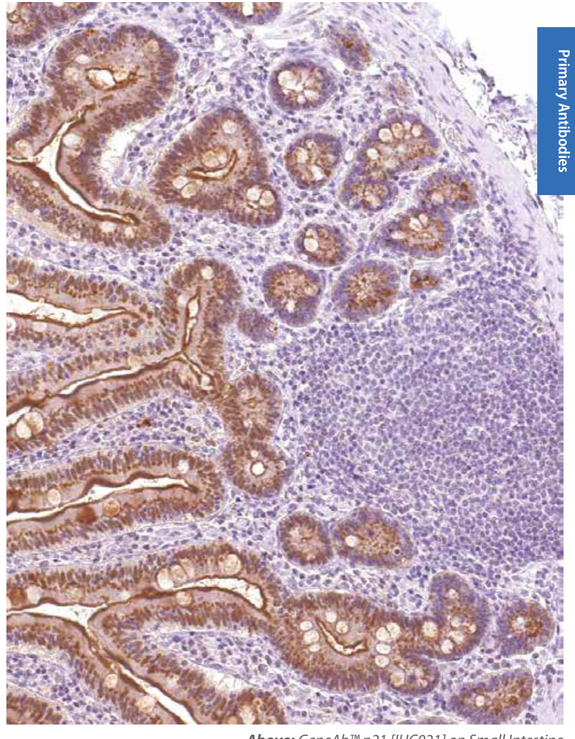
1. Winters ZE, et al. Eur J Cancer. 2001; 37:2405-12. 2. Zhou BP, et al. Nat Cell Biol. 2001; 3:245-52. 3. Winters ZE, et al. Breast Cancer Res. 2003; 5:R242-9. 4. Dolezalova D, et al. Stem Cells. 2012; 7:1362-72. 5. Almond JB, et al. Leukemia. 2002; 16:433-43. 6. Gartel AL, et al. Cancer Res. 2005; 65:3980-5. 7. Tamura M, et al. Ann Thorac Cardiovasc Surg. 2007; 13:9-14.

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC021-100	$115
1 ml, Concentrate	IHC021-1	$420
7 ml, Predilute	IHC021-7	$220
3 Positive Control Slides	IHC021-PC	$160

Designations

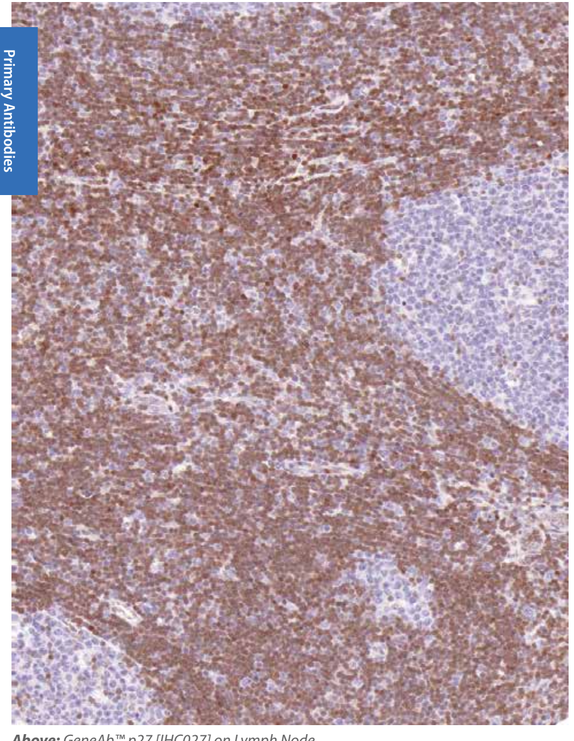
IVD: RUO:



Above: *GeneAb™ p21 [IHC021] on Small Intestine*

p27

Clone: IHC027 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ p27 [IHC027] on Lymph Node*

Description

p27, also known as **p27^{Kip1},** is a cyclin-dependent kinase inhibitor that binds to and inhibits cyclin-dependent kinases, thereby regulating progression from G1 to S phase. Decreased expression of p27 is linked to poor prognosis in renal-cell carcinoma, colon carcinoma, small breast carcinomas, non-small-cell lung carcinoma, hepatocellular carcinoma, multiple myeloma, lymph node metastases in papillary carcinoma of the thyroid, and is associated with a more aggressive phenotype of carcinoma in the cervix.

References

1. Lloyd RV, et al. Am J Pathol. 1999; 154:313-23. 2. Migita T, et al. Cancer. 2002; 94:973-9. 3. Haitel A, et al. Urology. 2001; 58:477-81. 4. Esposito V, et al. Cancer Res. 1997; 57:3381-5. 5. Tan P, et al. Cancer Res. 1997; 57:1259-63. 6. Khoo ML, et al. J Clin Endocrinol Metab. 2002; 87:1814-8. 7. Huang LW, et al. Gynecol Oncol. 2002; 85:524-8. 8. Ribal MJ, et al. Anticancer Res. 2003; 23:5101-6. 9. Khoo ML, et al. Arch Otolaryngol Head Neck Surg. 2002; 128:253-7. 10. Freedland SJ, et al. Urology. 2003; 61:1187-92. 11. Armengol C, et al. J Hepatol. 2003; 38:591-7.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC027-100	$150
1 ml, Concentrate	IHC027-1	$530
7 ml, Predilute	IHC027-7	$265
3 Positive Control Slides	IHC027-PC	$115

Designations

IVD: RUO:

p40

Clone: IHC040 | **Source:** Mouse Monoclonal | **Positive Control:** Squamous Cell Lung Carcinoma

Description

Anti-p40 recognizes squamous and basal cells, the shortest variant of p53, and ΔNp63 (an isoform of p63). p40 has been indicated as an alternative to p63 for the detection of Squamous Cell Carcinoma (SqCC), offering the advantage of eliminating potential misinterpretation of a positive adenocarcinoma as a SqCC.

References

1. Bishop JA, et al. Mod Pathol. 2012; 25:405-15. 2. Pelosi G, et al. J Thorac Oncol. 2012; 7:281-90.

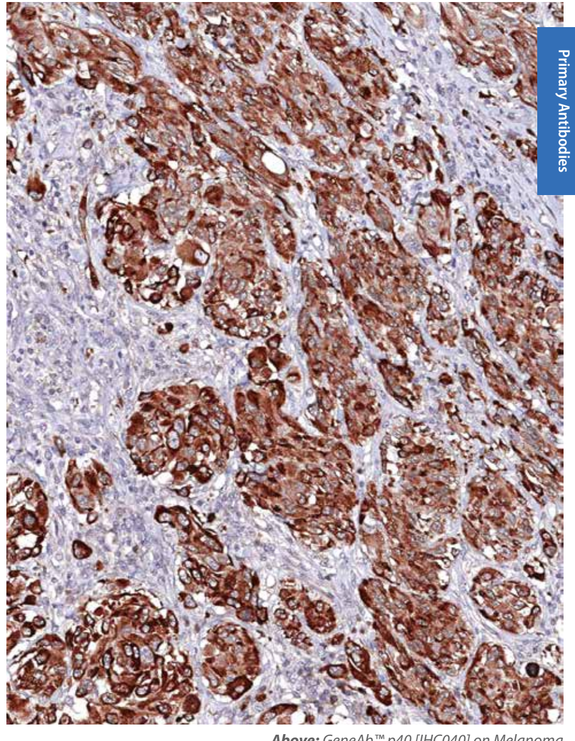
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC040-100	$185
1 ml, Concentrate	IHC040-1	$765
7 ml, Predilute	IHC040-7	$415
25 ml, Predilute	IHC040-25	$1,540
3 Positive Control Slides	IHC040-PC	$220

Designations

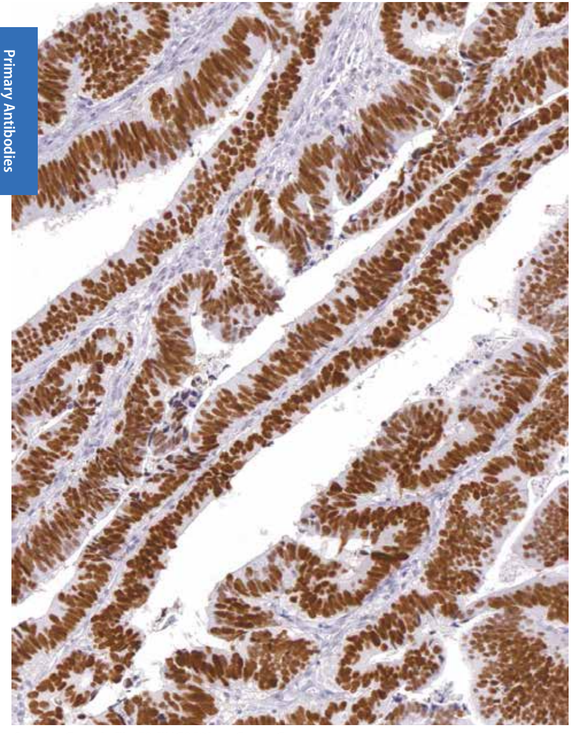
IVD: RUO:



Above: *GeneAb™ p40 [IHC040] on Melanoma*

p53

Clone: IHC053 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Carcinoma



Above: *GeneAb™ p53 [IHC053] on Colon Cancer*

Description

p53, also known as **Tumour Protein 53** or **TP53,** is a tumour suppressor and transcription factor that functions in a number of anti-cancer activities including DNA repair, cell-cycle arrest, and apoptosis in response to DNA damage or other stressors. Mutations in p53 are linked to a number of malignant tumours, including those of the breast, ovary, bladder, colon, lung, and melanoma. Anti-p53 staining has been used to detect intratubular germ cell neoplasia, and also to distinguish between uterine serous carcinoma and endometrioid carcinoma.

References

1. Stoehlmacker J, et al. Oncol. 2003; 30:10-16. 2. Gallo O, et al. Hum Pathol. 2002; 33:708-714. 3. Sano H, et al. Cancer Res. 1995: 55:3785-9. 4. Denkert C, et al. Cancer. 2003; 97:2978-87. 5. Sheehan KM, et al. Hum Pathol. 2003; 34:1242-1246. 6. Moore BE, et al. Appl Immunohistochem Mol Morphol. 2001; 9:203-6. 7. Mauri FA, et al. Int J Oncol. 1999; 15:1137-47. 8. Caffo O, et al. Clin Cancer Res. 1996; 2:1591-9. 9. Bebenek M, et al. Anticancer Res. 1998; 18:619-23. 10. Midulla C, et al. Anticancer Res. 1999; 19:4033-7. 11. Zen ZS, et al. J Clin Oncol. 1994; 12:2043-50. 12. Quinlan DC, et al. Cancer Res. 1992; 53:4828-31. 13. Alexiev BA, et al. Gen Diagn Pathol. 1997; 142:271-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC053-100	$125
1 ml, Concentrate	IHC053-1	$445
7 ml, Predilute	IHC053-7	$295
3 Positive Control Slides	IHC053-PC	$115

Designations

IVD: RUO:

p57Kip2

Clone: IHC057 | **Source:** Mouse Monoclonal | **Positive Control:** Placenta

Description

p57Kip2, also known as **p57,** is a tumour suppressor protein that causes cell cycle arrest at G1 by binding to G1 cyclin-CDK complexes. The p57Kip2 gene is a potential tumour suppressor target as the gene is located in a chromosomal region implicated in sporadic cancers, Wilms' tumour, and Beckwith Wiedemann syndrome. Anti-p57Kip2 labels many cytotrophoblast nuclei and stromal cells in normal placenta, and is useful in differentiating between complete hydatidiform mole and partial hydatidiform mole or hydropic abortion.

References

1. Hatada I, et al. Hum Mol Genet. 1996; 5:783-8. 2. Overall ML, et al. Genes Chromosomes Cancer. 1996; 17:56-9. 3. Kihara M, et al. J Reprod Med. 2005; 50:307-12. 4. Romaguera RL, et al. Fetal Pediatr Pathol. 2004; 23:181-90. 5. Marjoniemi VM. Pathology. 2004; 36:109-19. 6. Jun SY, et al. Histopathology. 2003; 43:17-25.

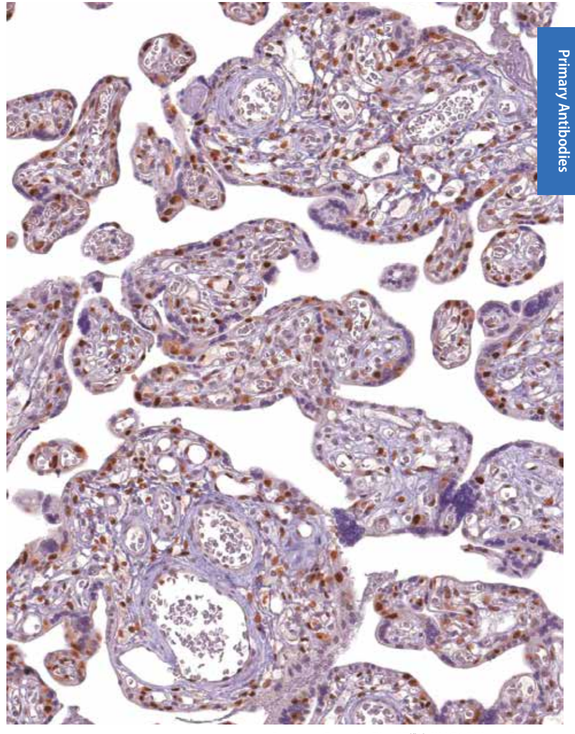
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC057-100	$135
1 ml, Concentrate	IHC057-1	$545
7 ml, Predilute	IHC057-7	$370
3 Positive Control Slides	IHC057-PC	$115

Designations

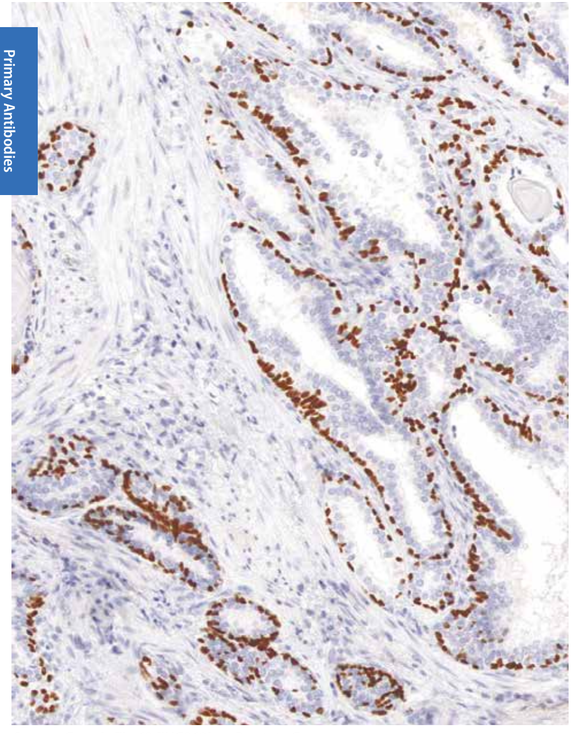
IVD: RUO:



Above: *GeneAb™ p57Kip2 [IHC057] on Placenta*

p63

Clone: IHC063 | **Source:** Mouse Monoclonal | **Positive Control:** Skin, Squamous Cell Carcinoma, Prostate



Above: *GeneAb™ p63 [IHC063] on Prostate Cancer*

Description

p63 is a tumour suppressor protein that is very similar to p53 in structure and function, while being homologous to p73. p63 is important in development and differentiation, and has been identified as a useful marker for distinguishing between lung squamous cell carcinomas and adenocarcinomas. Anti-p63 is also used to differentiate between benign and malignant prostate and breast lesions, due to its labeling of the nuclei of myoepithelial cells in both tissue types.

References

1. Yang A, et al. Mol Cell. 1998; 2:305-16. 2. Signoretti S, et al. Am J Pathol. 2000; 157:1769-75. 3. Yang A, et al. Nature. 1999; 398:714-8. 4. Barbareschi M, et al. Am J Surg Pathol. 2001; 25:1054-60. 5. Werling RW, et al. Am J Surg Pathol. 2003; 27:82-90. 6. Rajal B Shah, et al. Am J Surg Pathol. 2002; 26:1161-8. 7. Iacono ML, et al. J Thorac Oncol. 2011; 6:473-81. 8. Mukhopadhyay S, et al. Am J Surg Pathol. 2011; 35:15-25. 9. Conde E, et al. PLoS One. 2010; 5:e12209. 10. Uke M, et al. Cytopathology. 2010; 21:56-63.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC063-100	$220
1 ml, Concentrate	IHC063-1	$1,025
7 ml, Predilute	IHC063-7	$340
25 ml, Predilute	IHC063-25	$1,230
3 Positive Control Slides	IHC063-PC	$180

Designations

IVD: RUO:

p120 Catenin

Clone: IHC120 | **Source:** Mouse Monoclonal | **Positive Control:** Lobular Breast Carcinoma

Description

p120 Catenin is a nucleolar protein belonging to the armadillo protein family, which is involved in cell-cell adhesion and signal transduction. p120 Catenin is associated with proliferation, and is found in the majority of human malignant tumours, while remaining absent from resting normal cells. Anti-p120 Catenin is useful in differentiating between ductal and lobular neoplasia in the breast, and strong staining with Anti-p120 Catenin is associated with discohesive infiltrative morphology in gastric and colonic carcinoma. Accumulation of p120 Catenin in the cytoplasm has been linked to lung cancer, pancreatic cancer, and gastric cancer, and is correlated to poor prognosis in colon cancer.

References

1. Kersebilck A, et al. Genomics. 1998; 50:129-46. 2. Aho S, et al. J Cell Sci. 2002; 115:1391-402. 3. Chetty R, et al. Am J Clin Pathol. 2008; 130:71-6. 4. Reynolds AB, et al. Oncogene. 1992; 7:2439-45. 5. Thoreson MA, et al. Mol Cell Biol. 1994; 14:8333-42. 6. Sarrio D, et al. Oncogene. 2004; 23:3272-83. 7. Dabbs DJ, et al. Am J Surg Pathol. 2007; 31:427-37. 8. Jawhari AW, et al. J Pathol. 1999; 189:180-5. 9. Bellovin DI, et al. Cancer Res. 2005; 65:10938-45.

Reference Panels

pg.

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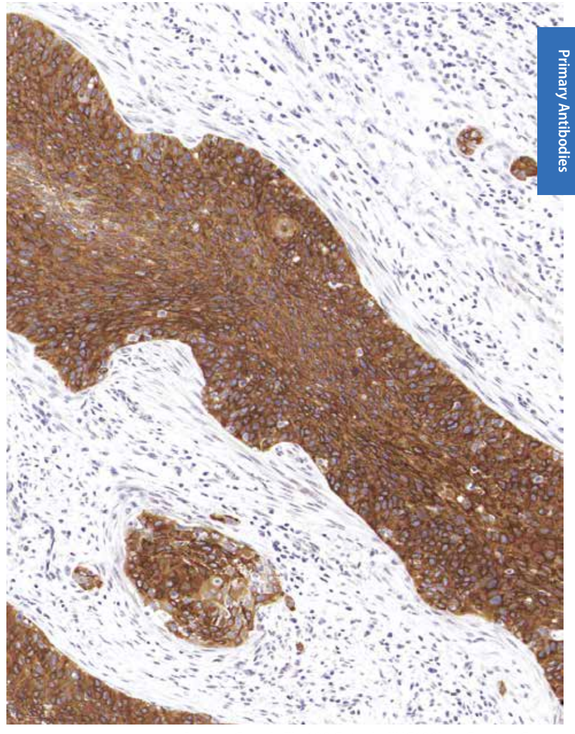
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC120-100	$110
1 ml, Concentrate	IHC120-1	$660
7 ml, Predilute	IHC120-7	$230
25 ml, Predilute	IHC120-25	$1,210
3 Positive Control Slides	IHC120-PC	$160

Designations

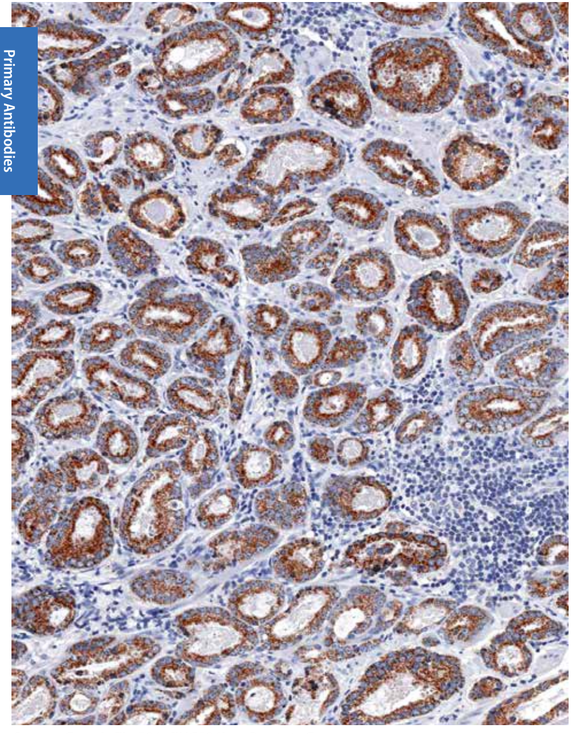
IVD: RUO:



Above: *GeneAb™ p120 Catenin [IHC120] on Cervical Cancer*

p504s

Clone: IHC504 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate Carcinoma



Above: *GeneAb™ p504s [IHC504] on Prostate Cancer*

Description

p504s, also known as **α-Methylacyl Coenzyme A Racemase (AMACR),** is an enzyme localized in the peroxisome and mitochondria that functions in β-oxidation of branched chain fatty acids, as well as bile synthesis. AMACR has been clinically indicated as a tissue biomarker for prostate cancer and colorectal cancer, as well as high-grade prostatic intraepithelial neoplasia, a precursor lesion of prostate cancer. p504s overexpression has also been detected in a number of other cancers including ovarian, breast, bladder, lung, and renal cell carcinomas, lymphoma, and melanoma.

References

1. Ferdinandusse S, et al. J Lipid Res. 2000; 41:1890-6. 2. Xu J, et al. Cancer Res. 2000; 60:1677-82. 3. Rubin MA, et al. JAMA. 2002; 287:1662-70. 4. Luo J, et al. Cancer Res. 2002; 62:2220-6. 5. Zhou M, et al. Am J Surg Pathol. 2002; 26:926-31. 6. Wu CL, et al. Hum Pathol. 2004; 35:1008-13.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC504-100	$160
1 ml, Concentrate	IHC504-1	$570
7 ml, Predilute	IHC504-7	$350
3 Positive Control Slides	IHC504-PC	$160

Designations

IVD: RUO:

Pan Melanoma

Clone: IHC644 | **Source:** Mouse Monoclonal | **Positive Control:** Normal Skin, Melanoma

Description

Pan Melanoma is a cocktail of HMB-45, MART-1, and Tyrosinase. HMB-45 is specific for an antigen found in melanoma cells, cutaneous melanocytes, and prenatal and infantile retinal pigment epithelium, thereby labeling the majority of melanomas. MART-1, also known as Melan A, is useful as a marker for melanocytic tumours and as an aid in establishing the diagnosis of metastatic melanomas. Tyrosinase is an enzyme involved in the biosynthesis of melanin, and has been indicated as a specific marker for melanotic lesions such as malignant melanoma and melanotic neurofibroma. Anti-Pan Melanoma is effective for detecting melanomas and melanocytic lesions, and may prove valuable in diagnosis of melanoma metastasis in sentinel lymph nodes.

References

1. Kageshita T, et al. J Immunother. 1997; 20:460-5. 2. Fetsch PA, et al. Cancer. 1999; 87:37-42. 3. Bergman R, et al. J Am Acad Dermatol. 2000; 42:496-500. 4. Orsz Z. Histopathology. 1999; 34:517-25. 5. Jungbluth AA, et al. Pathol Res Pract. 2000; 96:235-42. 6. Meije CB, et al. J Pathol. 2000; 190:572-8. 7. Blessing K, et al. Histopathology. 1998; 32:139-146. 8. Jungbluth AA, et al. Am J Surg Pathol. 1998; 22:595-602. 9. Beaty MW, et al. Cancer. 1997; 81:57-63.

Reference Panels

pg.

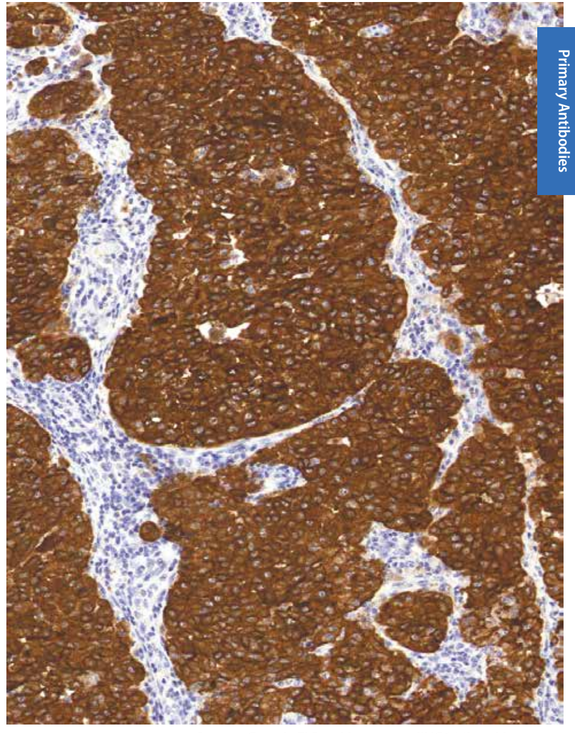
- Dermatopathology.....279

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC644-100	$105
1 ml, Concentrate	IHC644-1	$400
7 ml, Predilute	IHC644-7	$175
3 Positive Control Slides	IHC644-PC	$95

Designations

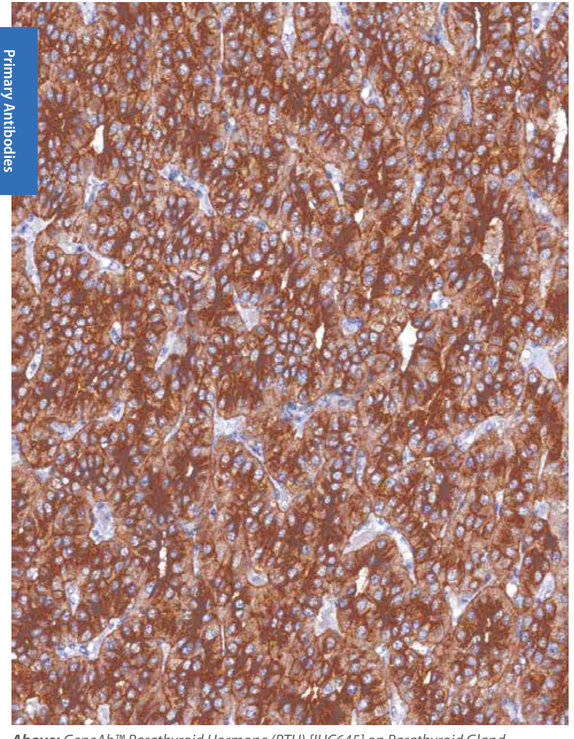
IVD: RUO:



Above: *GeneAb™ Pan Melanoma [IHC644] on Melanoma*

Parathyroid Hormone (PTH)

Clone: IHC645 | **Source:** Mouse Monoclonal | **Positive Control:** Parathyroid



Above: *GeneAb™ Parathyroid Hormone (PTH) [IHC645] on Parathyroid Gland*

Description

Parathyroid Hormone (PTH), also known as **Parathormone** or **Parathyrin,** is a hormone secreted by the parathyroid glands that functions to increase the concentration of calcium in the blood. Anti-Parathyroid Hormone (PTH) is useful for differentiating parathyroid hyperplasia/neoplasms from thyroid and metastatic neoplasms, and is also used in the consideration of parathyroid carcinomas located primarily in the anterior mediastinum.

References

1. Aldinger KA, et al. Cancer. 1982; 49:388-97. 2. Habener JF, et al. Physiol Rev. 1984; 64:985-1053. 3. Wick MR, et al. Semin Diagn Pathol. 1997; 14:183-202. 4. Chen HL, et al. J Biol Chem. 2002; 277:19374-81. 5. Murphy MN, et al. Cancer. 1986; 58:2468-76.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC645-100	$150
1 ml, Concentrate	IHC645-1	$575
7 ml, Predilute	IHC645-7	$360
3 Positive Control Slides	IHC645-PC	$160

Designations

IVD: RUO:

PAX5

Clone: IHC005 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

PAX5 is a member of the paired box (PAX) family of transcription factors, which are key regulators in early development. The PAX5 gene encodes the B-cell lineage specific activator protein (BSAP), whose expression is limited to early stages of B-cell differentiation. Anti-PAX5 is useful in differentiating between classic Hodgkin's lymphoma versus multiple myeloma and solitary plasmacytoma, as the protein is expressed in mature and precursor B-cell non-Hodgkin's lymphomas/leukemias while being absent from the other two conditions. Diffuse large B-cell lymphomas are positive for PAX5, with the exception of those with terminal B-cell differentiation, and T-cell neoplasms do not stain with Anti-PAX5.

References

1. Torlakovic E, et al. Am J Surg Pathol. 2002; 26:1343-50. 2. Willenbrock K, et al. Lab Invest. 2002; 82:1103-9. 3. Falini B, et al. Blood. 2002; 99:409-26. 4. Schwering I, et al. Blood. 2003; 101:1505-12.

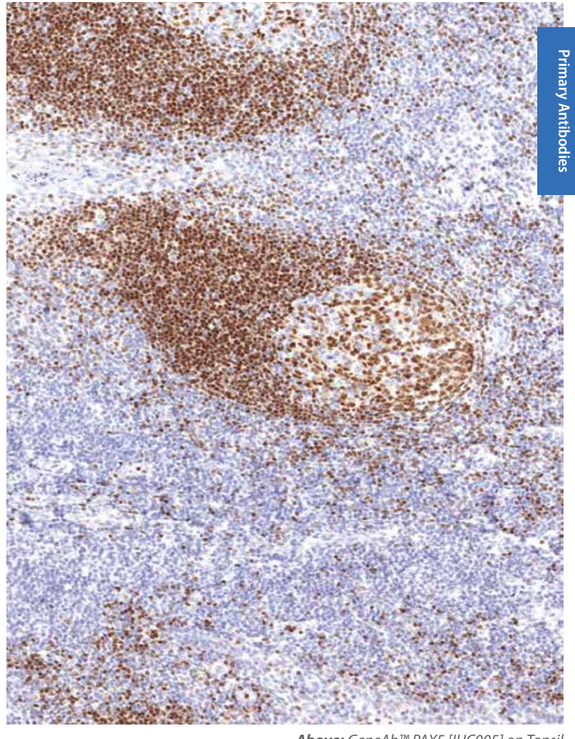
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC005-100	$125
1 ml, Concentrate	IHC005-1	$640
7 ml, Predilute	IHC005-7	$285
25 ml, Predilute	IHC005-25	$740
3 Positive Control Slides	IHC005-PC	$115

Designations

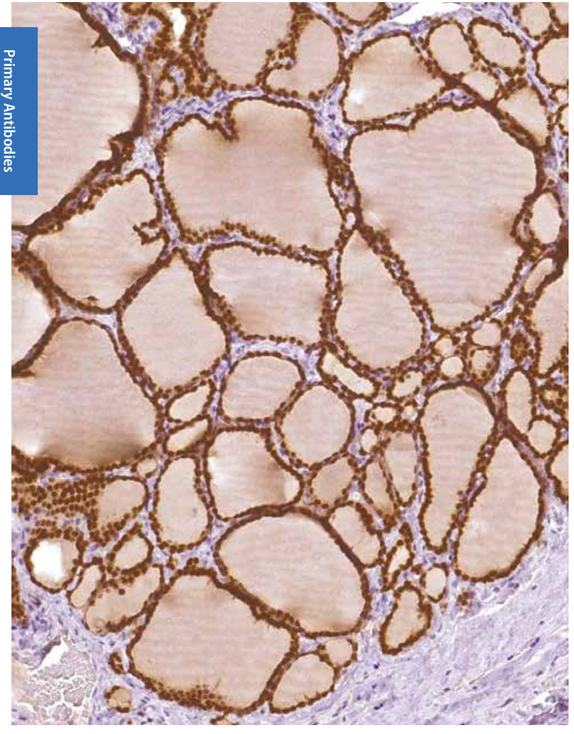
IVD: RUO:



Above: *GeneAb™ PAX5 [IHC005] on Tonsil*

PAX8

Clone: IHC008 | **Source:** Mouse Monoclonal | **Positive Control:** Ovarian Carcinoma (Non-Mucinous Carcinoma), Thyroid Carcinoma, Renal Cell Carcinoma



Above: *GeneAb™ PAX8 [IHC008] on Thyroid Gland*

Description

PAX8 is expressed in simple ovarian inclusion cysts and non-ciliated mucosal cells of the fallopian tubes, but is absent from normal ovarian surface epithelial cells. Mutations in the PAX8 gene are linked to thyroid follicular carcinomas, atypical thyroid adenomas, and thyroid dysgenesis. Reports have associated PAX8 expression with renal carcinoma, nephroblastoma, and seminoma, and have indicated PAX8 as a useful marker for renal epithelial tumours, ovarian cancer, and for differential diagnoses in lung and neck tumours. Anti-PAX8 can be useful in determining the primary site of invasive micropapillary carcinomas of ovary from bladder, lung, and breast, when used in adjunct with a panel of organ-specific markers such as uroplakin, mammaglobin, and TTF-1.

References

1. Tong GX, et al. Mod Pathol. 2009; 22:1218-27. 2. Nonaka D, et al. Mod Pathol. 2008; 21:192-200. 3. Tamara L, et al. Am J Surg Pathol. 2009; 33:1037-41. 4. Nikiforova MN, et al. Am J Surg Pathol. 2002; 26:1016-23. 5. Nonaka D, et al. Am J Surg Pathol. 2008; 32:1566-71. 6. Marques AR, et al. J Clin Endocrinol Metab. 2002; 87:3947-52. 7. Tina DP, et al. J Biol Chem. 2003; 278:3395-402. 8. Bowen NJ, et al. Gynecol Oncol. 2007; 104:331-7. 9. Zhang P, et al. Pathol Int. 2006; 56:240-5.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC008-100	$180
1 ml, Concentrate	IHC008-1	$1,060
7 ml, Predilute	IHC008-7	$270
25 ml, Predilute	IHC008-25	$1,940
3 Positive Control Slides	IHC008-PC	$205

Designations

IVD: RUO:

PD-1

Clone: IHC001 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node

Description

Programmed Death 1 (PD-1) is a member of the CD28/CTLA-4 family of T-cell regulators, expressed as a co-receptor on the surface of activated T-cells, B-cells, and macrophages. New studies have suggested that the PD-1/PD-L1 signaling pathway may be linked to anti-tumour immunity, as PD-L1 has been shown to induce apoptosis of activated T-cells or inhibit activity of cytotoxic T-cells. In comparison to CD10 and Bcl-6, PD-1 is expressed by fewer B-cells and has therefore been considered a more specific and useful diagnostic marker for angioimmunoblastic T-cell lymphoma. Therapies targeted toward the PD-1 receptor have shown remarkable clinical responses in patients with various types of cancer, including non-small-cell lung cancer, melanoma, and renal-cell cancer.

References

1. Dorfman DM, et al. Am J Surg Pathol. 2006; 30:802-10. 2. Hamanishi J, et al. Proc Natl Acad Sci USA. 2007; 104:3360-5. 3. Kobayashi M, et al. J Rheumatol. 2005; 32:2156-63. 4. Konishi J, et al. Clin Cancer Res. 2004; 10:5094-100. 5. Mataki N, et al. Am J Gastroenterol. 2007; 102:302-12. 6. Kim JW, et al. Oncology (Williston Park). 2014; 28:15-28.

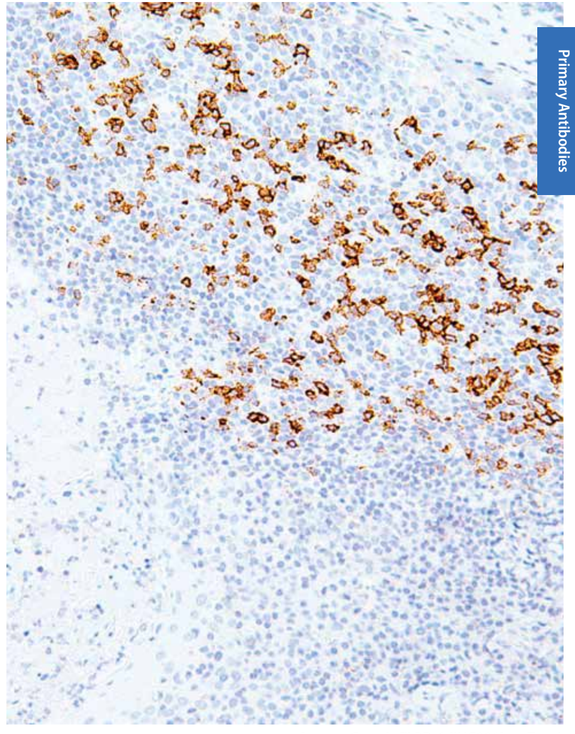
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC001-100	$100
1 ml, Concentrate	IHC001-1	$295
7 ml, Predilute	IHC001-7	$245
3 Positive Control Slides	IHC001-PC	$115

Designations

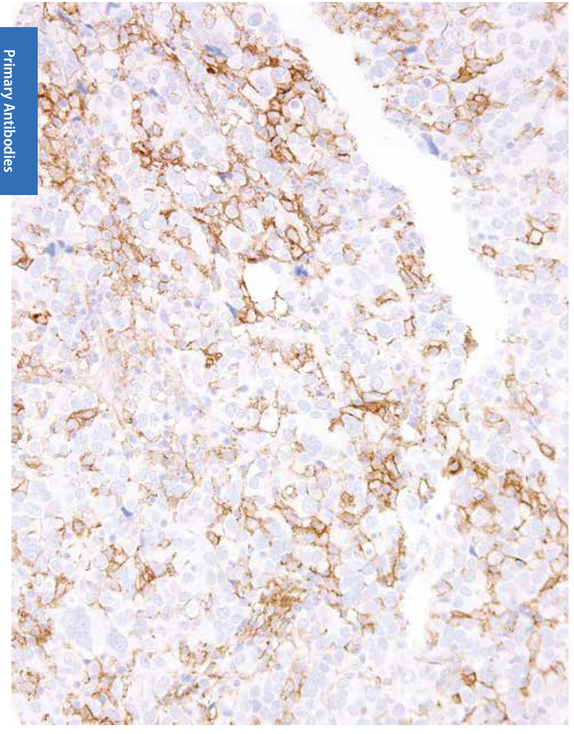
IVD: RUO:



Above: *GeneAb™ PD-1 [IHC001] on Tonsil*

PD-L1

Clone: IHC411 | **Source:** Rabbit Monoclonal | **Positive Control:** Tonsil, Lung Adenocarcinoma



Above: *GeneAb™ PD-L1 [IHC411] on Lung*

Description

Programmed Death-Ligand 1 (PD-L1), CD274, or **B7 Homolog 1 (B7-H1),** is a transmembrane protein involved in suppressing the immune system and rendering tumour cells resistant to lysis through binding of the Programmed Death-1 (PD-1) receptor. Overexpression of PD-L1 may allow cancer cells to evade the actions of the host immune system. In renal cell carcinoma, upregulation of PD-L1 has been linked to increased tumour aggressiveness and risk of death. When considered in adjunct with CD8+ tumour-infiltrating lymphocyte density, expression levels of PD-L1 may be a useful predictor of multiple cancer types, including stage III non-small-cell lung cancer, hormone receptor negative breast cancer, and sentinel lymph node melanoma.

References

1. Ostrand-Rosenberg S, et al. J Immunol. 2014; 193:3835-41. 2. Tokito T, et al. Eur J Cancer. 2016; 55:7-14. 3. Park IH, et al. Clin Breast Cancer. 2016; 16:51-8. 4. Kakavand H, et al. Mod Pathol. 2015; 28: 1535-44. 5. Xia B, et al. Immunotherapy. 2016; 8:279-98. 6. Patel SP, et al. Mol Cancer Ther. 2015; 14:847-56. 7. Singh BP, et al. Cancers (Basel). 2016; 8. 8. Chemnitz JM, et al. J Immunol. 2004; 173:945–54. 9. Thompson RH, et al. Proc Natl Acad Sci USA. 2004; 101:17174–9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC411-100	$125
1 ml, Concentrate	IHC411-1	$570
7 ml, Predilute	IHC411-7	$285
3 Positive Control Slides	IHC411-PC	$150

Designations

IVD: RUO:

Perforin

Clone: IHC646 | **Source:** Mouse Monoclonal | **Positive Control:** Spleen

Description

Perforin, a pore-forming protein found in the granules of cytotoxic T-lymphocytes and natural killer cells, functions to enable granzymes to enter the target cells and activate apoptosis. Perforin expression is upregulated in activated CD8+ T-cells, and these cells have been identified to have a major influence in Th1-associated inflammatory skin diseases. It has been suggested that perforin plays a role in alloimmunity, being involved in both the cytolytic process of rejection as well as downregulation of the T-cell mediated responses associated with the alloimmune response. Perforin-mediated cytotoxicity has also been linked to a number of autoimmune diseases.

References

1. Chu PG, et al. Ann Diagn Pathol. 1999; 3:104-33. 2. Bittmann I, et al. Virchows Arch. 2004; 445:375-81. 3. d'Amore ES, et al. Pediatr Dev Pathol. 2007; 10:181-91. 4. Tschopp J, et al. Nature. 1986; 322:831-4.

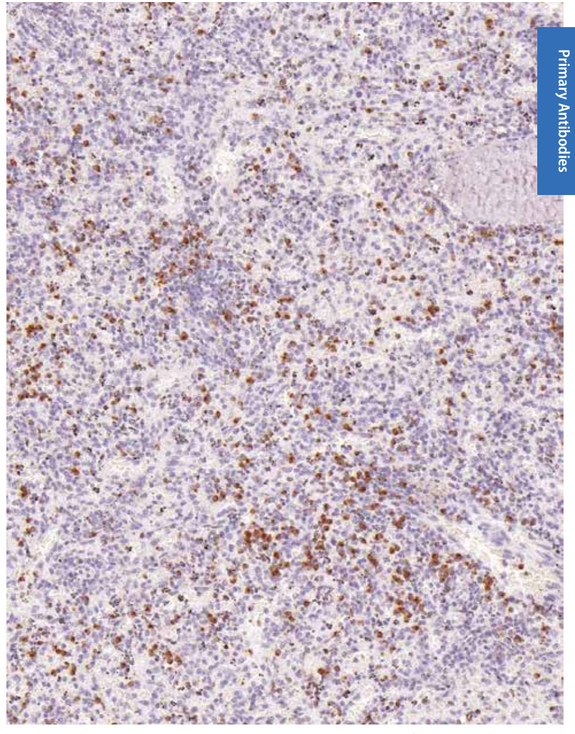
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC646-100	$145
1 ml, Concentrate	IHC646-1	$635
7 ml, Predilute	IHC646-7	$350
3 Positive Control Slides	IHC646-PC	$160

Designations

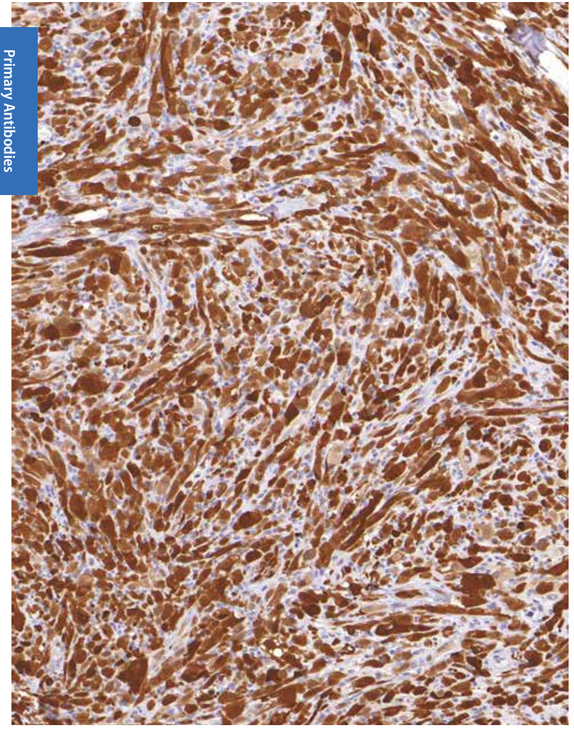
IVD: RUO:



Above: *GeneAb™ Perforin [IHC646] on Spleen*

PGP 9.5

Clone: IHC647 | **Source:** Mouse Monoclonal | **Positive Control:** Nerve Tissue



Above: *GeneAb™ PGP 9.5 [IHC647] on Glioma*

Description

Protein Gene Product 9.5 (PGP 9.5), also known as **Ubiquitin Carboxyl-terminal Hydrolase-1 (UCHL-1),** is a protein expressed in neurons and neuroendocrine cells, as well as in distal renal tubular epithelium, spermatogonia, Leydig cells, oocytes, melanocytes, prostatic secretory epithelium, ejaculatory duct cells, epididymis, mammary epithelial cells, Merkel cells, and dermal fibroblasts. PGP 9.5 is an immunohistochemical marker for cellular neurothekeoma, a benign lesion that is typically confined to the skin and superficial dermis. Anti-PGP 9.5 is also used to stain mesenchymal neoplasms, and tumours of neuroendocrine and neuroectodermal origin.

References

1. Wang GY, et al. Pathology. 2017; 49:44-9. 2. Kasprzak A, et al. Pol J Pathol. 2007; 58:23-33. 3. Campbell LK, et al. Mod Pathol. 2003; 16:963-9. 4. Bassotti G, et al. J Clin Pathol. 2005; 58:973-7. 5. Mahalingam M, et al. J Cutan Pathol. 2001; 28:282-6. 6. Mahalingam M, et al. J Cutan Pathol. 2006; 33:51-6.

Reference Panels

	pg.
Gastrointestinal (GI)	283
Neuropathology	299
Soft Tissue	302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC647-100	$325
1 ml, Concentrate	IHC647-1	$1,700
7 ml, Predilute	IHC647-7	$980
3 Positive Control Slides	IHC647-PC	$520

Designations

IVD: RUO:

Phosphohistone H3 (PHH3)

Clone: IHC648 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Phosphohistone H3 (PHH3) is a histone protein involved in forming the major protein structure of chromatin in eukaryotic cells. Anti-Phosphohistone H3 (PHH3) has been shown to be specific for the core protein histone H3 only when phosphorylated at serine 10 or serine 28, deeming PHH3 useful as a mitotic marker for differentiating mitotic figures from apoptotic bodies and karyorrhectic debris, since phosphorylation on histone H3 is not detected during apoptosis. Phosphohistone H3 may therefore be useful for diagnosis of tumour grades, especially in central nervous system, skin, gynecological, soft tissue, and gastrointestinal stromal tumours. Immunohistochemical staining with Anti-PHH3 has also been considered highly useful in the prognosis of breast cancer, melanoma, and meningiomas.

References

1. Ladstein RG, et al. J Invest Dermatol. 2012; 132:1247-52. 2. Jannink I, et al. Hum Pathol. 1995; 26:1086-92. 3. Yadav KS, et al. J Contemp Dent Pract. 2012; 13:339-44. 4. Thareja S, et al. Am J Dermatopathol. 2014; 36:64-7. 5. Ikenberg K, et al. J Cutan Pathol. 2012; 39:324-30. 6. Casper DJ, et al. Am J Dermatopathol. 2010; 32:650-4.

Reference Panels

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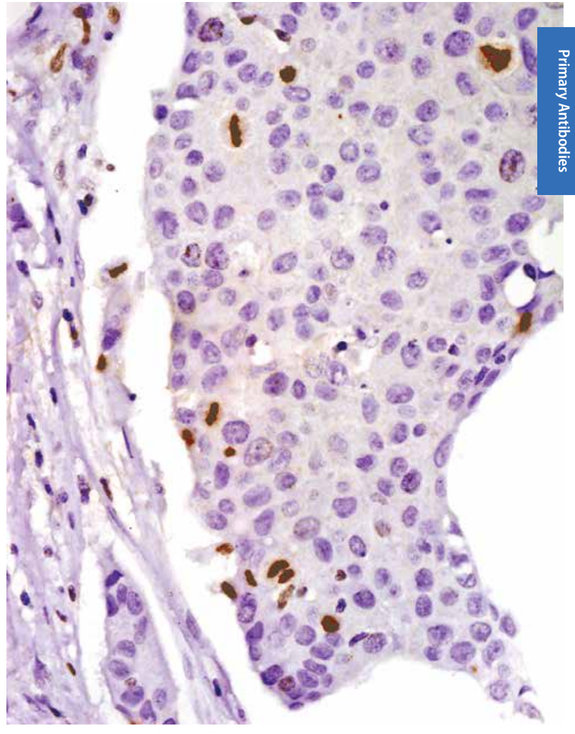
Breast/Gynecological	277

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC648-100	$100
1 ml, Concentrate	IHC648-1	$385
7 ml, Predilute	IHC648-7	$195
25 ml, Predilute	IHC648-25	$1,210
3 Positive Control Slides	IHC648-PC	$100

Designations

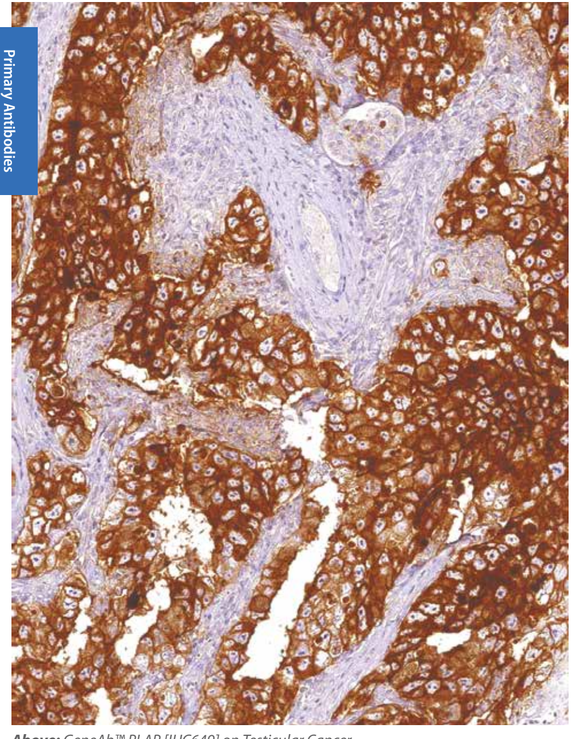
IVD: RUO:



Above: *GeneAb™ Phosphohistone H3 (PHH3) [IHC648] on Breast Cancer*

PLAP

Clone: IHC649 | **Source:** Mouse Monoclonal | **Positive Control:** Placenta



Above: *GeneAb™ PLAP [IHC649] on Testicular Cancer*

Description

Placental Alkaline Phosphatase (PLAP) is an enzyme produced by primordial germ cells and syncytiotrophoblasts found in normal mature human placenta. PLAP is useful for identifying seminomas of testis, gestational trophoblastic disease, and ovarian carcinomas. Anti-PLAP is also useful in differentiating germ cell tumours from other neoplasms, and may react with somatic neoplasms such as breast, gastrointestinal, prostatic, and urinary cancers. PLAP has also been indicated as a potential myogenic marker for identifying soft tissue tumours.

References

1. Kam W, et al. Proc Natl Acad Sci U S A. 1986; 82: 8715-9. 2. Suster S, et al. Hum Pathol. 1998; 29:737-42. 3. Bailey D, et al. Mod Pathol. 1991; 4:167-71. 4. Goldsmith JD, et al. Am J Surg Pathol. 2002; 26:1627-33. 5. Gao Y, et al. Int J Clin Exp Pathol. 2014; 7:6965-72. 6. Burke AP, et al. Hum Pathol. 1988; 19:663-70. 7. Manivel JC, et al. Am J Surg Pathol. 1987; 11:21-9. 8. Wick MR, et al. Hum Pathol. 1987; 18:946-54. 9. Saad RS, et al. Appl Immunohistochem Mol Morphol. 2003; 11:107-12. 10. Lösch A, et al. Acta Obstet Gynecol Scand. 1996; 75:753-6. 11. Paiva J, et al. Am J Pathol. 1984; 111:156-65. 12. Henthorn PS, et al. Proc Natl Acad Sci U S A. 1986; 83:5597-601. 13. Jacobsen GK, et al. Acta Path Microb Immuno Scand Sect A. 1984; 92:323-9.

Reference Panels

pg.

- Genitourinary (GU)..... 284

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC649-100	$110
1 ml, Concentrate	IHC649-1	$435
7 ml, Predilute	IHC649-7	$185
3 Positive Control Slides	IHC649-PC	$115

Designations

IVD: RUO:

PMS2

Clone: IHC412 | **Source:** Mouse Monoclonal | **Positive Control:** Colon

Description

Postmeiotic Segregation Increased 2 (PMS2) is a DNA repair protein involved in mismatch repair. Mutations and deficiencies in the PMS2 gene have been linked to microsatellite instability and malignancies such as hereditary nonpolyposis colorectal cancer and endometrial cancer. Expression levels of the PMS2 protein may be useful as a screening tool for Lynch syndrome after a colorectal cancer diagnosis. Anti-PMS2 is recommended to be used as part of a panel along with antibodies against MSH1, MSH2, and MLH6.

References

1. Cohn DE, et al. Int J Gynecol Cancer. 2008; 18:136-40. 2. Modica I, et al. Am J Surg Pathol. 2007; 31:744-51. 3. Sordet C, et al. Joint Bone Spine. 2006; 73:646-54. 4. Balogh GA, et al. Int J Mol Med. 2006; 18:853-7. 5. Halvarsson B, et al. Fam Cancer. 2006; 5:353-8. 6. Gologan A, et al. Clin Lab Med. 2005; 25:179-96. 7. Lagerstedt Robinson K, et al. J Natl Cancer Inst. 2007; 99:291-9. 8. Hendriks YM, et al. Gastroenterology. 2006; 130:312-22. 9. Truninger K, et al. Gastroenterology. 2005; 128:1160-71. 10. Hampel H, et al. N Engl J Med. 2005; 352:1851-60. 11. Warusavitarne J, et al. Int J Colorectal Dis. 2007; 22:739-48. 12. Gill S, et al. Clin Cancer Res. 2005; 11:6466-71. 13. Modica I, et al. Am J Surg Pathol. 2007; 31:744-51. 14. Shia J, et al. Am J Surg Pathol. 2009; 33:1639-45. 15. Kets CM, et al. Mod Pathol. 2006; 19:1624-30.

Reference Panels

pg.

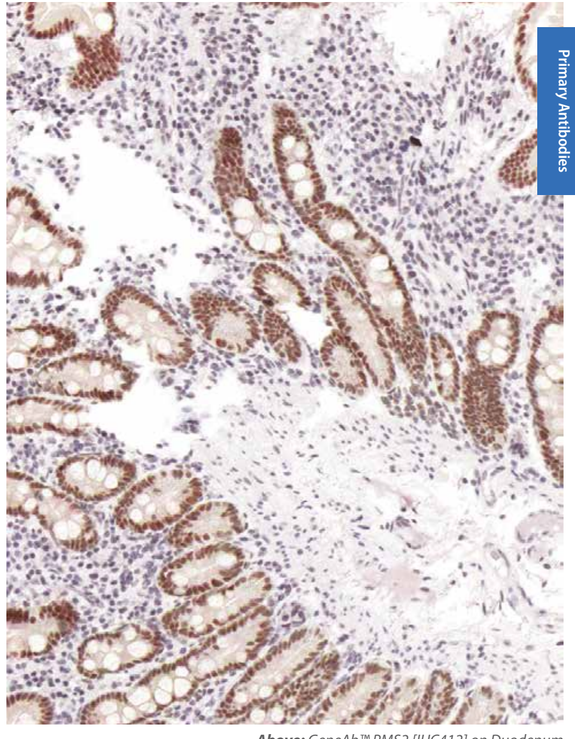
- Gastrointestinal (GI).....283

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC412-100	$230
1 ml, Concentrate	IHC412-1	$995
7 ml, Predilute	IHC412-7	$185
25 ml, Predilute	IHC412-25	$1,185
3 Positive Control Slides	IHC412-PC	$160

Designations

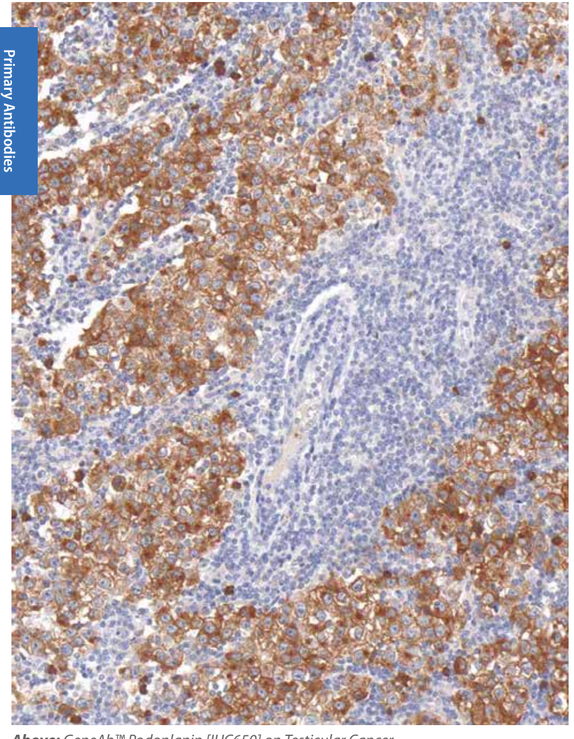
IVD: RUO:



Above: *GeneAb™ PMS2 [IHC412] on Duodenum*

Podoplanin

Clone: IHC650 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ Podoplanin [IHC650] on Testicular Cancer*

Description

Podoplanin is a transmembrane mucoprotein specifically expressed in the endothelium of lymphatic capillaries, while remaining absent from the blood vasculature. The protein is co-localized with VEGFR3/FLT4 in normal skin and kidney. Anti-Podoplanin is useful in the identification of lymphangiomas, Kaposi's sarcomas, epithelioid mesotheliomas, hemangioblastomas, seminomas, and some angiosarcomas that likely have lymphatic differentiation.

References

1. Ordonez NG. Adv Anat Pathol. 2006; 13:83-8. 2. Ordonez NG. Hum Pathol. 2005; 36:372-80. 3. Niakosari F, et al. Arch Dermatol. 2005; 141:440-4. 4. Galambos C, et al. Pediatr Dev Pathol. 2005; 8:191-9. 5. Fukunaga M. Histopathology. 2005; 46:396-402. 6. Fogt F, et al. Oncol Rep. 2004; 11:47-50. 7. Kahn HJ, et al. Mod Pathol. 2002; 15:434-40. 8. Franke FE, et al. J Cutan Pathol. 2004; 31:362-7. 9. Kalof AN,et al. Adv Anat Pathol. 2009; 16:62-4. 10. Chu AY, et al. Mod Pathol. 2005; 18:105-10. 11. Iczkowski KA, et al. Hum Pathol. 2008; 39:275-81.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC650-100	$145
1 ml, Concentrate	IHC650-1	$815
7 ml, Predilute	IHC650-7	$440
3 Positive Control Slides	IHC650-PC	$115

Designations

IVD: RUO:

Progesterone Receptor

Clone: IHC651 | **Source:** Mouse Monoclonal | **Positive Control:** Breast, Breast Carcinoma

Description

Progesterone Receptor (PR), also known as **NR3C3 (Nuclear Receptor Subfamily 3, Group C, Member 3),** is an intracellular steroid receptor which mediates the physiological effects of progesterone, a female sex hormone involved in the menstrual cycle, pregnancy, and embryogenesis. Progesterone receptor expression has been linked to the prediction of prognosis in breast cancer, as well as associated responses to endocrine therapy. The progesterone receptor has also been linked to risk for ovarian cancer.

References

1. Terry KL, et al. Am J Epidemiol. 2005; 161:442-51. 2. Qiu J, et al. Am J Clin Pathol. 2010; 134:813-9. 3. Arihito K, et al. Am J Clin Pathol. 2007; 127:356-65. 4. Press M, et al. Steroids. 2002; 67:799-813. 5. Mote P, et al. J Clin Pathol. 2001; 54:624-30. 6. Bevitt D, et al. J Pathol. 1997; 183:228-32. 7. Kell DL, et al. Appl Immunohistochem. 1993; 1:275-81. 8. Leong ASY, et al. Appl Immunohistochem. 1993; 1:282-8. 9. Tesch M, et al. Am J Clin Pathol. 1993; 99:8-12. 10. Clarke CL, et al. Endocrinology. 1987; 121:1123-32. 11. Feil PD, et al. Endocrinology. 1998; 123:2506-13.

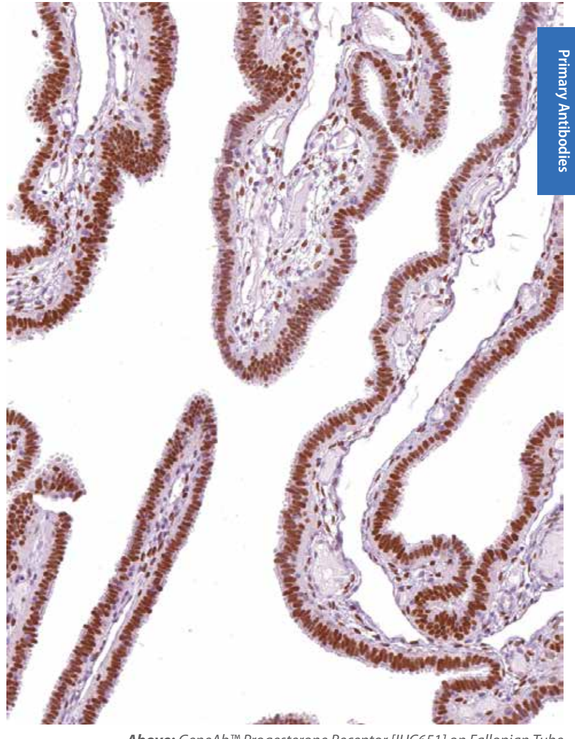
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC651-100	$200
1 ml, Concentrate	IHC651-1	$910
7 ml, Predilute	IHC651-7	$490
25 ml, Predilute	IHC651-25	$1,545
3 Positive Control Slides	IHC651-PC	$160

Designations

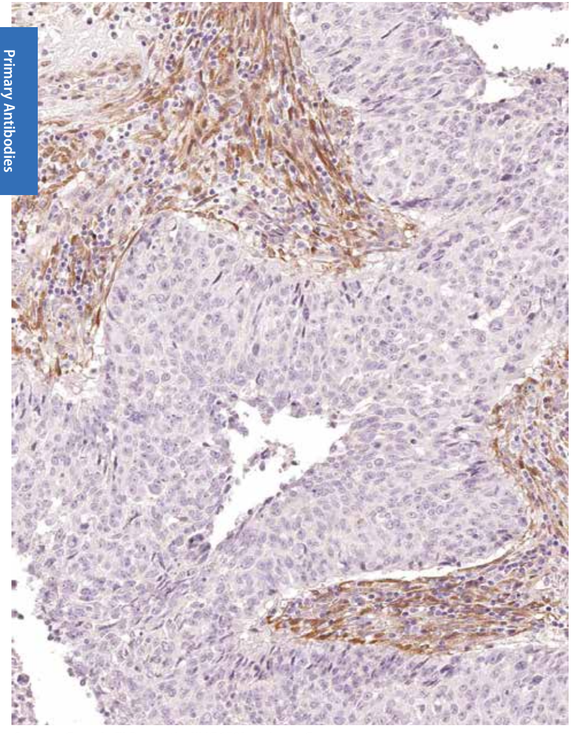
IVD: RUO:



Above: *GeneAb™ Progesterone Receptor [IHC651] on Fallopian Tube*

Prolactin

Clone: IHC652 | **Source:** Mouse Monoclonal | **Positive Control:** Pituitary



Above: *GeneAb™ Prolactin [IHC652] on Lung Cancer*

Description

Prolactin (PRL) is a peptide hormone synthesized and secreted by lactotroph cells in the adenohypophysis (anterior pituitary gland). PRL plays a role in a number of processes including cell growth, reproduction, and immune function, with its primary function being associated with lactation. Anti-Prolactin reacts with lactotroph cells, and is useful in classification of pituitary tumours and the study of pituitary disease.

References

1. Asa SL, et al. Arch Pathol Lab Med. 1982; 106:360-3. 2. Duello TM, et al. Amer J Anat. 1980; 158:463-9. 3. Minniti G, et al. Surg Neurol. 2002; 57:99-103. 4. Popadic A, et al. Surg Neurol. 1999; 51:47-54. 5. Nevalainen MT, et al. J Clin Invest. 1997; 99:618-2.

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC652-100	$125
1 ml, Concentrate	IHC652-1	$555
7 ml, Predilute	IHC652-7	$255
3 Positive Control Slides	IHC652-PC	$160

Designations

IVD: RUO:

Prostate Cocktail

Clone: IHC653 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate

Description

Prostate Cocktail is a combination of Cytokeratin 1, Cytokeratin 5, Cytokeratin 10, Cytokeratin 14, and p63. These four high molecular weight cytokeratins are found in basal epithelia of the prostate gland. p63 is a tumour suppressor protein found in basal epithelial nuclei of the normal prostate, while being negative in malignant tumours associated with the prostate gland. It is therefore useful in differentiating between benign and malignant prostate lesions.

References

1. Signoretti S, et al. Am J Pathol. 2000; 157:1769-75. 2. Tacha DE, et al. Appl Immunohistochem Mol Morphol. 2004; 12:75-8. 3. Beach R, et al. Am J Surg Pathol. 2002; 26:1588-96. 4. Luo J, et al. Cancer Res. 2002; 62:2220-6. 5. Wang Y, et al. Differentiation. 2001; 68:270-9. 6. Tokar EJ, et al. Differentiation. 2005; 73:463-73. 7. Collins AT, et al. J Cell Sci. 2001; 114:3865-72. 8. Moll R, et al. Cell. 1982; 31:11-24. 9. Yang Y, et al. Am J Pathol. 1997; 150:693-704. 10. Yang A, et al. Mol Cell. 1998; 2:305-16.

Reference Panels

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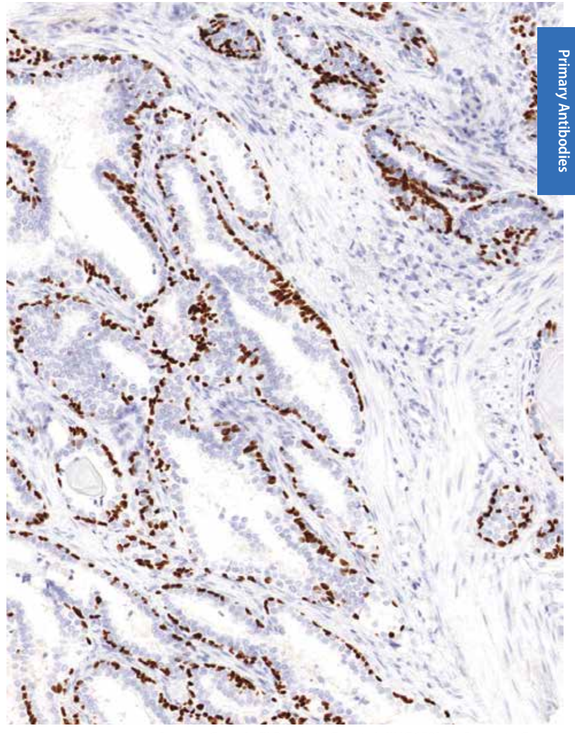
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC653-100	$250
1 ml, Concentrate	IHC653-1	$1,310
7 ml, Predilute	IHC653-7	$750
3 Positive Control Slides	IHC653-PC	$400

Designations

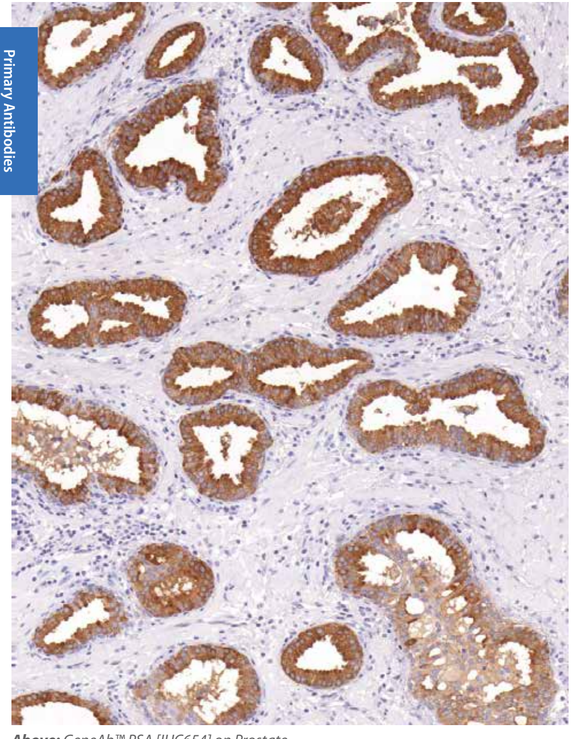
IVD: RUO:



Above: *GeneAb™ Prostate Cocktail [IHC653] on Prostate Cancer*

PSA

Clone: IHC654 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate, Prostate Carcinoma



***Above:** GeneAb™ PSA [IHC654] on Prostate*

Description

Prostate-Specific Antigen (PSA) is a serine protease of the kallikrein family that is produced by the prostate epithelium and epithelial lining of the periurethral glands. Although considered prostate-specific, PSA has also been detected in breast tissue, breast tumours, endometrium, adrenal neoplasms, and renal cell carcinomas. Anti-PSA can be used for differentiating high-grade prostate adenocarcinoma from high-grade urothelial carcinoma, as well as for determining the prostatic origin of carcinomas in non-prostate tissues. Anti-PSA recognizes primary and metastatic prostatic neoplasms, but not tumours of nonprostatic origin, and can be useful as an aid to confirm prostatic acinar cell origin in primary and metastatic carcinomas.

References

1. Polascik TJ, et al. J Urol. 1999; 162:293-306. 2. Stenman UH, et al. Semin Cancer Biol. 1999; 9:83-93. 3. Alanen KA, et al. Path Res Pract. 1996; 192:233-7. 4. Varma M, et al. Histopathology. 2005; 47:1-16. 5. Gallee MP, et al. Prostate. 1986; 9:33-45. 6. Hadji M, et al. Cancer. 1981; 48:1229-32. 7. Tazawa K, et. al. Path Intl. 1999; 49:500-5. 8. Siddiqui IA, et. al. Carcinogenesis. 2006; 27:833-9. 9. Ljung G, et. al. Prostate. 1997; 31:91-7.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC654-100	$105
1 ml, Concentrate	IHC654-1	$345
7 ml, Predilute	IHC654-7	$205
3 Positive Control Slides	IHC654-PC	$115

Designations

IVD: RUO:

PSAP

Clone: IHC655 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate, Prostate Adenocarcinoma

Description

Prostatic Specific Acid Phosphatase (PSAP) is a prostatic enzyme found in the glandular epithelium of the prostate. PSAP levels are elevated in hyperplastic prostate and prostate carcinoma, with the highest levels being detected in metastasized prostate cancer. Moderate overexpression of PSAP is also characteristic of diseases of the bone (such as Paget's disease or hyperparathyroidism), diseases of blood cells (such as sickle-cell disease), multiple myeloma, or lysosomal storage diseases (such as Gaucher's disease). PSAP is considered more sensitive, yet less specific, than PSA, however Anti-PSAP can act as a useful complement to Anti-PSA under suitable clinical contexts.

References

1. Ansari MA, et al. Am J Clin Path. 1981; 76:94-8. 2. Nadji M, et al. Ann N Y Acad Sci. 1982; 390:133-41. 3. Kimura N, et al. Virchows Arch A Pathol Anat Histopathol. 1986; 410:247-51. 4. Kidwai N, et al. Breast Cancer Res. 2004; 6:R18-23. 5. Kuroda N, et al. Pathol Int. 1999; 49:457-61. 6. Elgamal AA, et al. Urology. 1994; 44:84-90. 7. Gatalica Z, et al. Appl Immunohistochem Mol Morphol. 2000; 8:158-61. 8. Genega EM, et al. Mod Pathol. 2000; 13:1186-91. 9. Green LK, et al. Hum Pathol. 1991; 22:242-6. 10. Epstein JI. Urol Clin North Am. 1993; 20:757-70. 11. van Krieken JH. Am J Surg Pathol. 1993; 17:410-4.

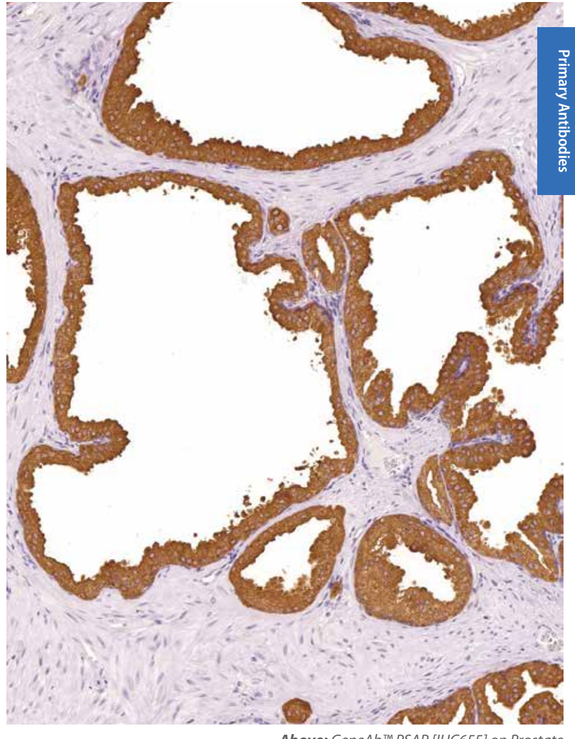
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC655-100	$135
1 ml, Concentrate	IHC655-1	$305
7 ml, Predilute	IHC655-7	$250
3 Positive Control Slides	IHC655-PC	$115

Designations

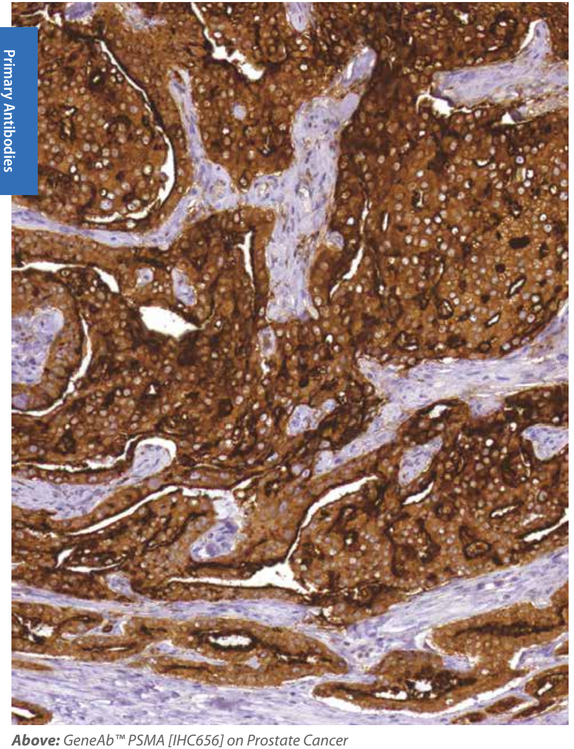
IVD: RUO:



***Above:** GeneAb™ PSAP [IHC655] on Prostate*

PSMA

Clone: IHC656 | **Source:** Mouse Monoclonal | **Positive Control:** Prostate



Above: *GeneAb™ PSMA [IHC656] on Prostate Cancer*

Description

Prostate-Specific Membrane Antigen (PSMA), also known as **Folate Hydrolase 1 (FOLH1),** is a type II transmembrane glycoprotein that acts as a prostate-specific integral membrane folate hydrolase and as a carboxypeptidase. PSMA is a useful marker for prostate tumours, both in diagnosis and prognosis. Although considered prostate-specific, PSMA expression has also been noted in the small intestine and in the brain. In the intestine, altered PSMA may be linked with impaired intestinal absorption of dietary folates and hyperhomocysteinemia. In the brain, the PSMA enzyme may be associated with glutamate cytotoxicity and associated pathological conditions. PSMA has been identified as a possible therapeutic target for prostate cancer.

References

1. Schülke N, et al. Proc Natl Acad Sci U S A. 2003; 100:12590-5. 2. Elsasser-Beile U, et al. JNM. 2009; 50:606-11. 3. Henry MD, et al. Cancer Res. 2004; 64:7995-8001.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC656-100	$165
1 ml, Concentrate	IHC656-1	$635
7 ml, Predilute	IHC656-7	$225
3 Positive Control Slides	IHC656-PC	$120

Designations

IVD: RUO:

Renal Cell Carcinoma

Clone: IHC657 | **Source:** Mouse Monoclonal | **Positive Control:** Renal Cell Carcinoma

Description

Renal Cell Carcinoma (RCC), also known as a gurnistical tumour, is a cancer of the kidney that arises from the proximal renal tubule; it is the most prevalent type of kidney cancer in adults. Anti-Renal Cell Carcinoma detects a glycoprotein in the brush border of the proximal renal tubule, and is a useful tool for diagnosis of primary renal cell carcinomas and metastatic renal cell carcinomas. Anti-RCC has also been used to label parathyroid adenoma and some breast carcinomas. However, it does not react with nephroblastoma, oncocytoma, mesoblastic nephroma, transitional cell carcinoma, or angiomyolipoma.

References

1. McGregor DK, et al. Am J Surg Pathol. 2001; 25:1485-92. 2. Avery AK, et al. Am J Surg Pathol. 2000; 24:203-10. 3. Gokden N, et al. Appl Immunohistochem Mol Morphol. 2003; 11:116-9.

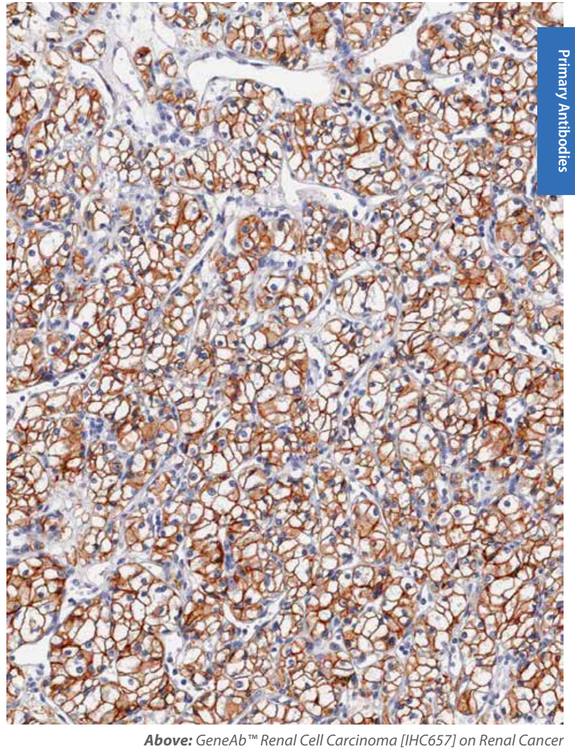
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC657-100	$130
1 ml, Concentrate	IHC657-1	$400
7 ml, Predilute	IHC657-7	$350
25 ml, Predilute	IHC657-25	$1,060
3 Positive Control Slides	IHC657-PC	$160

Designations

IVD: RUO:

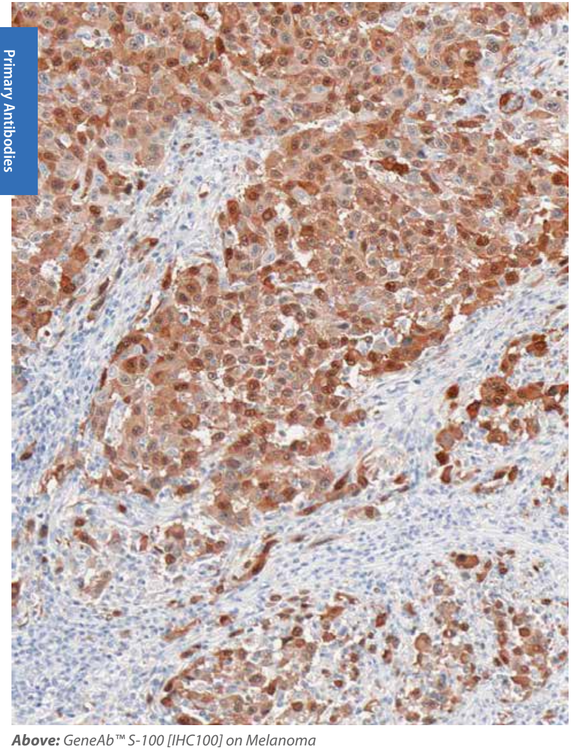


Above: *GeneAb™ Renal Cell Carcinoma [IHC657] on Renal Cancer*

GeneAb™

S-100

Clone: IHC100 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma



Above: *GeneAb™ S-100 [IHC100] on Melanoma*

Description

S-100 is a low-molecular weight protein found in Schwann cells, melanocytes, glial cells, histiocytes, lipocytes, skeletal and cardiac muscle, chondrocytes, adipocytes, myoepithelial cells, macrophages, Langerhans cells, dendritic cells, and keratinocytes. S-100 is a useful marker for Schwann cell-derived tumours and a number of well-differentiated tumours of the salivary gland, adipose and cartilaginous tissue. Anti-S-100 is used to detect melanomas, histiocytosis X, malignant peripheral nerve sheath tumours, and clear cell sarcomas.

References

1. Nakajima T, et al. Am J Surg Pathol. 1982; 6:715-27. 2. Kuhn HJ, et al. Am J Clin Pathol. 1983; 79:341-7. 3. Monda L, et al. Hum Pathol. 1985; 16:287-93. 4. Yaziji H, et al. Int J Surg Pathol. 2003; 11:11-5. 5. Patel P, et al. J Am Acad Dermatol. 2002; 46:264-70. 6. Patel P, et al. J Am Acad Dermatol. 2002; 46:264-70. 7. Morrison CD, et al. Semin Diagn Pathol. 2000; 17:204-15. 8. McLaren KM, et al. Hum Pathol. 1996; 27:633-6.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC100-100	$135
1 ml, Concentrate	IHC100-1	$375
7 ml, Predilute	IHC100-7	$225
25 ml, Predilute	IHC100-25	$645
3 Positive Control Slides	IHC100-PC	$115

Designations

IVD: RUO:

GeneAb™

S100P

Clone: IHC658 | **Source:** Mouse Monoclonal | **Positive Control:** Pancreatic Ductal Adenocarcinoma, Urothelial Carcinoma, Placenta

Description

S100 Calcium Binding Protein P (S100P) is involved in regulation of a number of cellular processes, including cell cycle progression and differentiation. S100P is a useful marker for breast, colon, prostate, pancreatic, and lung carcinomas, and has been reported as a potential predictor of distant metastasis and poor survival in non-small cell lung carcinomas. Anti-S100P is utilized in detection of adenocarcinomas of the pancreas and bile ducts, as well as intraductal papillary mucinous neoplasms. When used as part of a panel, Anti-S100P can be helpful in distinguishing adenocarcinoma from reactive epithelial changes on challenging bile duct biopsies. S100P may be used to help distinguish urothelial carcinomas from other genitourinary neoplasms.

References

1. Esheba GE, et al. Am J Surg Pathol. 2009; 33:347-53. 2. Chuang AY, et al. Am J Surg Pathol. 2007; 31:1246-55. 3. Higgins JP, et al. Am J Surg Pathol. 2007; 31:673-80. 4. Gibadulinova A, et al. Amino Acids. 2011; 41:885-92. 5. Lin F, et al. Am J Surg Pathol. 2008; 32:78-91. 6. Deng HB, et al. Am J Clin Pathol. 2008; 129:81-8. 7. Crnogorac-Jurcevic T, et al. J Pathol. 2003; 201:63-74. 8. Nakata K, et al. Hum Pathol. 2010; 41:824-31. 9. Higgins JP, et al. Am J Surg Pathol. 2007; 31:673-80.

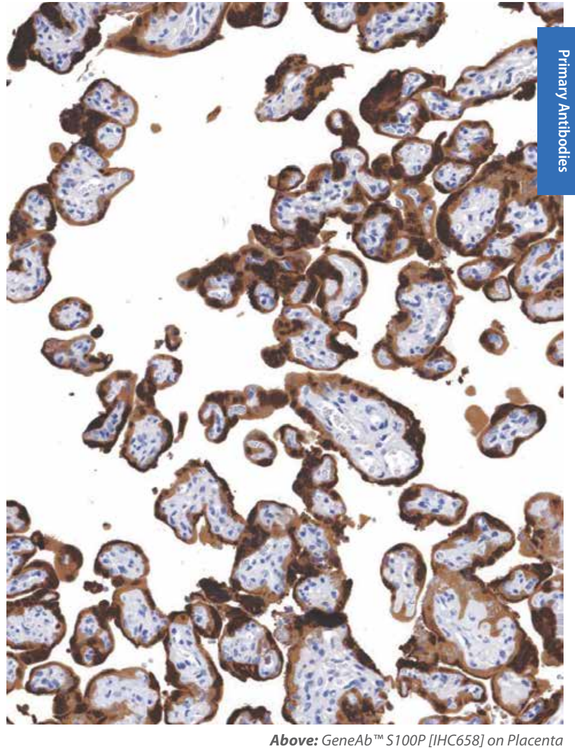
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC658-100	$145
1 ml, Concentrate	IHC658-1	$480
7 ml, Predilute	IHC658-7	$245
3 Positive Control Slides	IHC658-PC	$160

Designations

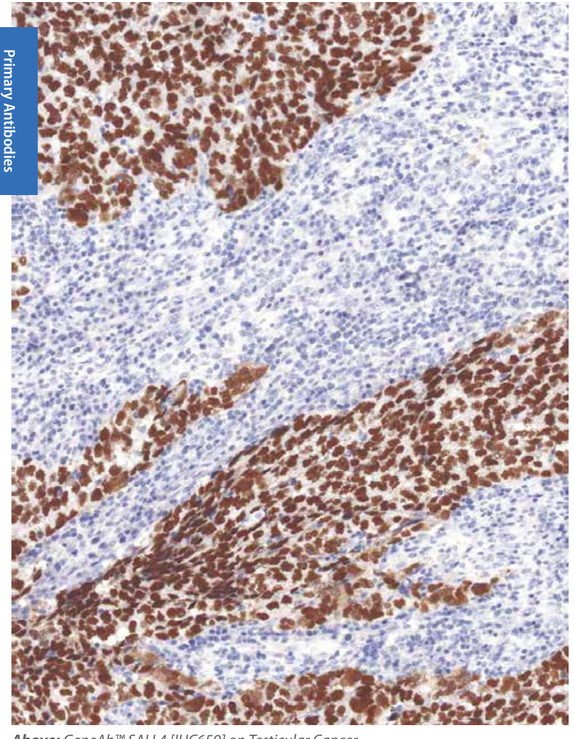
IVD: RUO:



Above: *GeneAb™ S100P [IHC658] on Placenta*

SALL4

Clone: IHC659 | **Source:** Mouse Monoclonal | **Positive Control:** Seminoma, Dysgerminoma



Above: *GeneAb™ SALL4 [IHC659] on Testicular Cancer*

Description

Sal-Like Protein 4 (SALL4) is a zinc finger transcription factor found in germ cells and human blood progenitor cells, with functional involvement in modulating Oct-4 to maintain embryonic stem cell pluripotency. SALL4 is a useful marker for acute myeloid leukemia, B-cell acute lymphocytic leukemia, intratubular germ cell neoplasia, seminomas/dysgerminomas, and yolk sac tumours (both pediatric and postpubertal). Anti-SALL4 is used to detect embryonal carcinomas, hepatocellular carcinoma (HCC), gliomas, ovarian primitive germ-cell tumours, choriocarcinomas, spermatogonia, teratoma, gastric cancer, breast cancer, and lung cancer. Expression of SALL4 is often associated with poor prognosis in HCC, and with metastasis in endometrial cancer, colorectal carcinoma, and esophageal squamous cell carcinoma.

References

1. Ma Y, et al. Blood. 2006; 108:2726-35. 2. de Celis JF, et al. Int J Dev Biol. 2009; 53:1385-98. 3. Kohlhase J, et al. Hum Mutat. 2005; 26:176-83. 4. Miettinen M, et al. Am J Surg Pathol. 2014; 38:410-20. 5. Cao D, et al. Am J Surg Pathol. 2009; 33:1065-77. 6. Zhang X, et al. Cancer Lett. 2015; 357:55-62. 7. Ueno S, et al. Exp Hematol. 2014; 42:307-16.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC659-100	$100
1 ml, Concentrate	IHC659-1	$385
7 ml, Predilute	IHC659-7	$205
3 Positive Control Slides	IHC659-PC	$160

Designations

IVD: RUO:

SATB2

Clone: IHC660 | **Source:** Mouse Monoclonal | **Positive Control:** Colon Adenocarcinoma, Colon

Description

Special AT-Rich Sequence-Binding Protein 2 (SATB2), also known as **DNA-binding protein SATB2,** is a protein involved in transcriptional regulation and chromatin remodeling. It has been identified as a potentially useful marker for neuroendocrine neoplasms or carcinomas of the colon and rectum, as well as for detecting osteoblastic differentiation in benign and malignant mesenchymal tumours. When used in combination with Cytokeratin 20 and Cadherin-17, SATB2 is able to help identify the large majority of colorectal carcinomas. Anti-SATB2 is useful for identifying colorectal carcinomas when working on a tumour of unknown origin, since upper gastrointestinal carcinomas, pancreatic ductal carcinomas, ovarian carcinomas, lung adenocarcinomas, and adenocarcinomas from other origins are all typically negative for SATB2.

References

1. Kikuno R, et al. DNA Res. 1999; 6:197-205. 2. Rosenfeld JA, et al. PLoS One. 2009; 4:e6568. 3. Magnusson K, et al. Am J Surg Pathol. 2011; 35:937-48. 4. Lin F, et al. Arch Pathol Lab Med. 2014; 138:1015-26. 5. Li Z, et al. Mod Pathol. 2013; 26:164A. 6. Conner JR, et al. Histopathology. 2013; 63:182-93. 7. Dragomir A, et al. Am J Clin Pathol. 2014; 141:630-8.

Reference Panels

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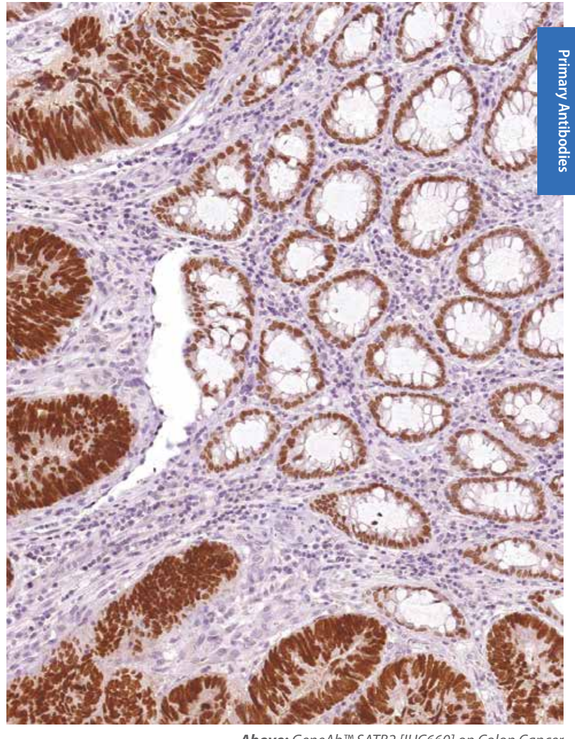
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC660-100	$170
1 ml, Concentrate	IHC660-1	$695
7 ml, Predilute	IHC660-7	$410
3 Positive Control Slides	IHC660-PC	$215

Designations

IVD: RUO:



Above: *GeneAb™ SATB2 [IHC660] on Colon Cancer*

Serotonin

Clone: IHC661 | **Source:** Mouse Monoclonal | **Positive Control:** Appendix, Adrenal Gland, Bronchial Epithelium

Above: *GeneAb™ Serotonin [IHC661] on Colon*

Description

Serotonin, also known as **5-Hydroxytryptamine (5-HT),** is a monoamine neurotransmitter involved in regulation of neural activity and a number of behavioral and neuropsychological processes including cardiovascular function, bladder control, mood, perception, anger, appetite, memory, sexuality, and attention. Serotonin has been linked to fibromyalgia syndrome, a non-articular rheumatic disorder, as well as a variety of neuropsychiatric disorders such as anxiety, depression and schizophrenia.

References

1. Klein R, et al. Psychoneuroendocrinology. 1992; 17:593-8. 2. Berger M, et al. Annu Rev Med. 2009; 60:355-66.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC661-100	$80
1 ml, Concentrate	IHC661-1	$300
7 ml, Predilute	IHC661-7	$180
3 Positive Control Slides	IHC661-PC	$95

Designations

IVD: RUO:

SLC10A1

Clone: IHC662 | **Source:** Mouse Monoclonal | **Positive Control:** Liver

Description

Solute Carrier Family 10 Member 1 (SLC10A1), also known as the **Na^+-Taurocholate Cotransporting Polypeptide (NTCP),** is an integral membrane glycoprotein mainly expressed in the liver. Anti-SLC10A1 can be useful for detecting Hepatitis B and D viruses (HBV and HDV), since this transporter is involved in enterohepatic circulation of bile salts as well as cellular entry of HBV and HDV. The SLC10A1 IVD antibody is a diagnostic tool that aids the detection of mutations in the SLC10A1 gene, which have been linked to increased risk of chronic infection with HBV and, consequently, elevated risk for developing liver cirrhosis and hepatocellular carcinoma.

References

1. Yang J, et al. BMC Cancer. 2016; 16:211. 2. Watashi K, et al. Int J Mol Sci. 2014; 15:2892-905. 3. Vaz FM, et al. Dig Dis. 2017; 35:259-60. 4. Deng M, et al. Exp Ther Med. 2016; 12:3294-300.

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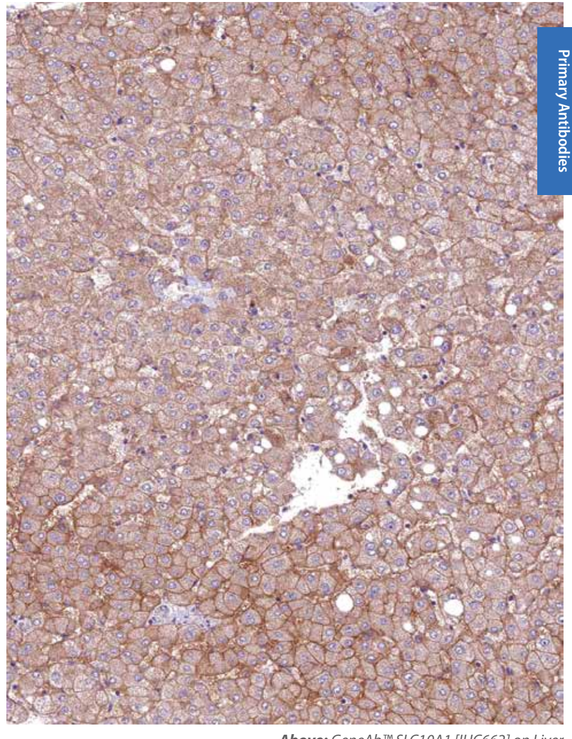
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC662-100	$210
1 ml, Concentrate	IHC662-1	$980
7 ml, Predilute	IHC662-7	$520
3 Positive Control Slides	IHC662-PC	$275

Designations

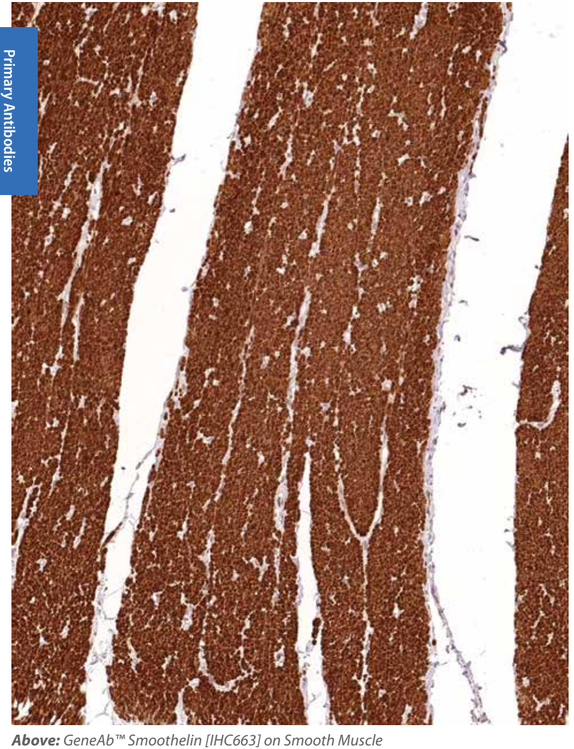
IVD: RUO:



Above: *GeneAb™ SLC10A1 [IHC662] on Liver*

Smoothelin

Clone: IHC663 | **Source:** Mouse Monoclonal | **Positive Control:** Bladder



Above: *GeneAb™ Smoothelin [IHC663] on Smooth Muscle*

Description

Smoothelin is a protein found explicitly in the cytoskeletal component of differentiated (contractile) smooth muscle cells, while being absent from myofibroblasts, myoepithelial cells, and skeletal and cardiac muscle. Anti-Smoothelin is often used as an aid in staging bladder carcinoma, as overexpression of the smoothelin protein is characteristic of muscularis propria invasion, while negative or weak staining is indicative of muscularis mucosae and the non-invasive form of the cancer. Anti-Smoothelin is also useful in differentiating benign smooth muscle tumours from malignant smooth muscle tumours.

References

1. Kramer J, et al. J Mol Med. 1999; 77:294-8. 2. van der Loop FT, et al. J Cell Biol. 1996; 134:401-11. 3. Jimenez RE, et al. Adv Anat Pathol. 2000; 7:13-25. 4. Kuijpers KA, et al. Eur Urol. 2007; 52:1213-21. 5. Paner GP, et al. Am J Surg Pathol. 2009; 33:91-8. 6. Paner GP, et al. Am J Surg Pathol. 2010; 34:792-9. 7. Maake C, et al. J Urol. 2006; 175:1152-7. 8. Council L, et al. Mod Pathol. 2009; 22:639-50. 9. Coco DP, et al. Am J Surg Pathol. 2009; 33:1795-801. 10. Bovio IM, et al. Histopathology. 2010; 56:951-6.

Reference Panels

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Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC663-100	$110
1 ml, Concentrate	IHC663-1	$445
7 ml, Predilute	IHC663-7	$270
3 Positive Control Slides	IHC663-PC	$160

Designations

IVD: RUO:

Somatostatin

Clone: IHC664 | **Source:** Mouse Monoclonal | **Positive Control:** Pancreas

Description

Somatostatin is a peptide hormone that acts in the regulation of endocrine function, neurotransmission, and cell proliferation. It is secreted from cells of the hypothalamus, stomach, intestine, and pancreas, and can also be found in bronchopulmonary endocrine cells, thymic endocrine cells, and thyroid C-cells. Somatostatin is a useful marker for D-cells of pancreatic islets, which are used in the identification of islet cell hyperplasia and associated somatostatinomas. Anti-Somatostatin is also used to detect somatostatin-containing cells in pancreatic tumours and islet cells originating in pancreatic ductules.

References

1. Krejs GJ. Scand J Gastroenterol Suppl. 1986; 119:47-53. 2. Tzaneva MA. Acta Histochem. 2003; 105:191-201. 3. Krejs GJ, et al. N Eng J Med. 1982; 306:580-90. 4. Friesen SR. N Eng J Med. 1982; 306:580-90. 5. Kanavaros P, et al. Histol Histopathol. 1990; 5:325-8. 6. Chejfec G, et al. Ultrastruct Pathol. 1992; 16:537-45. 7. Somers G, et al. Gastroenterology. 1983; 85:1192-8. 8. Erlandsen SL. Williams and Wilkins, Baltimore. 1980; 140-55.

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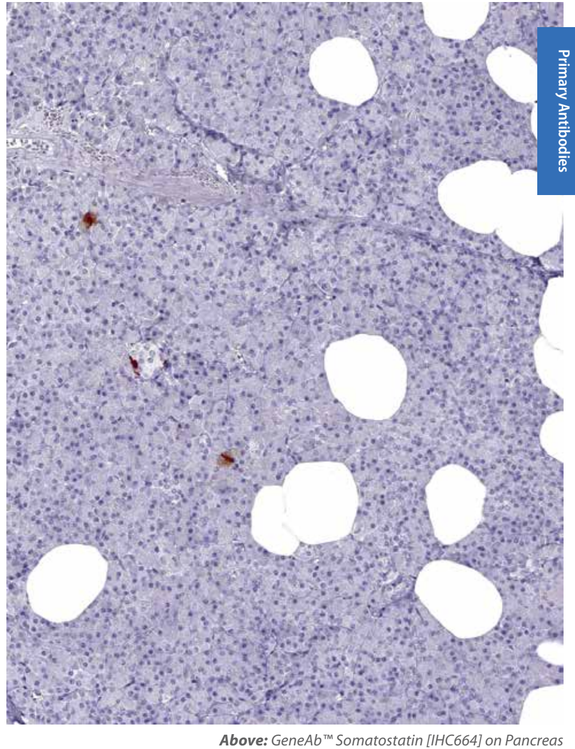
Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC664-100	$125
1 ml, Concentrate	IHC664-1	$480
7 ml, Predilute	IHC664-7	$270
3 Positive Control Slides	IHC664-PC	$115

Designations

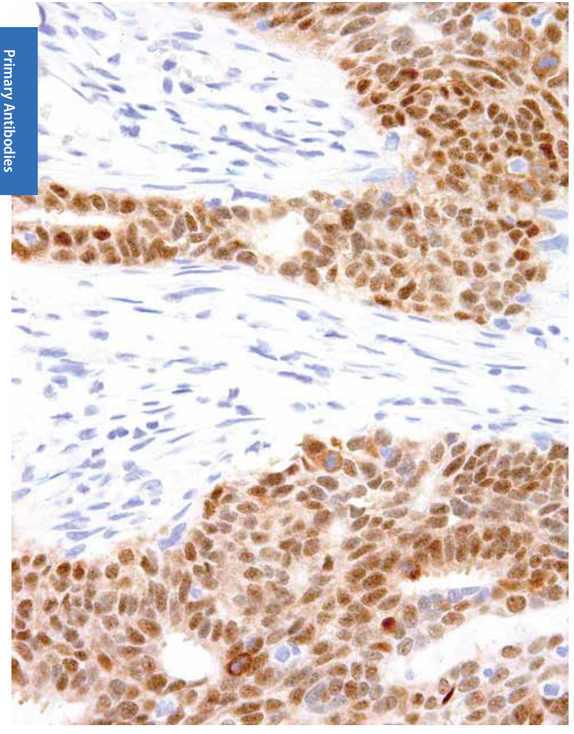
IVD: RUO:



Above: *GeneAb™ Somatostatin [IHC664] on Pancreas*

SOX2

Clone: IHC665 | **Source:** Mouse Monoclonal | **Positive Control:** Lung Squamous Carcinoma



Above: *GeneAb™ SOX2 [IHC665] on Cervix*

Description

SOX2, also known as **SRY (Sex Determining Region Y)-Box 2,** is a transcription factor that acts to regulate pluripotency of undifferentiated embryonic stem cells, and to regulate gene expression in the stomach. This diagnostic grade SOX2 IVD antibody is used to detect melanoma, testicular germ cell tumour, cervical carcinoma, lung cancer, breast cancer with basal cell phenotype, and teratoma of the central nervous system. SOX2 has been reported as a predictor of poor outcome in stage I lung adenocarcinomas. Anti-SOX2 is also used to recognize squamous cell carcinomas of the lung and gastrointestinal tract, and may be useful for detecting embryonal carcinoma.

References

1. Rizzino A, et al. Wiley Interdiscip Rev Syst Biol Med. 2009; 1:228-36. 2. Laga AC, et al. Am J Pathol. 2010; 176:903-13. 3. Ji J, et al. Hum Pathol. 2010; 41:1438-47. 4. Rodriguez-Pinilla SM, et al. Mod Pathol. 2007; 20:474-81. 5. Long KB, et al. Hum Pathol. 2009; 40:1768-73. 6. Sholl LM, et al. Appl Immunohistochem Mol Morphol. 2010; 18:55-61. 7. Tsuta K, et al. J Thorac Oncol. 2011; 6:1190-9. 8. Gopalan A, et al. Mod Pathol. 2009; 22:1066-74.

Reference Panels

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Pulmonary	301

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC665-100	$120
1 ml, Concentrate	IHC665-1	$415
7 ml, Predilute	IHC665-7	$250
3 Positive Control Slides	IHC665-PC	$160

Designations

IVD: RUO:

SOX10

Clone: IHC010 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma, Skin Melanocytes

Description

SRY (Sex Determining Region Y)-Box 10 (SOX10), also known as **Transcription Factor SOX10,** is a nuclear transcription factor that acts in regulation of embryonic development and in the specification and differentiation of cells of melanocytic lineage. SOX10 is diffusely expressed in neurofibromas and schwannomas, and mutations in the SOX10 gene are linked to Waardenburg-Shah and Waardenburg-Hirschsprung's disease. Anti-SOX10 has been shown to be sensitive for conventional, spindled, and desmoplastic melanoma, and has been used to detect metastatic melanoma and nodal capsular nevus in sentinel lymph nodes.

References

1. Pingault V, et al. Nat Genet. 1998; 18:171-3. 2. Bondurand N, et al. Hum Mol Genet. 2000; 8:1785-9. 3. Kelsch RN. BioEssays. 2006; 28:788. 4. Nonaka D, et al. Am J Surg Pathol. 2008; 32:1291-8. 5. Chorny JA, et al. Am J Dermatopathol. 2002; 24:309-12. 6. Robson A, et al. Histopathology. 2001; 38:135-40. 7. Longacre T, et al. Am J Surg Pathol. 1996; 20:1489-500. 8. Ramos-Herberth FI, et al. J Cutan Pathol. 2010; 37:944-52.

Reference Panels

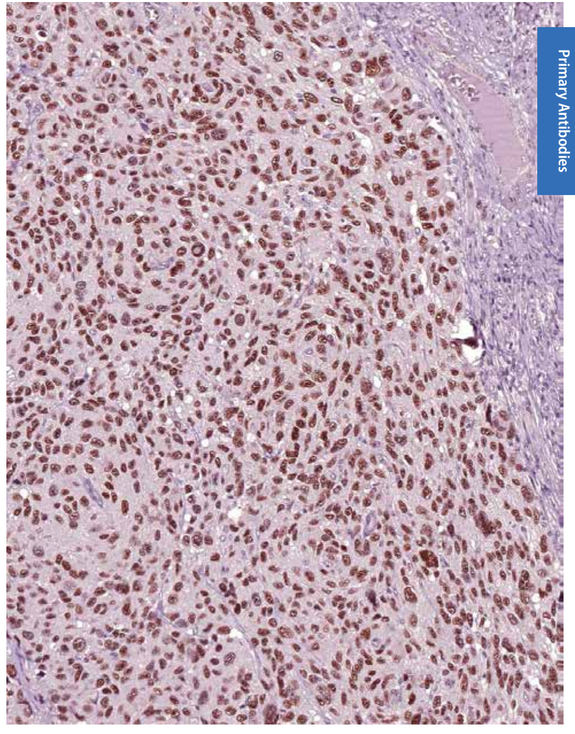
	pg.
Dermatopathology	279

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC010-100	$165
1 ml, Concentrate	IHC010-1	$690
7 ml, Predilute	IHC010-7	$380
25 ml, Predilute	IHC010-25	$1,020
3 Positive Control Slides	IHC010-PC	$200

Designations

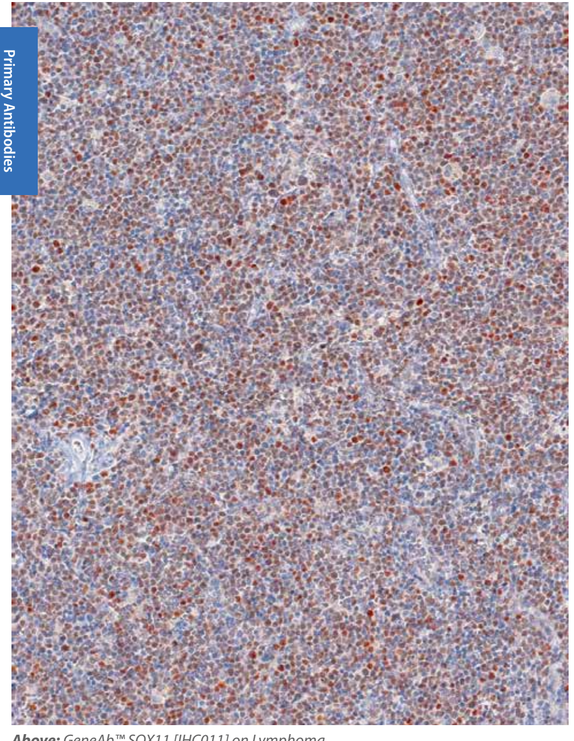
IVD: RUO:



Above: *GeneAb™ SOX10 [IHC010] on Melanoma*

SOX11

Clone: IHC011 | **Source:** Mouse Monoclonal | **Positive Control:** Mantle Cell Lymphoma



Above: *GeneAb™ SOX11 [IHC011] on Lymphoma*

Description

SRY (Sex Determining Region Y)-Box 11 (SOX11), also known as **Transcription Factor SOX11,** is a nuclear transcription factor that acts in regulation of embryonic development, cell differentiation, and the development of the human central nervous system. SOX11 is expressed in medulloblastoma and glioma, and has been indicated as a marker for both Cyclin D1-positive and -negative mantle cell lymphomas, Burkitt's lymphoma, and lymphoblastic lymphoma.

References

1. Jay P, et al. Genomics. 1996; 29:541-5. 2. Haslinger A, et al. Eur J Neurosci. 2009; 29:2103-14. 3. Mozos A, et al. Haematologica. 2009; 94:1555-62. 4. Hargrave M, et al. Dev Dyn. 1997; 210:79-86. 5. Lee CJ, et al. J Neurooncol. 2002; 57:201-14. 6. Salaverria I, et al. Haematologica. 2006; 91:11-6. 7. Fu K, et al. Blood. 2005; 106:4315-21. 8. Katzenberger T, et al. Br J Haematol. 2008; 142:538-50. 9. Wlodarska I, et al. Blood. 2008; 111:5683-90. 10. Weigle B, et al. Oncol Rep. 2005; 13:139-44. 11. Zeng W, et al. Am J Surg Pathol. 2012; 36:214-9.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC011-100	$210
1 ml, Concentrate	IHC011-1	$870
7 ml, Predilute	IHC011-7	$530
3 Positive Control Slides	IHC011-PC	$205

Designations

IVD: RUO:

Spectrin

Clone: IHC666 | **Source:** Mouse Monoclonal | **Positive Control:** Bone Marrow

Description

Spectrin is a protein that acts in actin cross-linking and forming scaffolds of the cytoskeleton, thereby aiding in the determination of cell shape, organization of organelles, and arrangement of transmembrane proteins. It is expressed in many cell types found in muscles, red blood cells, and red cell precursors. Mutations in the spectrin gene result in a number of hereditary red blood cell disorders, such as pyropoikilocytosis, spherocytic hemolytic anemia, and elliptocytosis type 2. Anti-Spectrin is also useful in the diagnosis of erythroid leukemias and other non-hereditary erythroid disorders.

References

1. Gorman EB, et al. Mod Pathol. 2007; 20:1245-52. 2. Sadahira Y, et al. J Clin Pathol. 1999; 52: 919-21. 3. Nehls V, et al. Am J Pathol. 1993; 142:1565-73. 4. Muller M, et al. J Vet Med A Physiol Pathol Clin Med. 2001; 48:51-7. 5. Terada N, et al. J Anat. 1997; 190:397-404.

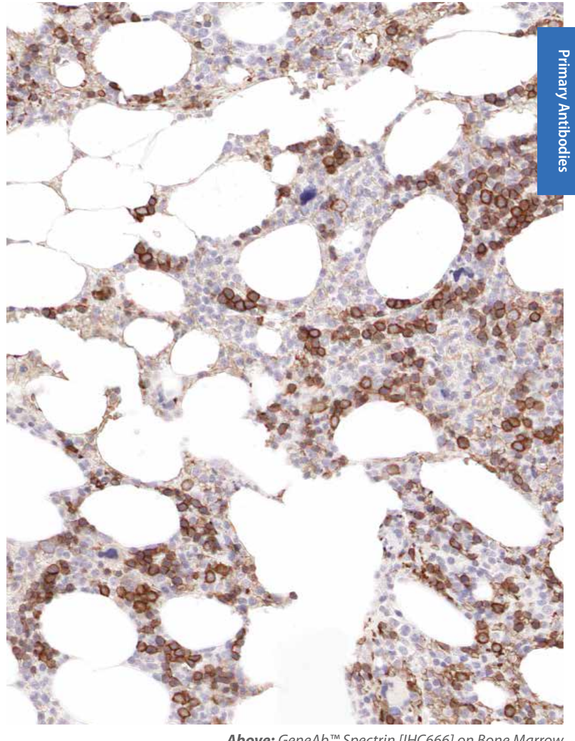
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC666-100	$150
1 ml, Concentrate	IHC666-1	$470
7 ml, Predilute	IHC666-7	$335
3 Positive Control Slides	IHC666-PC	$160

Designations

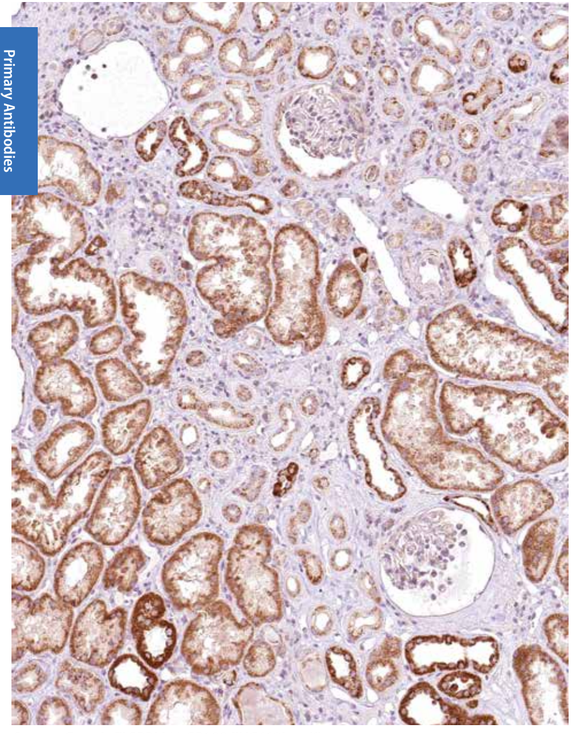
IVD: RUO:



Above: *GeneAb™ Spectrin [IHC666] on Bone Marrow*

SRRM4/nSR100

Clone: IHC413 | **Source:** Mouse Monoclonal | **Positive Control:** Cerebellum



Above: *GeneAb™ SRRM4/nSR100 [IHC413] on Kidney*

Description

Serine/Arginine Repetitive Matrix 4 (SRRM4), also known as **nSR100,** is a vertebrate- and neural-specific Ser/Arg repeat-related protein that acts in the brain as a key regulator of alternative splicing. nSR100 has been identified as an activator of the small cell lung cancer-specific isoform of RE1-silencing transcription factor. The protein is involved in the progression of neuroendocrine prostate cancer, an aggressive subtype of castration-resistant prostate cancer, and has been suggested as a potential therapeutic target. A correlation has been made between underexpression of the SRRM4 protein and autism spectrum disorders.

References

1. Kelsey R. Nat Rev Urol. 2016; 13:371. 2. Li Y, et al. Eur Urol. 2017; 71:68-78. 3. Shimojo M, et al. Mol Cancer Res. 2013; 11:1258-68. 4. Quesnel-Vallières M, et al. Genes Dev. 2015; 29:746-59. 5. Quesnel-Vallières M, et al. Mol Cell. 2016; 64:1023-34.

Reference Panels

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Neuropathology	299

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC413-100	$210
1 ml, Concentrate	IHC413-1	$980
7 ml, Predilute	IHC413-7	$520
3 Positive Control Slides	IHC413-PC	$275

Designations

IVD: RUO:

Stathmin

Clone: IHC667 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Cervical Intraepithelial Neoplasia-High Grade

Description

Stathmin regulates microtubule dynamics in the cell cycle. It is present in all tissues, but is mostly pronounced in constantly proliferating cell types. Anti-Stathmin staining has been found to correlate with cervical intraepithelial neoplasia (CIN) grade, with CIN 3 presenting the greatest expression and CIN 1 displaying the least expression of stathmin.

References

1. Rubin CI. J Cell Biochem. 2004; 93:242-50. 2. Belletti B, et al. Expert Opin Ther Targets. 2011; 15:1249-66. 3. Syrjanen KJ. Eur J Obstet Gynecol Reprod Biol. 1996; 65:45-53. 4. Howitt BE, et al. Am J Surg Pathol. 2013; 37:89-97.

Reference Panels

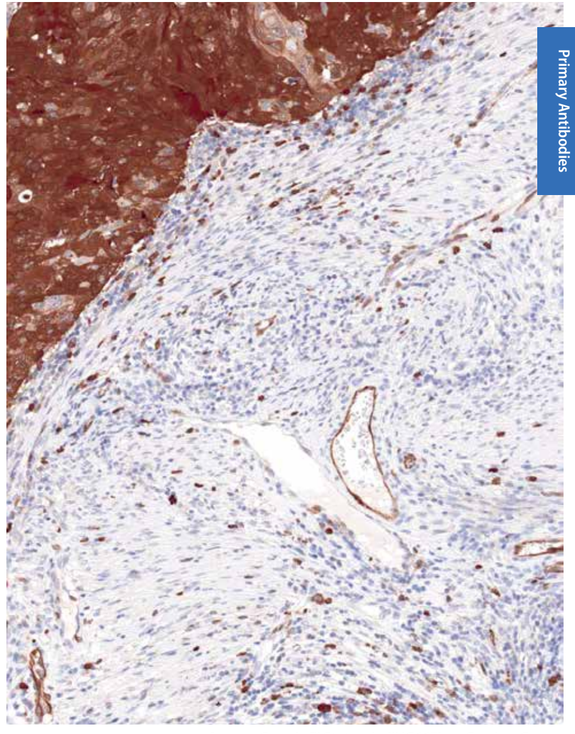
	pg.
Breast/Gynecological	277
Cytopathology	n/a

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC667-100	$180
1 ml, Concentrate	IHC667-1	$875
7 ml, Predilute	IHC667-7	$435
3 Positive Control Slides	IHC667-PC	$160

Designations

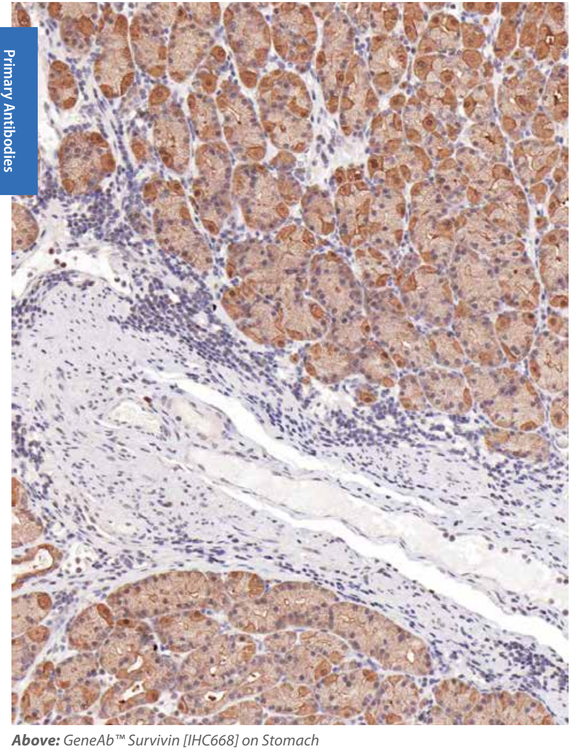
IVD: RUO:



Above: *GeneAb™ Stathmin [IHC667] on Cervical Cancer*

Survivin

Clone: IHC668 | **Source:** Mouse Monoclonal | **Positive Control:** Lymphoma



Above: *GeneAb™ Survivin [IHC668] on Stomach*

Description

Survivin is an apoptosis inhibitor that is nearly undetectable in terminally differentiated cells, but found in most tumours including renal cell carcinoma, ovarian carcinoma, hepatocellular carcinoma, prostate carcinoma, and breast carcinoma. Survivin expression is linked to tumour progression, but not patient survival.

References

1. Jaiswal PK, et al. Indian J Med Res. 2015; 141:389-97. 2. Ambrosini G, et al. Nat Med. 1997; 3:917-21. 3. Tamm I, et al. Cancer Res. 1998; 58:5315-20.

Reference Panels

	pg.
Pediatric	300

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC668-100	$130
1 ml, Concentrate	IHC668-1	$495
7 ml, Predilute	IHC668-7	$255
3 Positive Control Slides	IHC668-PC	$135

Designations

IVD: RUO:

Synaptophysin

Clone: IHC669 | **Source:** Mouse Monoclonal | **Positive Control:** Pancreatic Islet Cells

Description

Synaptophysin is a synaptic vesicle glycoprotein used in synaptic transmission of neurons. Anti-Synaptophysin stains the gastrointestinal mucosa and lung neuroendocrine cells of the human adrenal medulla, carotid body, pancreas, pituitary, skin, and thyroid. Synaptophysin also stains neuroendocrine neoplasms. Use of Anti-Synaptophysin produces diffuse, finely granular, cytoplasmic staining. The presence of synaptophysin does not correlate with neuron-specific enolase or other neuroendocrine markers.

References

1. Navone F, et al. J Cell Biol. 1986; 103:2511-27. 2. Wiedenmann B, et al. Cell. 1985; 41:1017-28. 3. Kayser K, et al. Path Res Pract. 1988; 183:412-7. 4. Son El, et al. Pathol Int. 2003; 53:67-73. 5. Conner MG, et al. Ann Diagn Pathol. 2002; 6:345-8. 6. Lyda MH, et al. Hum Pathol. 2000; 31:980-7. 7. Skacel M, et al. Appl Immunohistochem Mol Morphol. 2000; 8:302-9. 8. Morrison CD, et al. Semin Diagn Pathol. 2000; 17:204-15. 9. Kamisawa T, et al. Pathol Res Pract. 1996; 192:901-8.

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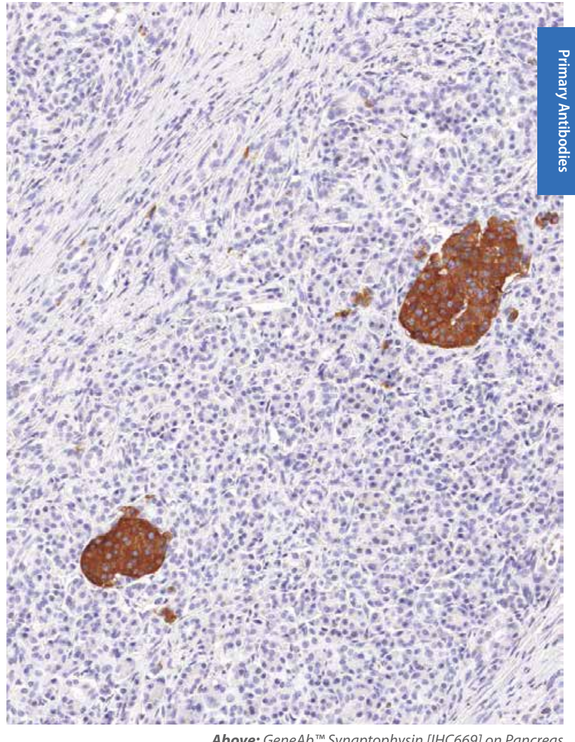
Dermatopathology	279
Gastrointestinal (GI)	283
Genitourinary (GU)	284
Head and Neck	288
Neuropathology	299

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC669-100	$125
1 ml, Concentrate	IHC669-1	$410
7 ml, Predilute	IHC669-7	$250
3 Positive Control Slides	IHC669-PC	$135

Designations

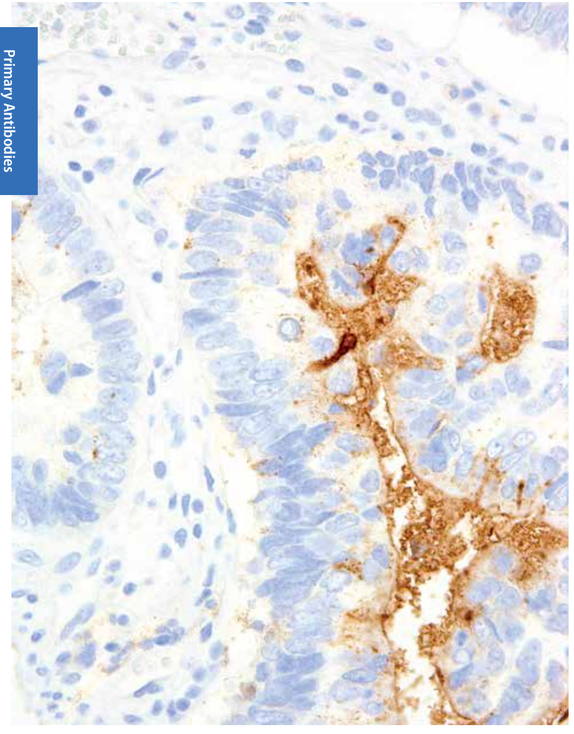
IVD: RUO:



Above: *GeneAb™ Synaptophysin [IHC669] on Pancreas*

TAG-72

Clone: IHC072 | **Source:** Mouse Monoclonal | **Positive Control:** Lung Adenocarcinoma



Above: *GeneAb™ TAG-72 [IHC072] on Colon*

Description

Tumour-Associated Glycoprotein 72 (TAG-72) is a glycoprotein found on the surface of many cancer pathologies. Anti-TAG-72 can be useful for detecting some adenocarcinomas and non-neoplastic tissues. This diagnostic grade TAG-72 IVD antibody is useful for identifying adenocarcinomas in positive staining, but in mesotheliomas no staining is observed.

References

1. Thor A, et al. Cancer Res. 1986; 46:3118-24. 2. Osteen KG, et al. In J Gynecol Pathol. 1992; 11:216-20. 3. Johnston WW, et al. Hum Pathol. 1986; 17:501-13. 4. Lundy J, et al. Ann Surg. 1986; 203:399-402. 5. Kline TS, et al. Cancer. 1989; 63:2253-6. 6. Chieng DC, et al. Hum Pathol. 2003; 34:1016-21. 7. Ordóñez NG. Am J Surg Pathol. 1998; 22:1203-14. 8. Ordóñez NG. Am J Surg Pathol. 2003; 27:1031-51.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC072-100	$125
1 ml, Concentrate	IHC072-1	$265
7 ml, Predilute	IHC072-7	$145
3 Positive Control Slides	IHC072-PC	$115

Designations

IVD: RUO:

Tau

Clone: IHC696 | **Source:** Mouse Monoclonal | **Positive Control:** Thyroid Gland

Description

Tau proteins are abundant in neurons of the central nervous system, and function in microtubule stability and organization. Defects in Tau functioning and aggregation of these proteins have been clinically linked to a number of neurodegenerative disorders including Alzheimer's disease, Parkinson's disease, Pick's disease (PiD), progressive supranuclear palsy (PSP), cortical basal degeneration (CBD), and frontotemporal dementia with parkinsonism linked to chromosome 17 (FTDP-17).

References

1. Nuobo G, et al. Ann Diagn Pathol. 2017; 25:24-9. 2. Espinoza M, et al. J Alzheimers Dis. 2008; 14:1-16. 3. Goedert M, et al. Proc Natl Acad Sci U S A. 1988; 85:4051-5. 4. Shin RW, et al. Lab Invest. 1991; 64:693-702.

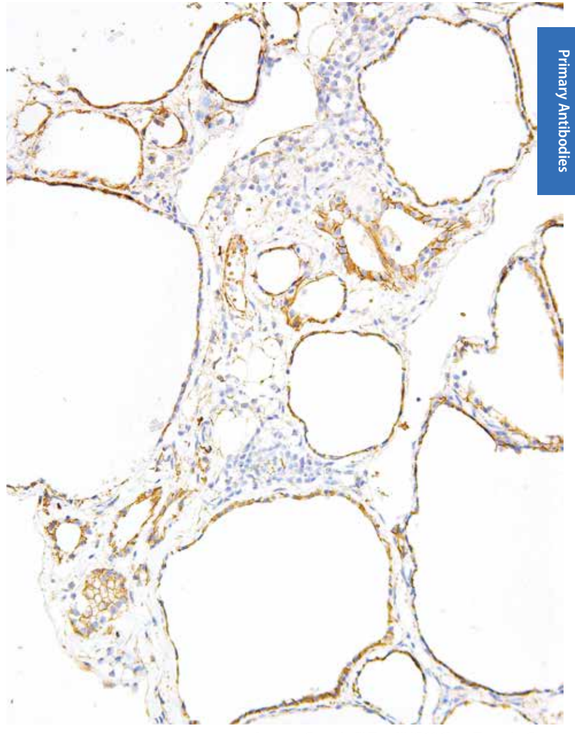
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC696-100	$130
1 ml, Concentrate	IHC696-1	$480
7 ml, Predilute	IHC696-7	$310
3 Positive Control Slides	IHC696-PC	$160

Designations

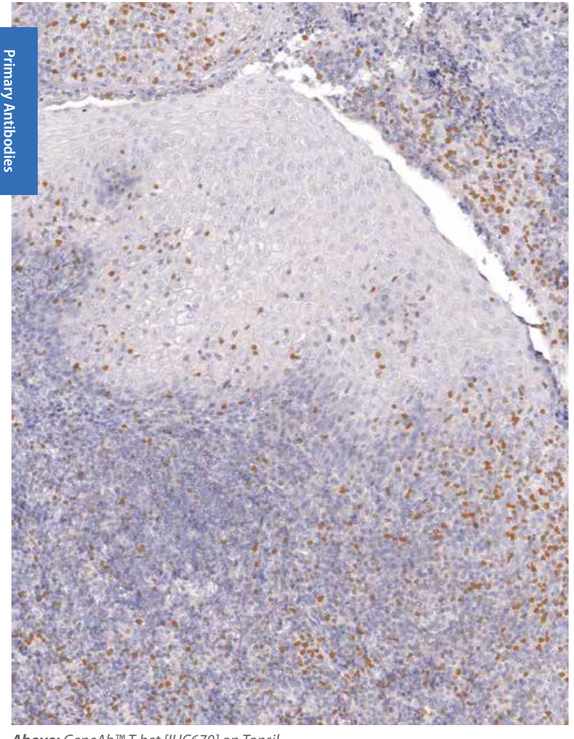
IVD: RUO:



Above: *GeneAb™ Tau [IHC696] on Thyroid Gland*

T-bet

Clone: IHC670 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Hairy Cell Leukemia



Above: *GeneAb™ T-bet [IHC670] on Tonsil*

Description

T-bet is a transcription factor present in CD4+ T-cells. Anti-T-bet stains mature T-lymphocytes, but is scarcely present in T helper cells. Nuclear staining is observed in the interfollicular T-cell zone of reactive lymphoid tissue (tonsil, lymph node, and spleen) and absent in germinal centers, mantle zones, and marginal zones. Anti-T-bet also stains certain B-cell lymphoproliferative disorders, such as precursor B-cell lymphoblastic leukemia and lymphoblastic lymphoma, and B-cell neoplasms from mature B-cells, marginal zone lymphoma, and hairy cell leukemia. Anti-T-bet is useful for identifying B-cell and T-cell lymphoproliferative disorders, as it does not stain B-cell neoplasms from the pre-germinal center or germinal center B-cells, such as mantle cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, and Burkitt's lymphoma.

References

1. Szabo SJ, et al. Cell. 2000; 100:665-9. 2. Zhang WX, et al. Genomics. 2001; 70:41-8. 3. Johrens K, et al. Am J Surg Pathol. 2007; 31:1181-5. 4. Atayar C, et al. Am J Pathol. 2005; 166:127-34. 5. Dorfman DM, et al. Am J Clin Pathol. 2004; 122:292-7. 6. Harashima A, et al. Leuk Res. 2005; 29:841-8. 7. Marafioti T, et al. Am J Pathol. 2003; 162:861-71.

Reference Panels pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC670-100	$170
1 ml, Concentrate	IHC670-1	$790
7 ml, Predilute	IHC670-7	$465
3 Positive Control Slides	IHC670-PC	$115

Designations

IVD: RUO:

TdT

Clone: IHC671 | **Source:** Mouse Monoclonal | **Positive Control:** Thymus

Description

Terminal Deoxynucleotidyl Transferase (TdT) is a DNA polymerase present in normal and malignant pre-B- and pre-T-cells during early differentiation. Anti-TdT stains nearly all acute lymphoblastic lymphoma/leukemia (ALL) cases, but does not stain pre-B-cell ALL or mature B- and T-cells. Anti-TdT staining is also useful for identifying Type AB thymoma and some chronic myeloid leukemia.

References

1. Stauchen JA, et al. Int J Surg Pathol. 2003; 11:21-4. 2. Orazi A, et al. Mod Pathol. 1994; 7:582-6. 3. Suzumija J, et al. J Pathol. 1997; 182:86-91. 4. Lucas DR, et al. Am J Clin Pathol. 2001; 115:11-7. 5. Ozdemirli M, et al. Mod Pathol. 2001; 14:1175-82. 6. Soslow RA, et al. Hum Pathol. 1997; 28:1158-65. 7. Wang Z, et al. Int J Clin Exp Pathol. 2014; 7:8700-5. 8. Arber DA, et al. Am J Clin Pathol. 1996; 106:462-8.

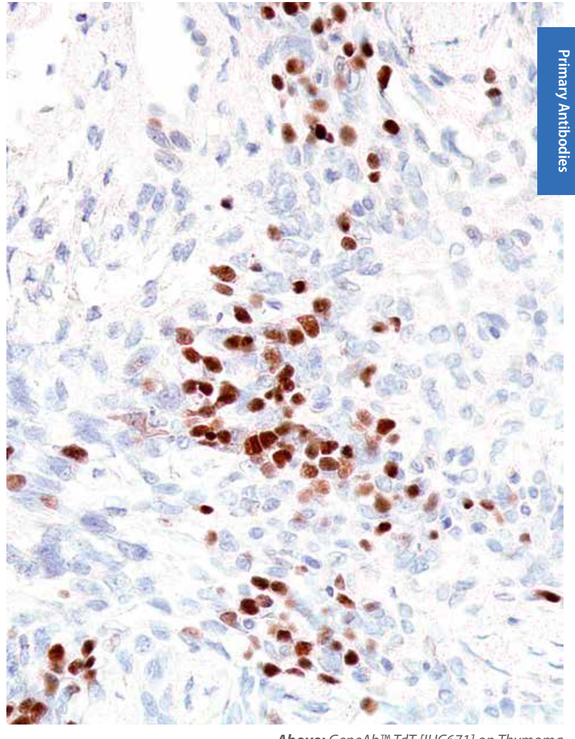
Reference Panels pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC671-100	$150
1 ml, Concentrate	IHC671-1	$655
7 ml, Predilute	IHC671-7	$335
3 Positive Control Slides	IHC671-PC	$160

Designations

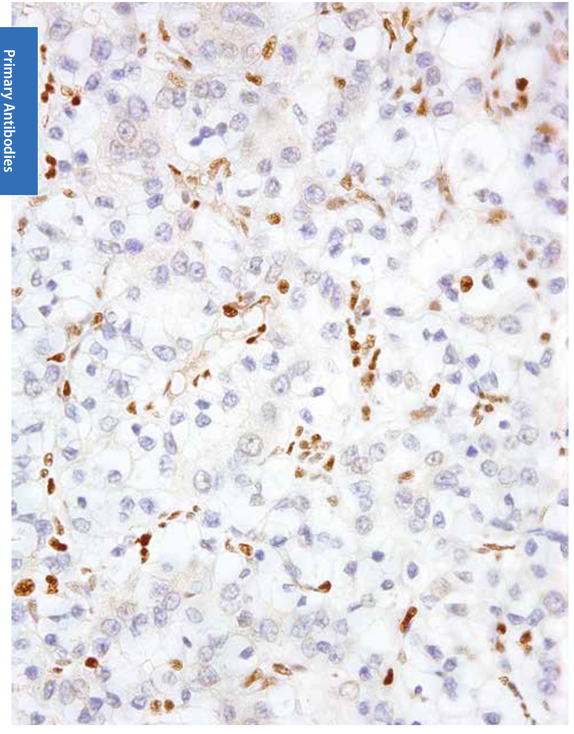
IVD: RUO:



Above: *GeneAb™ TdT [IHC671] on Thymoma*

TFE3

Clone: IHC672 | **Source:** Mouse Monoclonal | **Positive Control:** Testis, Melanoma, Xp11.2 Translocation Renal Cell Carcinoma



Above: *GeneAb™ TFE3 [IHC672] on Kidney*

Description

Transcription Factor E3 (TFE3) is a transcription factor that binds to the MUE3-type E-box sequences involved in TGF-β signaling. Anti-TFE3 staining is the most sensitive and specific indicator of Xp11 translocation renal cell carcinomas. Since alveolar soft part sarcoma (ASPS) is characterized by a specific chromosomal rearrangement resulting in a chimeric transcription factor (ASPSCR1-TFE3), this TFE3 IVD antibody is also a useful diagnostic tool for recognizing ASPS.

References

1. Argani P, et al. Am J Clin Pathol. 2006; 126:332-4. 2. Argani P, et al. Am J Surg Pathol. 2003; 27:750-61. 3. Lazar AJ, et al. Histopathology. 2009; 55:750-5.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC672-100	$250
1 ml, Concentrate	IHC672-1	$1,310
7 ml, Predilute	IHC672-7	$755
3 Positive Control Slides	IHC672-PC	$205

Designations

IVD: RUO:

TGFβ1

Clone: IHC673 | **Source:** Mouse Monoclonal | **Positive Control:** Placenta

Description

Transforming Growth Factor β1 (TGFβ1) is a cytokine present in regulatory T-cells, immature dendritic cells, megakaryocytes, and platelets, with a functional involvement in regulating T-cells. TGFβ1 is overexpressed in thyroid cancer and cervical squamous cell carcinoma. Poor prognosis of cervical squamous cell carcinoma is associated with TGFβ1.

References

1. Joly MS, et al. J Immunol. 2014; 193:3947-58. 2. Fan DM, et al. Mol Biol Rep. 2012; 39:3925-31. 3. Zivancevic-Simonovic S, et al. Ann Clin Lab Sci. 2016; 6:401-6.

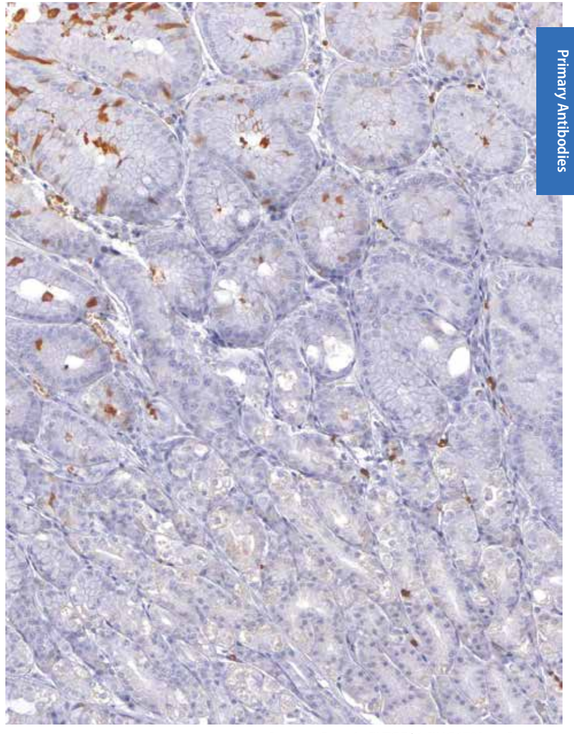
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC673-100	$190
1 ml, Concentrate	IHC673-1	$730
7 ml, Predilute	IHC673-7	$335
3 Positive Control Slides	IHC673-PC	$175

Designations

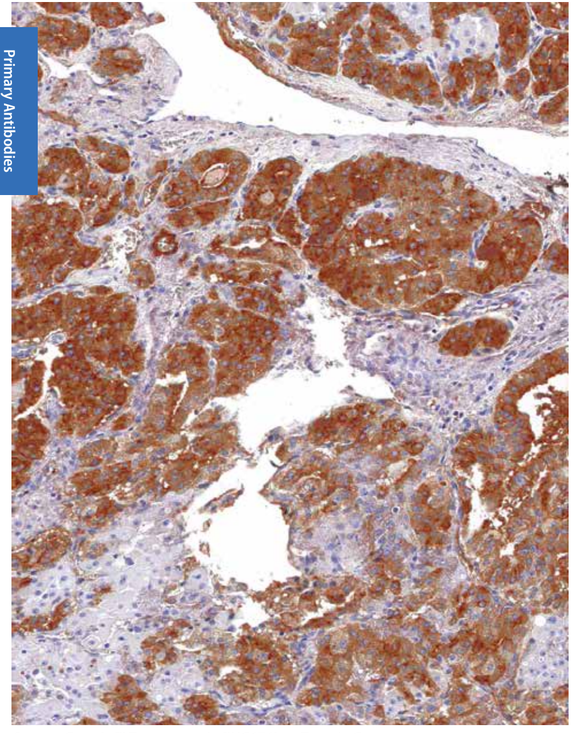
IVD: RUO:



Above: *GeneAb™ TGFβ1 [IHC673] on Stomach*

Thyroglobulin

Clone: IHC674 | **Source:** Mouse Monoclonal | **Positive Control:** Thyroid Gland



Above: *GeneAb™ Thyroglobulin [IHC674] on Thyroid Cancer*

Description

Thyroglobulin is a precursor to the thyroid hormones T4 and T3, and is present in the thyroid follicular cells. Nearly all thyroid follicular carcinomas stain for thyroglobulin and sometimes produce a focal staining pattern. Conversely, poorly differentiated carcinomas and non-thyroid adenocarcinomas do not stain for thyroglobulin, therefore Anti-Thyroglobulin is a useful diagnostic tool for recognizing papillary and follicular thyroid carcinomas. A panel of Anti-Thyroglobulin and Anti-Calcitonin is useful for identifying medullary thyroid carcinomas, whereas a panel of Anti-Thyroglobulin and Anti-TTF1 is useful for distinguishing between primary thyroid and lung neoplasms.

References

1. Bellet D, et al. J Clin Endocrin Metab. 1983; 56:530-3. 2. Heffess CS, et al. Cancer. 2002; 95:1869-78. 3. Bejarano PA, et al. Appl Immunohistochem Mol Morphol. 2000; 8:189-94. 4. Judkins AR, et al. Hum Pathol. 1999; 30:1373-6. 5. Hammer SP. Hum Pathol. 1998; 29:1393-402.

Reference Panels

pg.

Head and Neck.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC674-100	$95
1 ml, Concentrate	IHC674-1	$360
7 ml, Predilute	IHC674-7	$215
3 Positive Control Slides	IHC674-PC	$160

Designations

IVD: RUO:

TIA1

Clone: IHC675 | **Source:** Mouse Monoclonal | **Positive Control:** Spleen

Description

T-Cell-Restricted Intracellular Antigen-1 (TIA1) is an RNA-binding protein involved in apoptosis, which is present in natural killer cells and cytotoxic T-cells. Anti-TIA1 stains hairy cell leukemia, large granular lymphocyte (LGL) leukemia, and T-cell lymphoma. As overexpression of TIA1 is characteristic of LGL leukemia and decreased levels of TIA1 is indicative of T-cell lymphocytosis and other T-cell diseases, Anti-TIA1 may be useful in distinguishing between these conditions. TIA1 could also be a useful marker for identifying tumour-infiltrating lymphocytes and understanding the immune response to cancers.

References

1. Dukers DF, et al. J Clin Pathol. 1999; 52:129-36. 2. Kanavaros P, et al. Anticancer Res. 1999; 19:1209-16.

Reference Panels

pg.

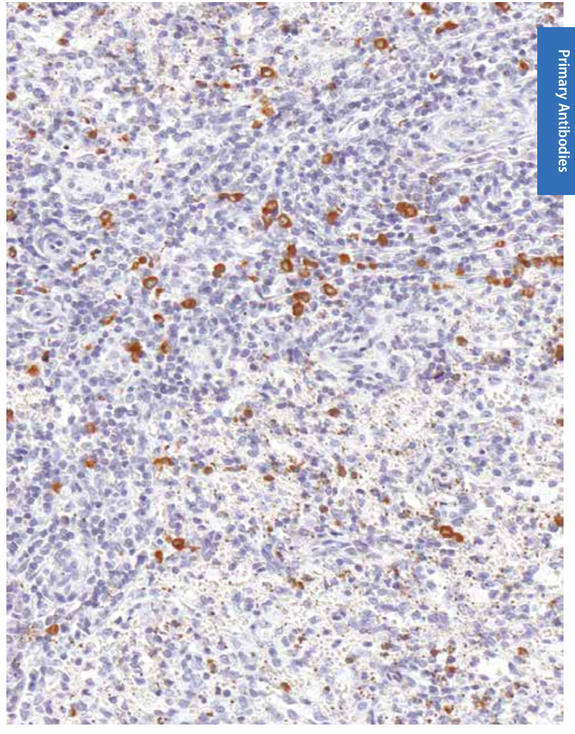
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC675-100	$150
1 ml, Concentrate	IHC675-1	$685
7 ml, Predilute	IHC675-7	$275
3 Positive Control Slides	IHC675-PC	$145

Designations

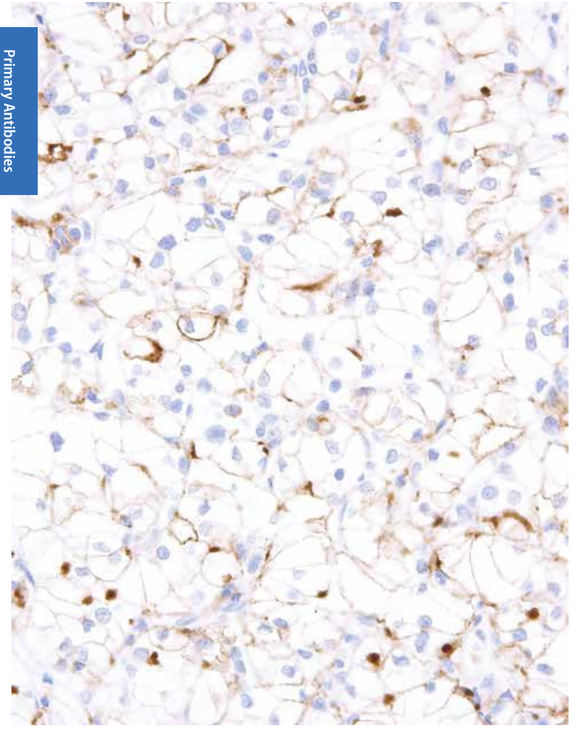
IVD: RUO:



Above: *GeneAb™ TIA1 [IHC675] on Spleen*

TIM3

Clone: IHC003 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil



Above: *GeneAb™ TIM3 [IHC003] on Kidney*

Description

T-Cell Immunoglobulin and Mucin-Domain-Containing Molecule-3 (TIM3) is present on T-helper type 1 lymphocytes and other immune cells, including dendritic cells and natural killer cells. TIM3 is overexpressed in CD4+ tumour-infiltrating lymphocytes, including those with non-small cell lung cancer associated with poor prognoses. TIM3 has recently emerged as a potential target for cancer immunotherapy.

References

1. Monney L, et al. Nature. 2002; 415:536-41. 2. Sánchez-Fueyo A, et al. Nat Immunol. 2003; 4:1093-101. 3. Anderson AC. Cancer Immun Res. 2014; 2:393-8. 4. Gao X, et al. PLoS One. 2012; 7:e30676.

Reference Panels

pg.
Hematopathology.....288

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC003-100	$210
1 ml, Concentrate	IHC003-1	$980
7 ml, Predilute	IHC003-7	$520
3 Positive Control Slides	IHC003-PC	$275

Designations

IVD: RUO:

TLE1

Clone: IHC676 | **Source:** Mouse Monoclonal | **Positive Control:** Synovial Sarcoma

Description

Transducin-Like Enhancer of Split 1 (TLE1) is involved in regulation of neuronal, hematopoiesis, and terminal epithelial differentiation. Nuclear staining of TLE1 has been noted in synovial sarcoma, and TLE1 is rarely detected in soft tissue tumours such as peripheral nerve sheath tumours and pleomorphic sarcoma. Anti-TLE1 is more sensitive and is specific for synovial sarcoma in comparison to other markers such as BCL2, epithelial membrane antigen, and cytokeratins, and is therefore useful in the diagnosis of synovial sarcoma.

References

1. Jagdis A, et al. Am J Surg Pathol. 2009; 33:1743-51.

Reference Panels

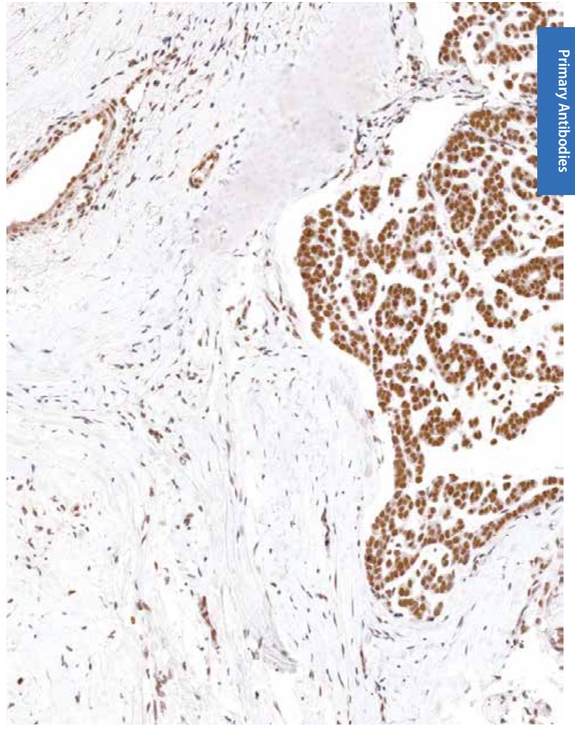
pg.
Soft Tissue.....302

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC676-100	$175
1 ml, Concentrate	IHC676-1	$820
7 ml, Predilute	IHC676-7	$615
3 Positive Control Slides	IHC676-PC	$200

Designations

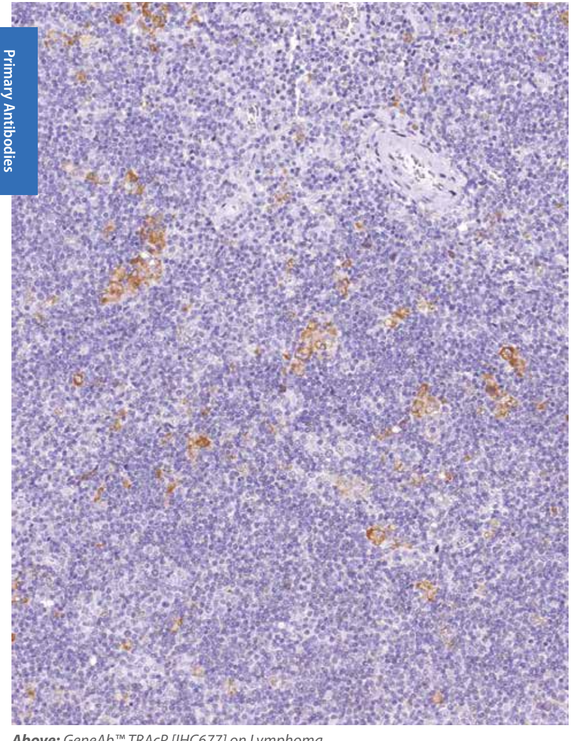
IVD: RUO:



Above: *GeneAb™ TLE1 [IHC676] on Head and Neck Cancer*

TRAcP

Clone: IHC677 | **Source:** Mouse Monoclonal | **Positive Control:** Hairy Cell Leukemia



Above: *GeneAb™ TRAcP [IHC677] on Lymphoma*

Description

Tartrate-Resistant Acid Phosphatase (TRAcP) is an iron-binding protein present in many cell types, including macrophages and osteoclasts. TRAcP is present in elevated levels in the spleen in monocytes of patients with Gaucher's disease, splenocytes and circulating lymphocytes of patients with hairy cell leukemia, the spleen of those with Hodgkin's disease, the sera of individuals undergoing active bone turnover, and in B-cell and T-cell leukemias and lymphomas. Maternal and embryonic tissues have also been found to have elevated levels of TRAcP in placental decidual cells, syncytiotrophoblasts, and some macrophages. Anti-TRAcP is the ideal choice for identifying hairy cell leukemia due to its high sensitivity and specificity.

References

1. Janckila AJ, et al. Blood. 1995; 85:2839-44. 2. Yaziji H, et al. Am J Clin Pathol. 1995; 104:397-402. 3. Janckila AJ, et al. J Histochem Cytochem. 1996; 44:235-44. 4. Janckila AJ, et al. Hybridoma. 1997; 16:175-82. 5. Hoyer JD, et al. Am J Clin Pathol. 1997; 108:308-15. 6. Janckila AJ, et al. Biotech Histochem. 1998; 73:316-24.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC677-100	$140
1 ml, Concentrate	IHC677-1	$370
7 ml, Predilute	IHC677-7	$320
3 Positive Control Slides	IHC677-PC	$160

Designations

IVD: RUO:

Tryptase

Clone: IHC678 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil

Description

Mast Cell Tryptase, also known simply as **Tryptase,** is a highly abundant proteinase stored in basophils and the secretory granules of mast cells that is released upon cellular activation. The enzyme is therefore considered a key marker for mast cell activation, as well as acting as a critical mediator of inflammation. Elevated levels of serum tryptase occur in both anaphylactic and anaphylactoid reactions. Anti-Tryptase acts as a good marker for mast cells, basophils, and their derivatives.

References

1. Li CY. Leuk Res. 2001; 25:537-41. 2. Aoki, et al. Int Arch Allergy Immunol. 2003; 130:216-23. 3. Ghott, et al. Am J Surg Pathol. 2003; 27:1013-9. 4. Jordan JH, et al. Hum Pathol. 2001; 32:545-52. 5. Gordon LK, et al. Clin Immunol. 2000; 94:42-50. 6. Roberts IS, et al. J Clin Pathol. 2000; 53:858-62. 7. Fiorucci L, et al. Cell Mol Life Sci. 2004; 61:1278-95.

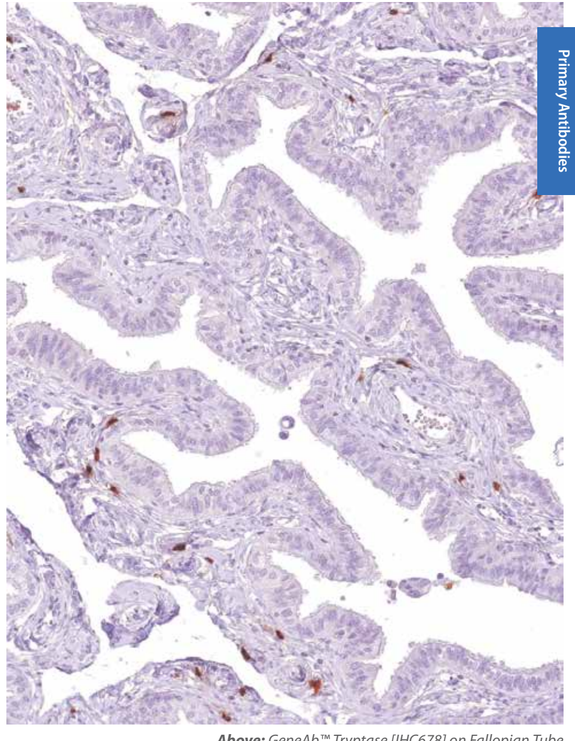
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC678-100	$145
1 ml, Concentrate	IHC678-1	$625
7 ml, Predilute	IHC678-7	$320
3 Positive Control Slides	IHC678-PC	$160

Designations

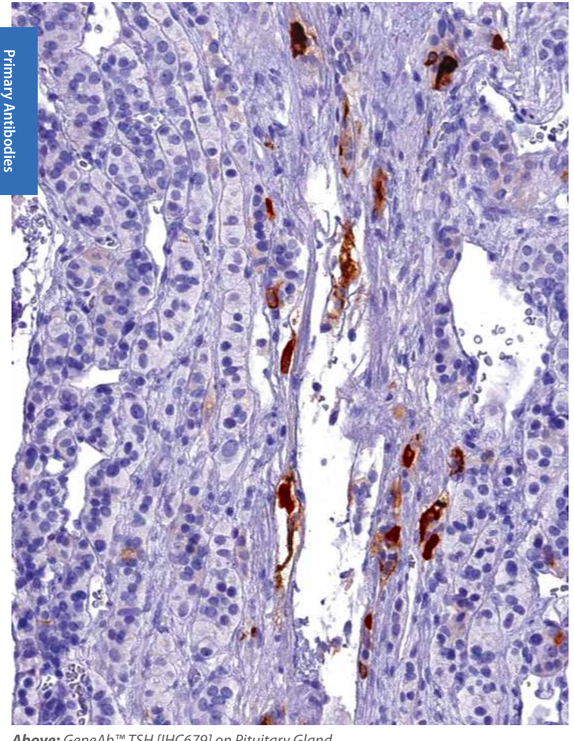
IVD: RUO:



Above: *GeneAb™ Tryptase [IHC678] on Fallopian Tube*

TSH

Clone: IHC679 | **Source:** Mouse Monoclonal | **Positive Control:** Pituitary



Above: *GeneAb™ TSH [IHC679] on Pituitary Gland*

Description

Thyroid-Stimulating Hormone (TSH) is secreted by thyrotrope cells in the anterior pituitary gland. Anti-TSH stains thyrotrophs and is useful for categorizing pituitary tumours, as well as for recognizing primary and metastatic pituitary gland tumours.

References

1. La Rosa S, et al. Virchows Arch. 2000; 437:264-9. 2. Kuzuya N, et al. J Clin Endocrinol Metab. 1990; 71:1103-11.

Reference Panels

pg.

- Neuropathology.....299

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC679-100	$120
1 ml, Concentrate	IHC679-1	$555
7 ml, Predilute	IHC679-7	$245
3 Positive Control Slides	IHC679-PC	$160

Designations

IVD: RUO:

TTF-1

Clone: IHC414 | **Source:** Mouse Monoclonal | **Positive Control:** Lung Adenocarcinoma

Description

Thyroid Transcription Factor 1 (TTF-1) is present in diencephalon, lung, and thyroid. Anti-TTF-1 stains thyroid and thyroid-derived tumours, and is therefore used for distinguishing lung adenocarcinoma from germ cell tumours, malignant mesothelioma, and metastatic carcinomas from organs other than the thyroid. It is also useful for distinguishing small cell lung carcinoma from lymphoid infiltrates, and pulmonary from non-pulmonary adenocarcinomas in malignant effusions. The ability to distinguish between pulmonary and non-pulmonary adenocarcinomas is particularly useful in identifying tumours that have metastasized to the brain.

References

1. Bejarano PA, et al. Mod Pathol. 1996; 9:445-52. 2. Holzinger A, et al. Hybridoma. 1996; 15:49-53. 3. Saad RS, et al. Appl Immunohistochem Mol Morphol. 2003; 11:107-12. 4. Di Loreto C, et al. Cancer Lett. 1998; 124:73-8. 5. Abutaily AS, et al. J Clin Pathol. 2002; 55:662-8. 6. Di Loreto C, et al. J Clin Pathol. 1997; 50:30-2. 7. Katoh R, et al. Mod Pathol. 2000; 13:570-6. 8. Jang KY, et al. Anal Quant Cytol Histol. 2001; 23:400-4. 9. Srodon M, et al. Hum Pathol. 2002; 33:642-5.

Reference Panels

pg.

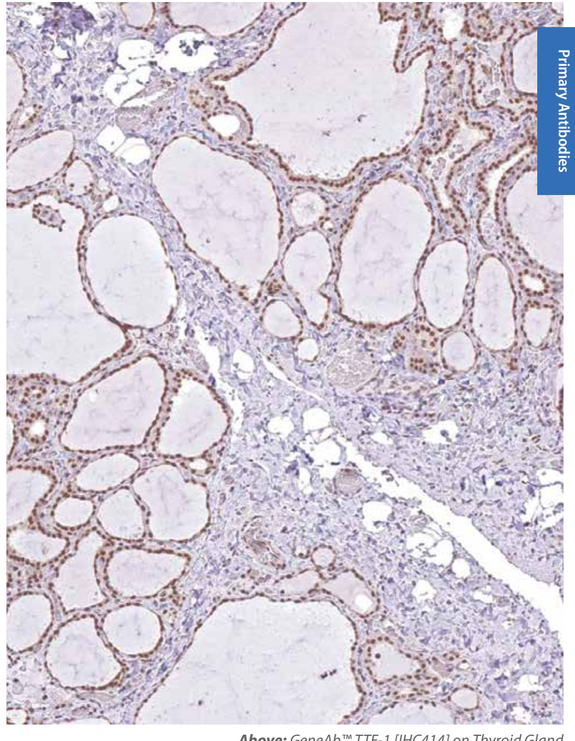
- Pulmonary.....301

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC414-100	$125
1 ml, Concentrate	IHC414-1	$260
7 ml, Predilute	IHC414-7	$145
25 ml, Predilute	IHC414-25	$415
3 Positive Control Slides	IHC414-PC	$160

Designations

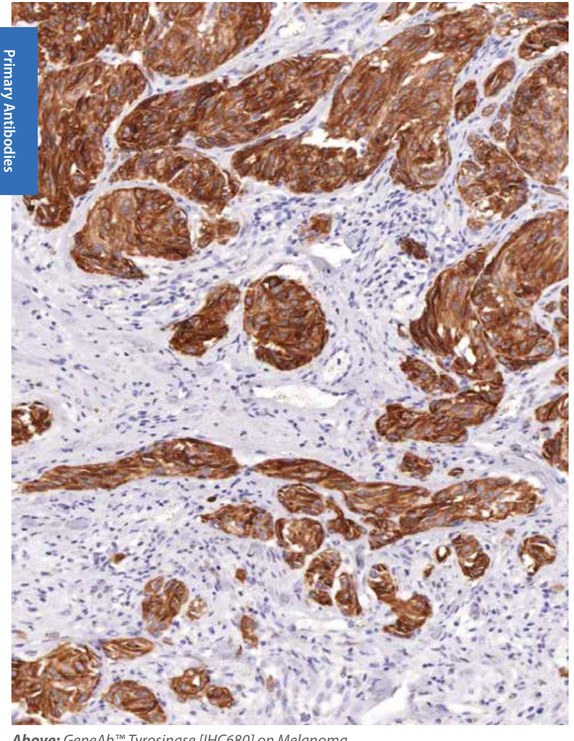
IVD: RUO:



Above: *GeneAb™ TTF-1 [IHC414] on Thyroid Gland*

Tyrosinase

Clone: IHC680 | **Source:** Mouse Monoclonal | **Positive Control:** Melanoma, Skin



Above: *GeneAb™ Tyrosinase [IHC680] on Melanoma*

Description

Tyrosinase catalyzes the biosynthesis of melanin. Anti-Tyrosinase stains melanocytic lesions including malignant melanoma and melanotic neurofibroma, but is virtually unreactive to carcinomas.

References

1. Kaufmann O, et al. Mod Pathol. 1998; 11:740-6. 2. Meije CB, et al. J Pathol. 2000; 190:572-8. 3. Busam KJ, et al. Am J Dermatopathol. 2000; 22:237-41. 4. Kanitakis J, et al. Am J Dermatopathol. 2002; 24:498-501. 5. Eudy GE, et al. Hum Pathol. 2003; 34:797-802. 6. Jaanson N, et al. Melanoma Res. 2003; 13:473-82.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC680-100	$135
1 ml, Concentrate	IHC680-1	$500
7 ml, Predilute	IHC680-7	$310
3 Positive Control Slides	IHC680-PC	$160

Designations

IVD: RUO:

Uroplakin III

Clone: IHC681 | **Source:** Mouse Monoclonal | **Positive Control:** Bladder

Description

Uroplakin III is a transmembrane protein that is a differentiation product of urothelial cells. Uroplakin III is present on non-neoplastic mammalian urothelium at the luminal plasmalemma of superficial umbrella cells, producing complexes of 16 nm particles. Anti-Uroplakin III is useful for recognizing metastatic carcinomas of urothelial origin, as many urothelial carcinomas stain positively, while several non-urothelial carcinomas do not react. Recent studies also suggest that Uroplakin III is an indicator of the malignant potential, rather than the grade of the tumour.

References

1. Badalament RA, et al. J Urol. 1990; 144:859-63. 2. Hall MC, et al. Urology. 1998; 52 :594-601. 3. Logani S, et al. Am J Surg Pathol. 2003; 27:1434-41. 4. Moll R, et al. Am J Pathol. 1995; 147:1383-97. 5. Ohtsuka Y, et al. BJU Int. 2006; 97:1322-6. 6. Olsburgh J, et al. J Pathol. 2003; 199:41-9.

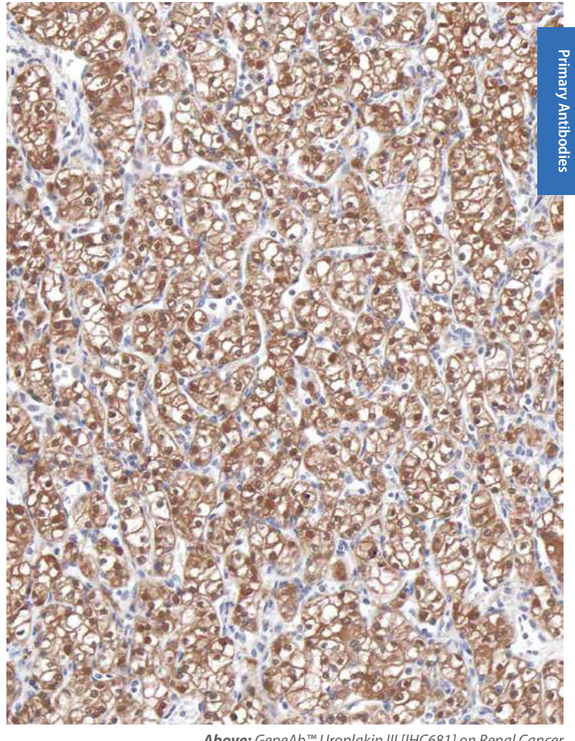
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC681-100	$115
1 ml, Concentrate	IHC681-1	$405
7 ml, Predilute	IHC681-7	$230
3 Positive Control Slides	IHC681-PC	$205

Designations

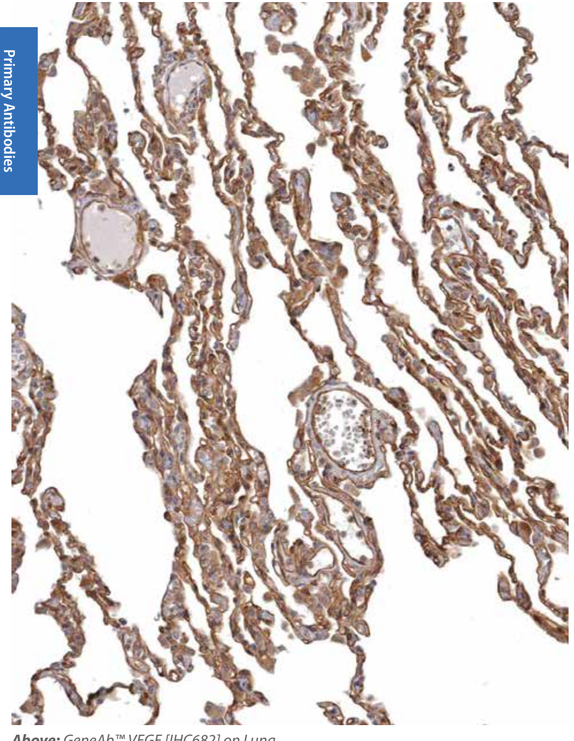
IVD: RUO:



Above: *GeneAb™ Uroplakin III [IHC681] on Renal Cancer*

VEGF

Clone: IHC682 | **Source:** Mouse Monoclonal | **Positive Control:** Astrocytoma, Hemangiosarcoma



Above: *GeneAb™ VEGF [IHC682] on Lung*

Description

Vascular Endothelial Growth Factor (VEGF) promotes vasculogenesis and angiogenesis, and mainly affects the vascular endothelium. VEGF is associated with poor prognoses of breast carcinomas, and has been shown to be elevated in rheumatoid arthritis.

References

1. Van der Loos, et. al. J Histochem Cytochem. 2010; 58:109-18. 2. Chaudhry IH, et. al. Histopathology. 2001; 91:409-15. 3. Ferrara N, et al. Nat Med. 2003; 9:669-76.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC682-100	$280
1 ml, Concentrate	IHC682-1	$1,465
7 ml, Predilute	IHC682-7	$845
3 Positive Control Slides	IHC682-PC	$445

Designations

IVD: RUO:

VHL

Clone: IHC683 | **Source:** Mouse Monoclonal | **Positive Control:** Colon and Thyroid Cancer

Description

Von Hippel-Lindau Tumour Suppressor (VHL) is a protein whose mutated form leads to von Hippel-Lindau disease, which is characterized by an upregulation of angiogenesis related factors. VHL is associated with central nervous system hemangioblastomas, clear cell renal carcinomas, and pheochromocytomas.

References

1. Esteban MA, et al. J Am Soc Nephrol. 2006; 17:1801-6. 2. Kaelin WG. Clin Cancer Res. 2007; 13:680s-684s.

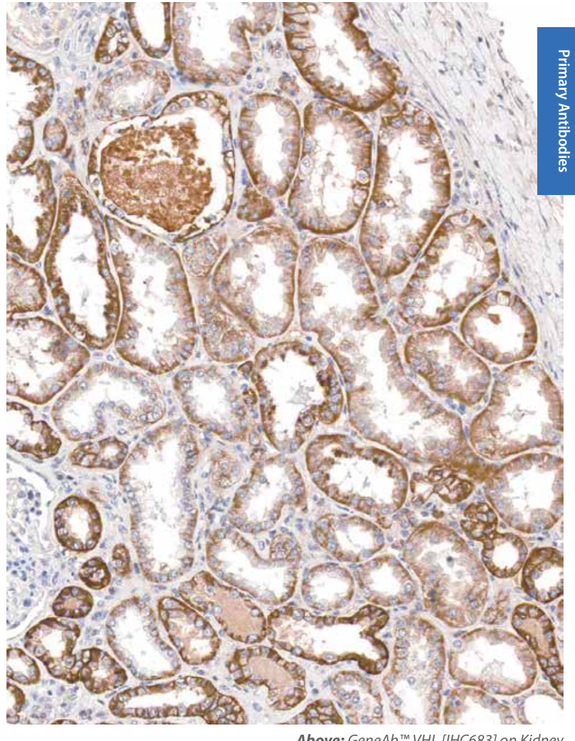
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC683-100	$210
1 ml, Concentrate	IHC683-1	$980
7 ml, Predilute	IHC683-7	$520
3 Positive Control Slides	IHC683-PC	$275

Designations

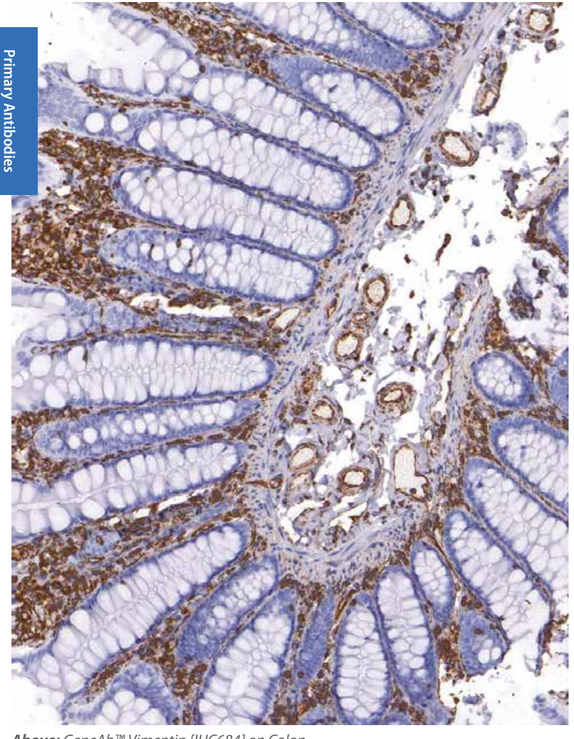
IVD: RUO:



Above: *GeneAb™ VHL [IHC683] on Kidney*

Vimentin

Clone: IHC684 | **Source:** Mouse Monoclonal | **Positive Control:** Tonsil, Lymph Node



Above: *GeneAb™ Vimentin [IHC684] on Colon*

Description

Vimentin is a component of intermediate filament in mesenchymal cells, such as endothelial cells, fibroblasts, lymphocytes, and melanocytes. Anti-Vimentin is useful for assessing whether tissue samples have been processed and preserved properly. A panel of Anti-Vimentin and Anti-Keratin is useful for differentiating melanomas from large cell lymphomas and undifferentiated carcinomas. This diagnostic grade Vimentin IVD antibody stains melanomas and schwannomas, as well as endometrial endometrioid adenocarcinomas.

References

1. Dabbs DJ, et al. Hum Pathol. 1996; 27:172-7. 2. Dabbs DJ, et al. Am J Surg Pathol. 1986; 10:568-76. 3. Yaziji H, et al. Int J Gynecol Pathol. 2001; 20:64-78.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC684-100	$125
1 ml, Concentrate	IHC684-1	$385
7 ml, Predilute	IHC684-7	$235
25 ml, Predilute	IHC684-25	$710
3 Positive Control Slides	IHC684-PC	$115

Designations

IVD: RUO:

WT1

Clone: IHC685 | **Source:** Mouse Monoclonal | **Positive Control:** Ovarian Serous Carcinoma, Mesothelioma, Kidney, Testis

Description

Wilms' Tumour Protein (WT1) is a transcription factor involved in the development of the urogenital system. Anti-WT1 is utilized in the differential diagnosis of pulmonary malignancies (nuclei staining) and small round cell tumours. Ewing's sarcomas, primitive neuroectodermal tumours, neuroblastomas, rhabdomyosarcomas, and rhabdoid tumours do not stain with Anti-WT1, but cytoplasmic staining may be observed. Although lung adenocarcinomas do not exhibit nuclear staining with Anti-WT1, the antibody may stain the cytoplasm. Anti-WT1 also stains serous ovarian carcinomas, but does not stain mucinous carcinomas of the ovary and pancreatobiliary carcinomas.

References

1. Tsuta K, et al. Appl Immunohistochem Mol Morphol. 2009; 17:126-30. 2. Marchevsky AM. Arch Pathol Lab Med. 2008; 132:397-401. 3. Ordonez NG. Am J Surg Pathol. 1998; 22:1203-14. 4. Ordonez NG. Arch Pathol Lab Med. 2005; 129:1407-14. 5. Yaziji H, et al. Mod Pathol. 2006; 19:514-23. 6. Goldstein NS, et al. Am J Clin Pathol. 2002; 117:541-5. 7. Barnoud R, et al. Am J Surg Pathol. 2000; 24:830-6.

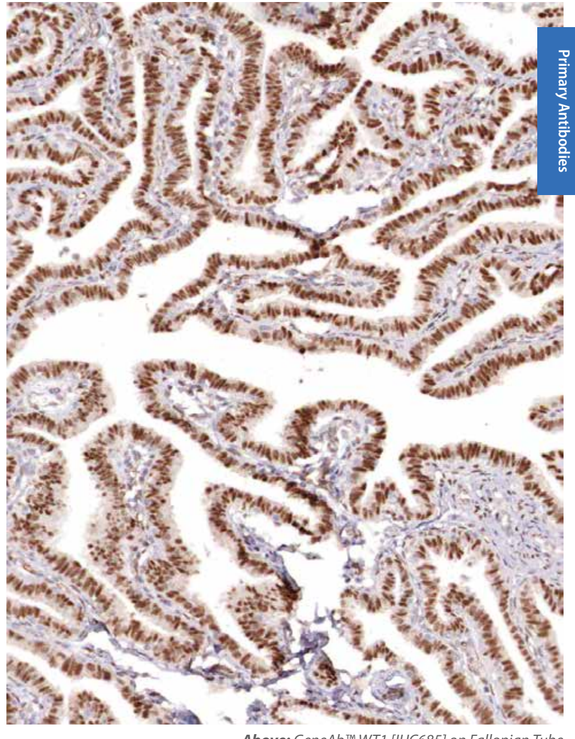
Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC685-100	$130
1 ml, Concentrate	IHC685-1	$385
7 ml, Predilute	IHC685-7	$325
25 ml, Predilute	IHC685-25	$975
3 Positive Control Slides	IHC685-PC	$160

Designations

IVD: RUO:

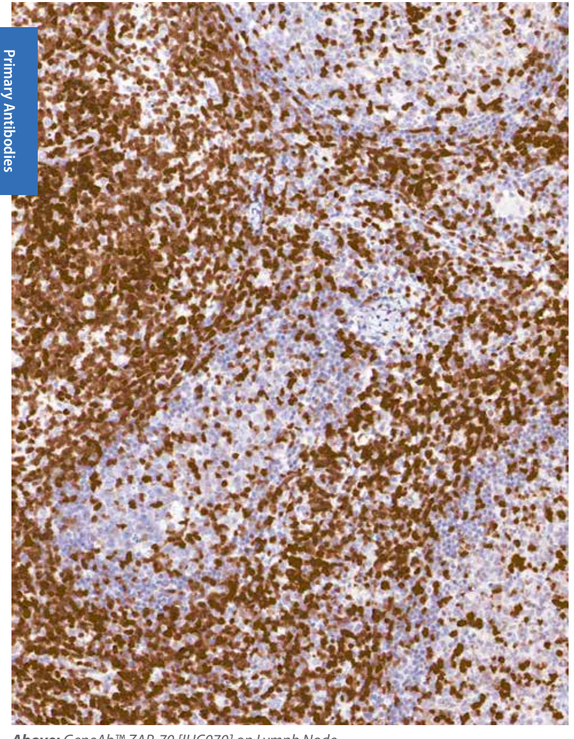


Above: *GeneAb™ WT1 [IHC685] on Fallopian Tube*

GeneAb™

ZAP-70

Clone: IHC070 | **Source:** Mouse Monoclonal | **Positive Control:** CLL/SLL, Tonsil



Above: *GeneAb™ ZAP-70 [IHC070] on Lymph Node*

Description

Zeta-Associated Protein-70 (ZAP-70) is associated with early B-lymphocyte development, natural killer cell activation, and T-lymphocyte receptor signaling. ZAP-70 is absent in normal mature B-cells and present in many B- and T-lymphocyte lymphomas. Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) can be either indolent and asymptomatic, or highly aggressive and requiring immediate chemotherapy. These two classifications of CLL/SLL have been shown to correlate with the mutational status of immunoglobulin heavy-chain variable-region (IgVH), therefore positive staining for the unmutated IgVH with Anti-ZAP-70 and negative staining for the mutated variant is very useful for the prognosis of CLL/SLL.

References

1. Wiestner A, et al. Blood. 2003; 101:4944-51. 2. Crespo M, et al. N Engl J Med. 2003; 348:1764-75. 3. Chen L, et al. Blood. 2002; 100:4609-14.

Reference Panels

Order Information

Format	Cat. No.	Price
0.1 ml, Concentrate	IHC070-100	$145
1 ml, Concentrate	IHC070-1	$610
7 ml, Predilute	IHC070-7	$425
3 Positive Control Slides	IHC070-PC	$160

Designations

IVD: RUO:

REFERENCE PANELS

Breast/Gynecological Pathology

Breast Carcinoma

	CA15-3	CA 19-9	CK 5	CK 7	CK 20	ER/PR	p63	CD117
Infiltrating Ductal Carcinoma	+	-	-	+	-	+	-	-
Adenoid Cystic Carcinoma	+	+	+	+	-	-	+	+

Cervix

	BCL2	CK 17	Ki-67	MCM3
Cervical Intraepithelial Neoplasia	-	-	+	+
Tubo-Endometrial Metaplasia	+	+	-	-
Microglandular Hyperplasia	-	-	-	-

Cervix Neoplasia

	CK 8	CK 17	p16
CIN I	-/+	-/+	+
CIN II	-/+	+	+
CIN III	+	+	+

Ovarian Carcinoma

	CA-125	CEA	PAX-8	WT1
Ovarian CA, Serous	+	+	+	+
Ovarian CA, Mucinous	-	-	-	-
Ovarian CA, Endometrioid	+	-	+	-
Ovarian CA, Clear Cell	+	-	+	-

Placental Trophoblastic Cells

	1st Trimester		2nd Trimester		3rd Trimester	
	hCG	hPL	hCG	hPL	hCG	hPL
Cytotrophoblast	-	-	-	-	-	-
Intermediate Trophoblast	1-24%	25-49%	-/+	50-74%	1-24%	1-49%
Syncytiotrophoblast	>75%	1-24%	25-49%	50-74%	1-24%	>75%

Placental Trophoblastic Proliferations

	CK OSCAR	hCG	hPL	p57	PLAP	Vimentin
Partial Mole	+	-/+	-/+	+	+	-
Complete Mole	+	+	-/+	-	-/+	-
Choriocarcinoma	+	+	-/+	-	-/+	-/+
Placental Site Tumour	+	+/-	+	+	+	+

Sex Cord Stromal Tumours

	Cal-retinin	CD99	CK 7	EMA	Inhibin	MART-1	Vimentin
Granulosa Cell Tumours	+	+	-	-	+	+	+
Sertoli-Leydig Cell Tumours	+	+	+	-	+	+	+
Gynandroblastoma	+	-/+			+		+
Gonadoblastomas	+	+	-	-	+	-	+

Uterus: Trophoblastic Proliferations

	CK Cocktail	hCG	hPL	p57	PLAP	Vimentin
Partial Mole	Strong, diffuse	Weak, diffuse	Weak, diffuse	+	+	-
Complete Mole	Strong, diffuse	Strong, diffuse	Weak, focal	-	Weak, focal	-
Choriocarcinoma	Strong, diffuse	Strong, diffuse	Weak, focal	-	Weak, focal	-/+
Placental Site Tumour	Strong, diffuse	Strong, focal	Strong, diffuse		Strong, diffuse	Strong, diffuse

Dermatopathology

Cutaneous Neoplasm

	AR	BCL2	CD10	CD34	CK 15	CK 19	CK 20	Ber-EP4
Basal Cell Carcinoma	+	+	+	-	-	+	-	+
Trichoepithelioma	-	+	-	+	+	+	+	+
Merkel Cell Carcinoma	-	+	-	-	-	+	+	+
Microcystic Adnexal Carcinoma	-	+	+/-	-	+	+	-	-/+
Sebaceous Carcinoma	+	+/-	+/-	-		-	-	+
Sebaceous Adenoma	+	+	-	-		-	-	+

Melanomas

	Nestin	SOX-10	HMB-45	S-100
Desmoplastic Melanoma	+	+	-	+
Conventional Melanoma	+	+	+	+

Merkel Cell Carcinoma vs. Cutaneous Small Cell Tumours

	CD117	CK Cocktail	CK 5&6	CK 20	Vimentin	Chromo-granin A
Merkel Cell Carcinoma	+	+	-	+	-	+
Small Cell Carcinoma	+/-	+	-	-	-	+
Lymphoma	-	-	-	-	+/-	-
Small Cell Melanoma	+	-	-	-	+	-
Squamous Cell Carcinoma	-	+	+	-	-	-

Merkel Cell Carcinoma vs. Cutaneous Small Cell Tumours (cont.)

	HMB-45	Neuro-filament	Synap-tophysin	TTF-1	CD45	S-100
Merkel Cell Carcinoma	-	+	+	-	-	-
Small Cell Carcinoma	-	-	+	+	-	-
Lymphoma	-	-	-	-	+	-
Small Cell Melanoma	+	-	-	-	-	+
Squamous Cell Carcinoma	-	-	-	-	-	-

Skin Adnexal Tumours

	CD15	CK 7	CK 20	EMA	BRST-2	S-100
Merkel Cell Carcinoma	-	-	+	+	-	-
Sebaceous Tumour	+	+	-	-	-	-
Apocrine Tumour	+/-	+	-	+/-	+	-
Eccrine Tumour	-	+	-	+	-	+

Skin: Basal vs. Squamous Cell Carcinoma

	BCL2	CK 8&18	CK Cocktail	EMA	Ep-CAM	MOC-31	UEA-1
Basal Cell Carcinoma	+	-/+	+	-	+	+	-
Squamous Cell Carcinoma	-	-	+	+	-	-	+

Skin: Dermatofibrosarcoma Protuberans (DF-SP) vs. Dermatofibroma Fibrous Histiocytoma (DFFH)

	CD10	CD34	CD163	CK Cocktail	Desmin	Factor XIIIa	NGFR	p63	S-100
DF-SP	+/-	+	-	-	-	-	+	-	-
DF-FH	+	-	-	-	-	+	-	-	-

Reference Panels

Skin: Pagetoid Tumours

	CEA	CK, HMW	CK, LMW	S-100	Vimentin
Melanoma	-	-	-	+	+
Paget's Disease	+	-	+	-/+	-
Bowen's Disease	-	+	+	-	-

Skin: Spindle Cell Tumours

	MS Actin	SM Actin	ALD-H1A1	BG8	CD10	CD31	CD34	CD99	Collagen IV	CK 8&18
Angiosarcoma	-	-	-	-	-	+	+	-	+/-	-
Atypical Fibroxanthomas	+	+	+	-	+	-	-	+	-	-
Dermatofibroma Fibrous Histiocytoma	-	-	-		+		-	-	-	
Dermatofibrosarcoma Protuberans	-	-	-		+/-		+	-	-	
DF-FH	-	-	-		+	-	-	-	-	-
DF-SP	-	-	-	-	+/-	-	+	-	-	-
Glomus Tumour	+	+	-		-	-	+/-	-	+	-
Hemangioma	-	+	-	+	-	+	+	-	+	-
Hemangiopericytoma	-	-	+		-	+	+		-	
Kaposi's Sarcoma	-	+	-	-	-	+	+	-	+/-	-
Kaposiform Hemangioendothelioma	-	-	-	-	-	+	+	-	-	+
Peripheral Nerve Sheath	+	-	+	-	-	-	-	+	+	
Smooth Muscle	+	+	+		-	-	-	-/+	-	-
Solitary Fibrous Tumour	-	-	+	-	-	-	+	+/-	-	-
Spindle Cell Melanoma	-	-	-	-	-	-	-	-	-	-
Spindle Squamous Cell Carcinoma	-	-	-	-	-	-	-	-	-	+
Squamous Cell Carcinoma	-	-	-		-	-	-	-	-	

Skin: Spindle Cell Tumours (cont.)

	CK Cocktail	Factor VIII	Factor XIIIa	FLI-1	HHV-8	NGFR	D2-40	S-100	STAT6
Angiosarcoma	-	+		+	-	-	+/-	-	-
Atypical Fibroxanthomas	-	-	+/-	-	-	-	-	-	+
Dermatofibroma Fibrous Histiocytoma			+	-		-	-	-	-
Dermatofibrosarcoma Protuberans			-			+	-	-	-
DF-FH		-	+	-	-	-	-	-	-
DF-SP		-	-	-	-	+	-	-	-
Glomus Tumour		-	-	-	-	-	-	-	-
Hemangioma	-	+		+	-	-	-	-	-
Hemangiopericytoma		-		+	-	-	-	-	+
Kaposi's Sarcoma		+	+/-	+	+	-	+	-	-
Kaposiform Hemangioendothelioma		-	-	+	-	-	-	-	-
Peripheral Nerve Sheath	-	-	-	-	-	+	+	+/-	-
Smooth Muscle	-	-	-	-	-	-	-	-	-
Solitary Fibrous Tumour		-	-	-/+	-	-	-	-	+
Spindle Cell Melanoma	-	-	-	+	-	+	+	+	-
Spindle Squamous Cell Carcinoma	+	-		-	-	-	+	-	-
Squamous Cell Carcinoma		-	-	-	-	-	+	-	-

Gastrointestinal (GI) Pathology

Ampullary Cancer

	CDX-2	MUC2	CK 17	MUC1
Intestinal Subtype	+	+	-	-
Ductal	-	-	+	+

GIST Mutation vs. Wild Type

	CD34	CD117	DOG1
GIST, Kit Mutation	+	+	+
GIST, PDGFRA Mutation	-	-	+
GIST, Wild Type	+/-	+	+

Pancreas / Pancreatic Tumours

	β-Cat-enin	CA 19-9	CD10	CD56	CDX-2	Synap-tophysin	CK 7	CK 19	E-cad-herin
Ductal Adenocarcinoma / Ductal Carcinoma	+/-	+	+/-	-	-	-	+	-	+/-
Pancreatic Adenocarcinoma	-	+	+/-	-		-		+	-
Pancreatic Endocrine Tumour					-	+	-		
Acinar Cell Carcinoma	+	-/+	+/-	-	-	-	-	+	+
Pancreatoblastoma	+	-	-	+		+		-	-
Neuroendocrine Tumour	+	+/-	-	+		+		+/-	-
Solid Pseudopapillary Tumour	+	-	+	+		-		-	+ (nuclear)
Islet Cells	+	-	-	+		+		-	-
Pancreatic Ducts	-	-	-	-	-	-	+	-	-

Genitourinary (GU) Pathology

Bladder Tissue

	SM Actin	MS Actin	Cal-ponin	Smooth-elin
Muscularis Mucosae	+	+	+	-
Muscularis Propria	+	+	+	+

Bladder: Dysplasia vs. Reactive

	CD44	CK 20	CK 5&6	Ki-67	MCM3	p53
Carcinoma-*in-situ*	-	+	-	+	+	+
Reactive Atypia	+	-	+	+	+	-
Normal Urothelium	+	+	-/+	-/+	-/+	-

Carcinomas

	CD10	CD117	CK 7	CK, HMW	Ksp-cad-herin	RCC	S100P	TFE3
Xp11 Tr RCC	+		-/+		+	+	-	+
Clear Cell RCC	+	-	-/+	-	-/+	+	-	-
Papillary RCC	+	-	+	+/-	-/+	+	-	-
Chromophobe RCC	+/-	+	+	-	+	+	-	-
Oncocytoma	+	+	-/+	-/+	+	-	-	-
Urothelial Carcinoma	+	+/-	+	+/-	-	-	+	-

Reference Panels

Germ Cell Tumours

	AFP	CD30	CD117	CK Cocktail	EMA	GPC-3	hCG	hPL	Inhibin
Seminoma (Seminoma/Dysgerminoma)	-	-	+	-	-	-	-	-	-
Embryonal Carcinoma	-	+	-	+	-	-	-	-	-
Choriocarcinoma	-	-	-	+	+	+	+	+	-
Yolk Sac Tumour	+	-	-/+	+	-	+	-	-	-
Granulosa Cell Tumour	-	-	-	-	-	-	-	-	+
Hypercalcaemic Small Cell Carcinoma	-	-	-	+	+	-	-	-	-
Mature Teratoma	+/-	-	-	+	+	-	-	-/+	
Immature Teratoma	-	-	+/-	+	+	-	+/-	-/+	
Carcinoid	-	-	-	+	-	-	-	-	-

Germ Cell Tumours (cont.)

	Oct-4	PLAP	D2-40	SALL4	SOX-2	Synap-tophysin	Vimentin
Seminoma (Seminoma/Dysgerminoma)	+	+	+	+	-	-	+
Embryonal Carcinoma	+	+	-	+	+	-	-
Choriocarcinoma	-	+	-	-	-	-	-/+
Yolk Sac Tumour	-	-/+	-	+	-	-	-
Granulosa Cell Tumour	-	-	+/-	-		-	+
Hypercalcaemic Small Cell Carcinoma	-	-	+			-	-
Mature Teratoma	-	+/-	-	-	+/-	-	+
Immature Teratoma	-	-	-	+/-	+	-	+
Carcinoid	-	-	-	-	-	+	+

Gonads: Germ Cell Tumours vs. Somatic Adenocarcinoma

	AFP	CD30	CD117	CK Cocktail	EMA	GPC-3	hCG	hPL	Inhibin
Seminoma	-	-	+	-	-	-	-	-	-
Embryonal Carcinoma	-	+	-	+	-	-	-	-	-
Choriocarcinoma	-	-	-	+	+	+	+	+	-
Yolk Sac Tumour	+	-	-	+	-	+	-	-	-
Somatic Carcinoma	-	-	-	+	+	-	-	-	-
Granulosa Cell Tumour	-	-	-	-	-	-	-	-	+
Hypercalcaemic Small Cell Carcinoma	-	-	-	+	+	-	-	-	-

Gonads: Germ Cell Tumours vs. Somatic Adenocarcinoma (cont.)

	Oct-4	PLAP	D2-40	Vimentin
Seminoma	+	+	+	+
Embryonal Carcinoma	+	+	-	-
Choriocarcinoma	-	+	-	-/+
Yolk Sac Tumour	-	+	-	-
Somatic Carcinoma	-	-	-/+	-
Granulosa Cell Tumour	-	-	+/-	+
Hypercalcaemic Small Cell Carcinoma	-	-	+	-

Kidney: Renal Epithelial Tumours

	CD10	CD117	Ep-CAM	Ksp-cad-herin	Parval-bumin	PAX-2	RCC	S100A1	Vimentin
Clear Cell RCC	+	-	-	-	-	+	+	+	+
Chromophobe RCC	-/+	+	+	+	+	+	-/+	-	-
Papillary RCC	+	+		-/+	-		+	+	+
Oncocytoma	+/-	+	-	+/-	+	+	-	+	-

Prostate: Malignant vs. Benign

	AR	CK 34βE12	CK 5&6	CK 14	p63	p504s	PSA	PSAP
Prostate Carcinoma	+	-	-	-	-	+	+	+
Benign Prostate	+	+	+	+	+	-/+	+	+

Renal Cell Carcinoma vs. Hemangioblastoma

	CD10	Cal-retinin	CK Cocktail	Inhibin	D2-40	PAX-2
Metastatic RCC	+	-	+	-	-	+
Hemangioblastoma	-	+	-	+	+	-

Squamous Cell Carcinoma vs. Urothelial Carcinoma

	COX-2	CK 34βE12	CK 5	CK 14	CK 7	CK 20	Desmo-glein 3	GATA3	URO III
Squamous Carcinoma	-	+	+	+	-	-	+	-	-
Urothelial Carcinoma	+	+	-/+	-	+	+	-	+	+

Head and Neck Pathology

Differential Diagnosis of Parathyroid vs. Thyroid Tumours

	Calci-tonin	PAX-8	Chromo-granin A	PTH	S-100	Galec-tin-3	Synap-tophysin	TTF-1
Parathyroid Tumours	-	+	+	+	-	-	+	-
Follicular Thyroid Tumours	-	+	-	-	+/-	+	-	+
Medullary Thyroid Cacinoma	+	+	+	-	-	-	+	+

Hematopathology

B-cell Lymphomas

	Annex-in AI	BCL2	BCL6	BOB.1	CD5	CD10	CD11c	CD20	CD23	CD25
Burkitt Lymphoma	-	-	+	+	-	+		+	-	
CLL/SLL	-	+	-	-/+	+	-	-/+	+	+	
Diffuse Large Cell Lymphoma	-	+	+/-	+	-/+	-/+		+	-	
Follicular	-	+	+	+	-	+		+	-	-
Hairy Cell Leukemia	+	+	-		-	-	+	+	-	+
Lymphoplasmacytic	-	+	-	+	-	-	-	+	-	-
Malt Lymphoma		+	-/+			-		+	-	
Mantle Cell	-	+	-	-/+	+	-	-	+	-	+
Marginal Zone	-	+	-		-	-	+	+	-	-
Marginal Zone BCL	-	+	-	-/+	-	-		+	-	
Splenic Marginal Zone	-	+	-		-	-			-	

B-cell Lymphomas (cont.)

	CD43	CD45	CD79a	Cyclin D1	FoxP1	IgD	Kappa	Lambda	MUM1	Oct-2
Burkitt Lymphoma		+	+	-	+	-	+/-	-/+	-	-
CLL/SLL	+	+	+	-	-	+	+/-	-/+	+	+
Diffuse Large Cell Lymphoma	-	+	+	-	+	-	+/-	-/+	+/-	+
Follicular		+	+	-	-	+	+/-	-/+	-	+
Hairy Cell Leukemia	-	+	+	+(weak)/-		-	+/-	-/+		+(weak)/-
Lymphoplasmacytic		+	+	-	-	-	+/-	-/+	+	-
Malt Lymphoma			+	-	+				-	
Mantle Cell	+	+	+	+	-	+	-/+	-/+	-	+
Marginal Zone	+	+	+	-		+	-/+	-/+	+	+
Marginal Zone BCL			+	-		-/+			+	+
Splenic Marginal Zone			+	-	-				+/-	+

B-cell Lymphomas (cont.)

	p27	PAX-5	PD-1	PU.1	TRAcP	ZAP-70
Burkitt Lymphoma	-	+	-		-	-
CLL/SLL	+	+	-	+	-	+/-
Diffuse Large Cell Lymphoma	-	+	-	+	-	-
Follicular	+	+	+	+	-	-
Hairy Cell Leukemia	-	+	-		+	-
Lymphoplasmacytic	+		-		-	-
Malt Lymphoma						
Mantle Cell	+	+	-	+	-	-
Marginal Zone		+	-	+	+/-	-
Marginal Zone BCL	+	+		+	+/-	
Splenic Marginal Zone		-				

c-Myc in DLBCL

	BCL2	CD10	CD38	CD44	TCL1
Large B-cell Lymphoma with c-Myc Rearrangement	-/+	+	+	-	+
Large B-cell Lymphoma with no c-Myc Rearrangement	+	+/-	-	+	-/+

Erythroid

	CD71	Glyco-phorin A	Hemo-globin A	Spectrin
Erythroid Hyperplasia	+	+	+	+
Erythroid Hypoplasia	+	+	+	+
Acute Erythroid Leukemia	+	+	+	+
Extramedullary Hematopoiesis	+	+	+	+
Mature Erythrocytes	-	+	+	+

Histiocytic Proliferation

	CD1a	CD68	CD163	Factor XIIIa	HAM-56	Lyso-zyme	S-100	Vimentin
Juvenile Xanthogranuloma	-	+	+	+	+	+	-	+
Langerhans Cell Histiocytosis	+	+	+	-	+	+	+	+
Dermatofibroma	-	+	-	+	-	-	-	+

Reference Panels

Hodgkin's vs. Non-Hodgkin's Lymphomas

	ALK	BCL6	BOB.1	CD15	CD30	CD45	CD79a
Anaplastic Large Cell Lymphoma	+	+/-		-	+	+	-
Angioimmunoblastic T-cell Lymphoma	-	+		-	-	+	-
Hodgkin's Lymphoma, Classic	-	-	-	+	+	-	-
Hodgkin's Lymphoma, Nodular Lymphocyte Predominant	-	+	+	-	-	+	+
T-cell Rich B-cell Lymphoma	-	+	+	-	-	+	+/-
T-cell Rich LBCL	-	+	+	-	-	+	+

Hodgkin's vs. Non-Hodgkin's Lymphomas (cont.)

	EMA	Fascin	Gran-zyme B	MUM1	Oct-2	PU.1
Anaplastic Large Cell Lymphoma	+	-	+	-	-	-
Angioimmunoblastic T-cell Lymphoma	-	-	-	-	-	-
Hodgkin's Lymphoma, Classic	-	+	-	+	-	-
Hodgkin's Lymphoma, Nodular Lymphocyte Predominant	+	-	-	-/+	+	+
T-cell Rich B-cell Lymphoma	-/+	-	-	+	+	-
T-cell Rich LBCL	-	-	-	+	+	-

Immunoglobulin, Heavy and Light Chain

	IgA	IgD	IgG	IgM	Kappa	Lambda
Cutaneous Lymphoma	-	-	-	-	+/-	-/+
Myeloma	+	-/+	+	-/+	+/-	-/+
Diffuse LBCL	-	-	+	+	+/-	-/+
Marginal Zone Lymphoma	-	-/+	-	+	+/-	-/+
SLL/CLL	-	+	-	+	+/-	-/+

Leukemia

	CD13	CD14	CD16	CD33	CD34	CD38	CD71	CD117	CD163	MPO
Acute Myeloid Leukemia with Minimal Differentiation	+	+	-	+	+	+	-	+	-	-
Acute Myeloid Leukemia without Maturation	+	-	-	+	+	-	-	+	-	+
Acute Myeloid Leukemia with Maturation	+	-	-	+	+	-	-	+	-	+
Acute Myelomonocytic Leukemia	+	+	+	+	+/-	-	-	+	+	+
Acute Monoblastic and Monocytic Leukemia	+	+	+	+	-/+	-	-	+/-	+	+
Acute Erythroid Leukemia	-	-	-	-	-/+	-	+	+/-	-	-
Acute Megakaryoblastic Leukemia	+/-	-	-	+/-	-	-	-	-	-	-
Acute Basophilic Leukemia	+	-	-	+	+/-	-	-	-	-	-
Acute Panmyelosis with Myelofibrosis	+	-	-	+	+	-	-	+	-	-

Lymph Node

	CD1a	CD14	CD21	CD35	CD68	CD163	Lyso-zyme	PD-1	S-100
Reactive Histiocytosis	-	+	-	-	+	-	+	-	-
Langerhans Cell Histiocytosis	+	+	-	-	+	+	+	-	+
Sinus Histiocytosis with Massive Lymphadenopathy	-	+	-	-	+	+	+	-	+
Follicular Dendritic Cell Sarcoma	+/-	-	+	+	-	-	-	-	-
Dermatopathic Lymphadenitis	+	-	-	-	-	+	+	-	+

Lymph Node

	CD1a	CD14	CD68	CD169
Sinusoidal Histiocytes	-	+	-	-
Tingible Body Macrophages	-	-	+	-
Plasmacytoid Monocytes	-	-	-	-
Langerhans Cell Histiocytosis	+	+	+	+/-
Interdigitating DC	+	+/-	-	-

Lymphoblastic Lymphomas, BCL vs. TCL

	CD1a	CD3	CD5	CD7	CD10	CD19	CD20	CD74	CD117	PAX-5	TdT
Lymphoblastic BCL	-	-	-	-	+/-	+	+/-	+	-	+	+
Lymphoblastic TCL	+/-	+	+/-	+	+	-	-	-	-	-	+

Lymphoma

	CD3	CD20	CD43	CD45R	CD45RO
Mature B-cell	-	+	-	+	-
Mature T-cell	+	-	+	-	+

Lymphoma

	CD20	CD30	CD38	CD45	CD79a	CD138	EMA	HHV-8	MUM1	PAX-5
Plasmablastic Lymphoma	-	+	+	-	+	+	+	-	+	-
Primary Effusion Lymphoma	-	+/-	+/-	+	-	+	+/-	+	+	-
Large B-cell Lymphoma arising in HHV8-associated Multicentric Castleman Disease	-/+		-/+	+	-	-		+		
Extranodal Marginal Zone Lymphoma with Plasmacytoid Differentiation	-		+	+	+	+			+	-

Lymphomas

	Gran-zyme B	Perforin	TIA-1
NK/T Cell Lymphoma	+	+	+
Hepatosplenic T-cell Lymphoma	-	-	+
Cutaneous T-cell Lymphoma	+	+	+
EBV+ Systemic T-lymphoproliferative Disorders	+	+	+
T-cell Large Granular Lymphocytic Leukemia	+	+	+
Adult T-cell Leukemia/Lymphoma	-	-	-
Marginal Zone	-	-	-
Marginal Zone BCL	+	+	+

Lymphomas

	BCL2	BCL6	CD15	CD30	Cyclin D1	Gran-zyme B	IMP3	MUM1
Classic Hodgkin's Lymphoma	+	-	+	+	-	-	+	+
Lymphocyte Predominant Hodgkin's Lymphoma	+	+	-	-	-	-	+	-/+

Lymphomas (cont.)

	PAX-5	SOX-11
Classic Hodgkin's Lymphoma	+	-
Lymphocyte Predominant Hodgkin's Lymphoma	+	-

Mastocytosis

	CD2	CD25	CD117	CD163	Tryptase
Mastocytosis / Systemic Mastocytosis	+	+	+	-	+
Mast Cell Leukemia	+	+	+	-	+
Reactive Mast Cells	-	-	+	+	+

Mature B-cell Lymphomas

	Annex-in A1	BCL2	CD5	CD10	CD20	CD23	HGAL	LMO2	Cyclin D1
Follicular Lymphoma	-	+/-	-	+/-	+	-	+	+	-
Diffuse Large B-cell Lymphoma	-	+	-/+	+/-	+	-	+	+	-
Small Lymphocytic Lymphoma	-	+	+	-	+	+	-	-	-
Mantle Cell Lymphoma	-	+	+	-	+	-	-	-	+
Marginal Zone Lymphoma	-	+	-	-	+	-	-	-	-
Hairy Cell Leukemia	+	+	-	-	+	-			-

Mature B-cell Neoplasms

	Annex-in A1	CD10	CD11c	CD25	CD103	CD123	Cyclin D1	DBA44	T-bet	TRAcP
Hairy Cell Leukemia	+	+20%	+	+	+	+	+(weak)/-	+/-	+	+/-
Hairy Cell Leukemia Variant	-	-	+	-	+/-	-	-	+/-	-	+/-
Splenic Marginal Zone Lymphoma	-	-	-/+	-	-	-	-	+/-	-	+/-

NK Cell Leukemia/Lymphoma

	CD2	CD3	CD16	CD56	CD57	Gran-zyme B	Perforin	TIA-1
Aggressive NK-Cell Leukemia	+	+	+	+	-	+	+	+
T-Cell Large Granular Lymphocytic Leukemia	+	+	+	-	+	+	+	+
Extranodal NK/T-Cell Lymphoma, Nasal Type	+	+	-	+	-	+	+	+

Non-Hodgkin's Lymphomas

	CD5	CD10	CD20	CD23	Cyclin D1	SOX-11
MCL	+	-	+	-	+	+
FL	-	+	+	-	-	-
SLL/CLL	+	-	+	+	-	-
MZL	-	-	+	-	-	-
LBL	-	+/-	+	-	-	+
BL	-	-	+	-	-	-/+
CD5+ DLBCL	+	+	+	-	-	-
Blastoid Variant MCL	+	-	+	-	+	+

Plasma Cell Neoplasm and Lymphoproliferative Neoplasms

	CD19	CD20	CD43	CD56	CD79a	CD138	Cyclin D1	EMA	MUM1
Plasma Cell Neoplasm	-	-/+	-	+	+	+	-/+	+	+
ALK + LBCL	-	-	-/+	-	-	+	-	+	+
Plasmablastic Lymphoma	-	-	-	-	+	+	-	+	+
HHV Associated LBCL	+/-	+/-	-	-	-	-	-	-	-
Primary Effusion Lymphoma	-	-	-	-	-	+	-	+	+
Lymphoblastic Lymphoma	+	+	-	-	+	+	-	-	+/-
Splenic Marginal Zone Lymphoma	+	+	-	-	+	-/+	-	-	+/-

Splenic Hematopoietic Proliferations in Neoplastic and Benign Disorders

	CD34	CD68	CD117	Hemo-globin A	MPO
Chronic Myelogenous Leukemia	-/+	+	+/-	-	+
Chronic Idiopathic Myelofibrosis	+/-		-/+	-	+
Myelodysplastic Syndrome	+		-/+	-	
Myelodysplastic/Myeloproliferative Disorders	-	+	-	-	+
Mastocytosis	-		+	-	+
Erythroid Disorders	-	-/+	-	+	+/-
Splenic Lymphoma	-		-	-	-/+
Acute Myeloid Leukemia	+	+	+	-	+
Polycythemia Vera	+		+	+	

T-cell Lymphomas

	CD2	CD3	CD4	CD5	CD7	CD8	CD25	CD45	CD45RO
Angioimmunoblastic	+	+	+	+	+	-	+	+	+
Lymphoblastic	+/-	+	+/-	+	+	+/-	+	+	+
Subcutaneous Panniculitis-Like	+	+	-	+	+	+/-	-	+	+
NK/T-cell Lymphoma	+	+	-	-	-/+	-	-	+	-/+
Cutaneous	+	+	+	-	+	-	-	+	-
Peripheral, NOS	+	+	+/-	+/-	+/-	-/+	+	+	+
Mycosis Fungoides	+	+	+	+	-	-	+	+	+

T-cell Lymphomas (cont.)

	CD56	CD57	Gran-zyme B	PD-1	Perforin	TCL1
Angioimmunoblastic			-	+		
Lymphoblastic			+/-	-		
Subcutaneous Panniculitis-Like	-		+	-	+	
NK/T-cell Lymphoma	+	+/-	+	-	+	+
Cutaneous			+	-/+	+	
Peripheral, NOS	-	-		-		
Mycosis Fungoides	-		+/-	-	-	

Neuropathology

Brain: CNS Tumours 1

	EMA	CK, pan	GFAP	Vimentin	Olig2	S-100
Astrocytoma	-	-	+	+	+/-	+
Oligodendrocytoma	-	-	-	+	+	-
Glioblastoma	-	+	+/-	+	+	+
Ependymoma	-	+	+/-	-	-	+
Meningloma	+	-	+/-	+	+/-	-/+

Brain: CNS Tumours 2

	CK Cocktail	EMA	GFAP	INI-1	NGFR	Neuro-filament	PR	S-100	Synap-tophysin	Vimentin
Astrocytoma	-	-	+	+	+	-	-	+	-	+
Glioblastoma	-	-	+	+	-	-	-	+	-	+
Oligodendriglioma	-	-	-	+	-	-	-	+	-	+
Ependymoma	- (+ AE1 & AE3)	-	+	+	+	-	-	+	-	-/+
Choroid Plexus Carcinoma	+	-	-/+	+	-	-	-	+	+	+/-
Central Neurocytoma	-	-	-	+	+	-	-	-	+	-
Neuroblastoma	-	-	+/-	+	+	+	-	+/-	+	+
Pineocytoma	-	-	-	+	-	-	-	-	+	
Meningloma	-	+	-	+	-	-	+	-	-	+
Schwannoma	-	-	+	+	+	-	-	+	-	+
Rhabdoid Tumours	+	+	-	-		+/-		+/-	+/-	+
Metastatic Carcinoma	+	+	-	+	-	-	-/+	-	-	-/+

Meningiomas from Histologic Mimics

	ALD-H1A1	CD34	Claudin-1	EMA	E-cad-herin	GFAP	S-100	STAT6
Meningothelial Meningioma	-	-	+	+	+	-	-	-
Atypical Meningioma	-	+	+	+	+	-	-	-
Fibrous Meningioma	-	-	-	+	+	-	+	-
Solitary Fibrous Tumour	+	+	-	-	-	-	-	+
Meningeal Hemangiopericytoma	+	+	-	-	-	-	-	-/+
Schwannoma		-	+/-	-	+	+	+	-

Retroperitoneal Neoplasms

	CD99	Chromo-granin A	GFAP	MBP	Neuro-filament	NSE	PGP 9.5	S-100	Synap-tophysin
Neuroblastoma	-	+	+/-	-	+	+	+	-	+
Ganglioneuroblastoma	-	+	+	-/+	+	+	+	+	+
Ganglioneuroma	-	+	+	+	+	+	+	+	+

Pediatric Pathology

Histiocytic Proliferation

	CD1a	CD68	CD163	Factor XIIIa	HAM-56	Lyso-zyme	S-100	Vimentin
Juvenile Xanthogranuloma	-	+	+	+	+	+	-	+
Langerhans Cell Histiocytosis	+	+	+	-	+	+	+	+
Dermatofibroma	-	+	-	+	-	-	-	+

Reference Panels

Retroperitoneal Lesions

	Chromogranin A	CD99	GFAP	Neurofilament	NSE	PGP 9.5	S-100	Synaptophysin
Neuroblastoma	+	-	-/+	+	+	+	-	+
Ganglioneuroblastoma	+	-	+	+	+	+	+	+
Ganglioneuroma	+	-	+	+	+	+	+	+
Leiomyosarcoma	-	-	-	-	-/+	-/+	-	-
Rhabdomyosarcoma	-	-	-	-	-	+	-	-
Synovial Sarcoma	-	+/-	-	-	-		-/+	-

Pulmonary Pathology

Lung Adenocarcinoma vs. Mesothelioma

	BGB	Caldesmon	Calretinin	CEA	CK 5&6	Ber-EP4
Adenocarcinoma	+	-	-	+	-	+
Mesothelioma	-	+	+	-	+	-

Lung Adenocarcinoma vs. Mesothelioma (cont.)

	E-cadherin	HBME-1	D2-40	TAG-72	TTF-1
Adenocarcinoma	+	-	-	+	+
Mesothelioma	-	+	+	-	-

Lung Squamous Cell Carcinoma vs. Adenocarcinoma

	CK 5&6	Desmocollin3	Napsin A	p63	SOX-2	TTF-1
Lung Adenocarcinoma	-	-	+	-/+	-/+	+
Lung Squamous Cell Carcinoma	+	+	-	+	+	-

Pleura: Adenocarcinoma vs. Mesothelioma

	Caldesmon	Calretinin	CEA	CK 5	CK 5&6	Ep-CAM	E-cadherin	HBME-1	Napsin A	D2-40
Adenocarcinoma	-	-	+	-	-	+	+	-	+	-
Mesothelioma	+	+	-	+	+	-	-	+	-	+

Pleura: Adenocarcinoma vs. Mesothelioma (cont.)

	TAG-72	TTF-1	TBM	WT1
Adenocarcinoma	+	+	-	-
Mesothelioma	-	-	+	+

Soft Tissue Pathology

Histiocytic/Dendritic Cell Lesions

	CD1a	CD21	CD23	CD35	CD68	CD163	Langerin	Lysozyme	S-100
Langerhans Cell Histiocytosis	+	-	-	-	+	+	+	+/-	+
Rosai-Dorfman Disease	-	-	-	-	+	+	-	+	+
Follicular Dendritic Cell Sarcoma	-	+	+	+	+/-	+/-	-	-	-
Interdigitating Dendritic Cell Sarcoma	-	-	-	-	+/-	+	-	+	+
Histiocytic Sarcoma	-	-	-	-	+	+	-	+	+/-
Juvenile Disseminated Xanthogranuloma	-	-	-	-	+	+	-	+	+/-

Muscle Malignant Tumours

	SM Actin	MS Actin	Myo-genin	PGP 9.5	Caldes-mon	Myo-globin	Cal-ponin	Vimentin	INI-1
Leiomyosarcoma	+	+	-	-	+	-	+	+	
Rhabdomyosarcoma	-/+	-/+	+	+	-	+	-	+	+

Small Blue Round Cell Tumours

	MS Actin	SM Actin	Caldes-mon	Cal-ponin	CD45	CD57	CD99	CK Cocktail	FLI-1
Lymphoblastic Lymphoma	-	-	-		+	-	+	-	+
Leiomyosarcoma	+	+	+	+	-	+/-	-	-/+	-
Rhabdomyosarcoma	+	-	-	-	-	-	-	-	-
Neuroblastoma	-	-	-		-	+	-	-	-
Embryonal Carcinoma	-	-			-	+	-	+	-
PNET/ES	-	-		+	-	+	+	-/+	+
DSRCT	-	-			-	+/-	-	+	+
Medulloblastoma	-	-			-	+	-	-	-

Small Blue Round Cell Tumours (cont.)

	INI-1	Myo-genin	Myo-globin	PGP 9.5	Vimentin	WT1
Lymphoblastic Lymphoma	+	-	-		+	-
Leiomyosarcoma		-	-	-	+	-
Rhabdomyosarcoma	+	+	+	+	+	-
Neuroblastoma	+	-	-	+	+	-
Embryonal Carcinoma	+	-	-	+	-	-
PNET/ES	+	-	-	+	+	-
DSRCT	+	-	-	-	+	+
Medulloblastoma	+	-			-	

Soft Tissue Neoplasms

	MS Actin	SM Actin	Cal-retinin	CD34	CD56	CK Cocktail	Desmin	HMB-45	S-100	TFE3
Alveolar Soft Part Sarcoma	+	+	-	-	-	-	-	-	-	+
Clear Cell Sarcoma	-	-	-	-	-	-	-	+	+	-
Leiomyosarcoma	+	+	-	-/+	+	-/+	+	-	-	-
PEComa	-	+	+	-	+	-	-	+	+	-

Soft Tissue Sarcoma

	MS Actin	SM Actin	Cal-ponin	Cal-retinin	CD34	CD56	CD99	CK Cocktail	Desmin	EMA
Alveolar Soft Part Sarcoma	+	+		-	-	-	-	-	-	-
Clear Cell Sarcoma	-	-		-	-	-	-	-		
Desmoplastic Small Round Cell	-	-		-	-	-	-	+		
Epithelioid Sarcoma	-/+	-	-	-	+	-	-	+	-	+
Leiomyosarcoma	+	+			-/+	+		-/+	+	-/+
Mesenchymal Chondrosarcoma	-	-		+	-/+	-	+	-		
Myxoid Chondrosarcoma	-		+/-	+	-/+	-		-		-
PEComa	-	+		+	-	-	-	-		
PNET/ES	-	-		-	-	-	+	-/+		
Rhabdomyosarcoma	-/+	-/+			-	+		-	+	-
Synovial Sarcoma	-	-	-	+/-	-	+	+	+	-	+

Soft Tissue Sarcoma (cont.)

	Myo-genin	S-100	TFE3	TLE1
Alveolar Soft Part Sarcoma	-	-	+	-
Clear Cell Sarcoma		+	-	-
Desmoplastic Small Round Cell		-	-	-
Epithelioid Sarcoma	-		-	-
Leiomyosarcoma	-		-	
Mesenchymal Chondrosarcoma		+/-	-	-
Myxoid Chondrosarcoma				-
PEComa		-	-	-
PNET/ES		+	-	-
Rhabdomyosarcoma	+		-	
Synovial Sarcoma	-	-/+	-	+

Soft Tissue Tumour

	MS Actin	SM Actin	ALK	Cal-ponin	CD34	CD99	CK Cocktail	Desmin	EMA	FLI-1
Alveolar Soft Part Sarcoma	+	+	-		-	-	-	-		
Clear Cell Sarcoma	-	-	-		-	-	-			
Desmoplastic Small Round Cell	-	-	-		-	-	+	+	-	
Epithelioid Sarcoma	-/+	-	-		+	-	+	-	+	
Fibrous Histiocytoma	-	+	-			-	-	-		
Inflammatory Myofibroblastic Tumour	+	+	+		-	-	-			
Leiomyosarcoma	+	+		+		-	-/+			-
Myxoid Chondrosarcoma	-	-	-		-/+		-	-	-	
PEComa	-	+	-			-	-	+/-		
PNET/ES	-	-	-	-	-	+	-/+	-		+
Rhabdomyosarcoma	-/+	-/+		-		-	-			-
Synovial Sarcoma	-	-	-		-	+	+	-	+	

Soft Tissue Tumour (cont.)

	INI-1	Myo-genin	PGP 9.5	S-100	TFE3	TLE1
Alveolar Soft Part Sarcoma				-	+	-
Clear Cell Sarcoma				+	-	-
Desmoplastic Small Round Cell				-	-	-
Epithelioid Sarcoma				-	-	-
Fibrous Histiocytoma				-	-	-
Inflammatory Myofibroblastic Tumour				-	-	-
Leiomyosarcoma		-	-			
Myxoid Chondrosarcoma				+/-	-	-
PEComa				-	-	-
PNET/ES	+	-	+	+	-	-
Rhabdomyosarcoma	+	+	+			
Synovial Sarcoma				-	-	+

Vascular Tumours

	CD34	ERG	Factor VIII	FLI-1	HHV-8	D2-40
Hemangioma	+	+	+	+	-	-
Kaposi's Sarcoma	+	+	+	+	+	+
Hemangioendothelioma	+	+	-	+	-	-
Angiosarcoma	+	+	+	+	-	+/-
Colorectal Adenocarcinoma	-	-	-	-/+	-	-
Invasive Ductal Carcinoma	-	-	-	-/+	-	-

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