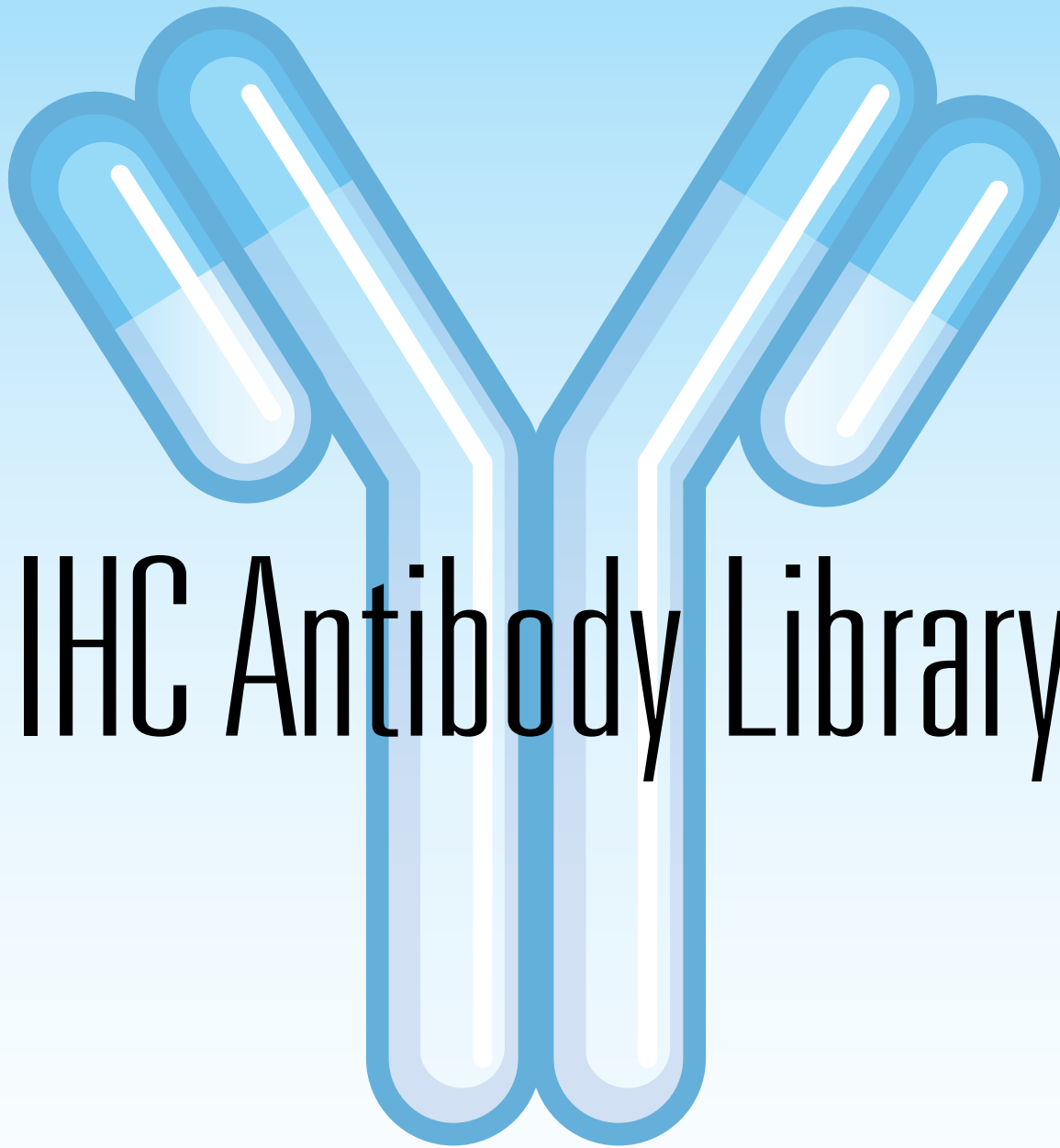# IMMUNOHISTOCHEMISTRY

IHC Antibody Library

YOSEMITE PATHOLOGY™
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Immunohistochemistry

Our advanced laboratory performs immunohistochemical (IHC) stains for the entire range of clinically relevant tissue markers.

- Over 125 antibodies
- TAT – 24-48 hours
- Technical component only or with global interpretation

Our extensive library of antibodies includes markers for tumor differentiation, evaluation of hematologic malignancies and conditions, detection of hormone receptors, and identification of viruses, among others. Our specialized technologists are extensively trained and highly proficient with the most advanced immunohistochemical methods. New antibodies are added to our inventory on a regular basis as new immunohistochemical stains are developed.

List of IHC Stains

Stain Name	Antibody	Description
Actin	(HHF35) Muscle Specific	Helps to identify smooth muscle tumor and myoepithelial cells
AE1/AE3 (Cytokeritan Cocktail)	Cytokeratin AE1/AE3	Can be used to differentiate epithelial from non-epithelial tumors
AFP (Alpha-1-Fetoprotein)	Polyclonal Anti-human	Helps to identify hepatocellular carcinomas, gonadal and extragonadal yolk sac tumors and mixed germ cell tumors
ALK-1	ALK-1	Helps to identify anaplastic large cell lymphomas
AMACR (P504S)	13H4	Aids in the classification of premalignant high-grade prostatic intraepithelial neoplasia and prostate adenocarcinoma
APP (Amyloid Precursor Protein)	APP	Helps with the identification of Alzheimer's Disease
Arginase-1	Rabbit Monoclonal	Helps to distinguish hepatocellular carcinoma from a metastatic tumor to the liver
BCL1 (Cyclin D1)	SP4	Useful in identification of mantle cell lymphomas
BCL2	Clone 124	Useful in identification of follicular lymphomas and disease progression
BCL6	PG-B6p	Useful in identification of follicular lymphoma, DLBCL and Burkitt Lymphoma
BER-EP4 (Epithelial Antigen)	BER-EP4	Helps to differentiate carcinomas from mesotheliomas
Beta-Catenin	Beta-Catenin	Used to distinguish deep fibromatosis from other benign and malignant fibroblastic and myofibroblastic lesion, primary adenocarcinoma of the bladder and secondary involvement by colorectal adenocarcinoma, distinguish hepatocellular carcinoma from focal nodular hyperplasia, and aid in the diagnosis of solid pseudopapillary neoplasms
CA125	M11	Useful in the idenification of ovarian carcinomas
CA19-9	116-NS-19-9	Useful in the identification of GI carcinoma
Calponin	Clone CALP	Myoepithelial marker, in situ vs. infiltrating breast carcinoma
Calretinin	DAK Calret 1	Most specific and reproducible positive marker of epithelial mesothelioma

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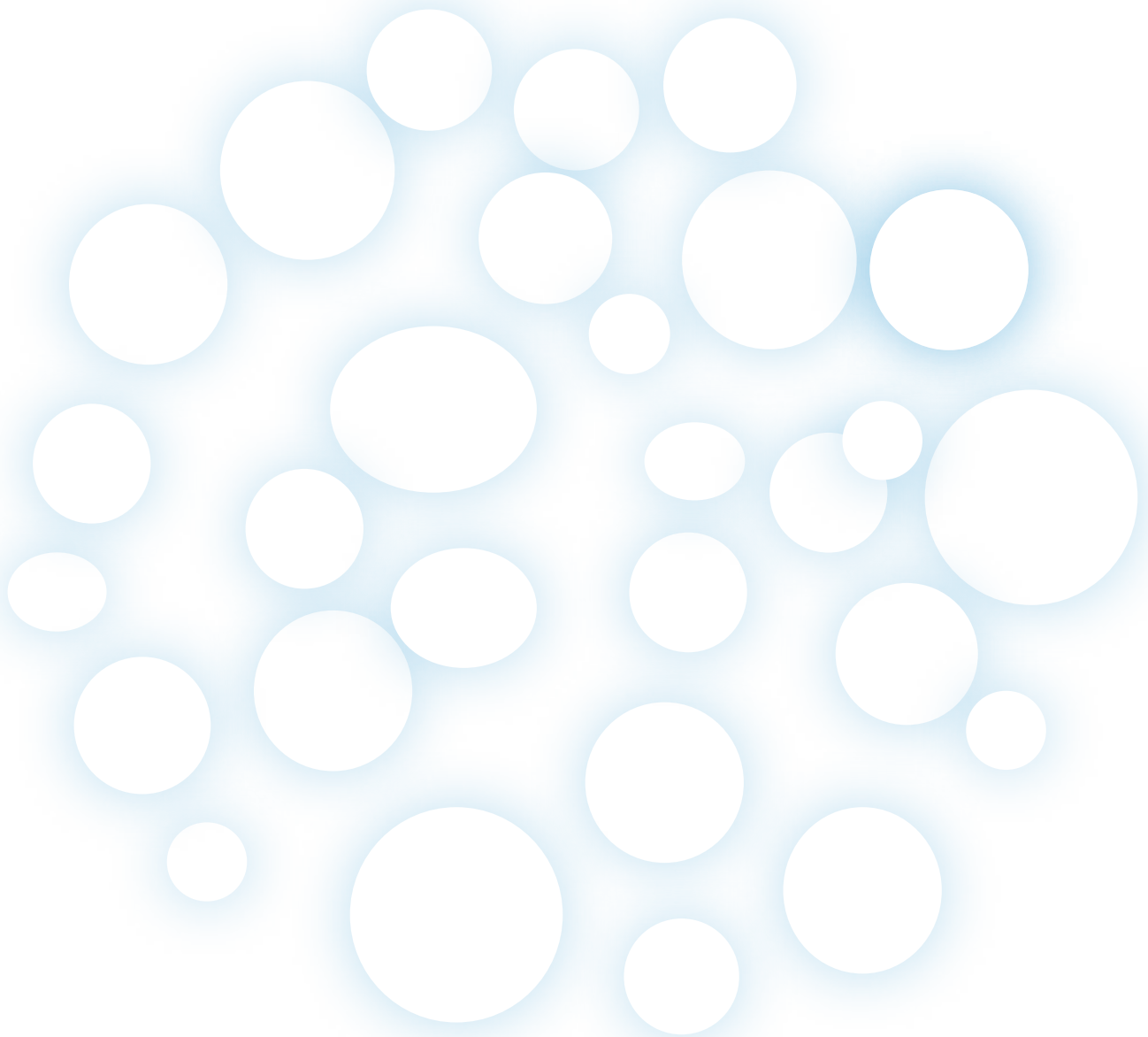| Stain Name	Antibody	Description
CAM 5.2	CAM 5.2	This antibody is used to aid in the identification of tumors of epithelial origin and in distinguishing carcinomas from other malignant tumors of non-epithelial origin
Carbonic Anhydrase (CA IX)	M75	Helpful in clear cell renal cell carcinoma, and strong diffuse-to multifocal staining in large majority of urothelial carcinomas, as opposed to extremely weak and focal staining in collecting duct carcinoma
CD10	56C6	Expressed in early lymphoid progenitor and normal germinal center cells
CD117	c-kit (polyclonal)	Aid in the differentiation of GIST, management of (Gleevec) therapy
CD138	MI 15	Positive in B-cell precursors, plasma cells, myeloma
CD15	Carb-3	Useful in the identification of Reed-Sternberg cells and Hodgkin lyphomas
CD1a	Clone: 010	Expressed on cortical thymocytes, Langerhans cells, and dendritic cells
CD20	Pan B-Cell	Labels normal and neoplastic B-cells and if absent from plasma cells
CD21	IF8	Expressed on mature B-cells, folllicular dendritic cells (FDC)
CD23	DAK-CD23	Useful in distinguishing B-cells CLL/SLL from other entities
CD3	Pan T-cell	Labels normal and neoplastic T-cells
CD3/CD20	CD3/CD20 double stain	Differentiates between B and T cells
CD30	BER-H2	Labels Reed-Sternberg cells, ALCL, T-cell lymphomas, germ cell tumors
CD31	JC7041	Endothelial cells and prognostic marker for tumor angiogenesis
CD34	Hematopoietic Progenitor QBEnd 10	Expressed on lymphoid, myeloid, endothelial GIST
CD4/CD8	MT310 & DK25	Used to differentiate cutaneous T-cell lymphomas, including mycoses fungoides
CD43	T-cell DF-T1	Diagnosis of T-cell lymphoma and a subset of B-cell lymphoma
CD44	DF1485	Transitional carcinoma-in-situ vs. non-neoplatic changes in the urothelium
CD45 (LCA)	2B11+PD7/26	Labels all hematopoietic cells
CD5	SP19	Useful in the identification of B-cells, MCL, HCL, CLL/SLL, T-cells, thymic carcinomas
CD56	123C3	Neuroedrocrine marker, NK cells
CD68	KP1	Labels macrophages myeloid precursors, preipheral blood granulocytes
CD7	Clone: CBC.37	Lables immature and mature T-lymphocytes and T-cell Leukemia
CD79a	Pan B-cell JBC1171	Acute leukemias, B-cell lymphomas, and in some myelomas
CD99	12E71	Expressed by Ewing's sarcoma cells and lymphoblastic leukemia/lymphoma
CDX2	DAK-CDX2	Expressed in primary and metastatic colorectal and gastric carcinomas
CEA	Carcinoembyronic Antigen	Useful in identifying the origin of various metastatic adenocarcinomas
Chromogranin A	Chromogranin A (polyclonal)	Useful in identification of neuroendocrine tumors
CK19	RCK 108	Useful in the distinction of liver metastasis from hepatocellular carcinomas
CK20	Ks20.8	Found in colon, ovarian, stomach, bile, pancreas and Merkel Cells

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Stain Name	Antibody	Description
CK5/6	D5 / 16B4	Labels mesotheliomas, transitional and squamous cell carcinomas
CK7	OV-TL 12/30	Identify positive lung and breast and negative colon and prostate cells
CK903	34βE12	Can be used for the identification of basal cell layer in prostate tissue
CMV	DDG9 + CCH2	Useful in identification of CMV infection
Collagen IV	CIV 22	Useful in detecting the loss of parts of basement membrane in carcinomas
D2-40	D2-40	Lymphatic invasion of primary tumors; seminomas and mesotheliomas
Desmin	D33	Reacts with leiomyosarcomas and cells such as rhabdomyosarcomas
Dog-1	DOG1.1	Used as a very sensitive and specific marker for GIST
EBER-ISH	ISH	Used in the detection of the Epstein Barr Virus (EBV) RNA
EBV	CS.1-4	Used in the detection of the Epstein Barr Virus (EBV)-positive lymphoblastoid cell lines and EBV infected B-cell immunoblasts in infectious mononucleosis
E-cadherin	NCH-38	Useful in the differentiation of ductal and lobular carcinomas of the breast
EMA	E29	Stains normal and neoplastic cells from various carcinomas
ER	EP1	Predicts response of breast cancer to anti-hormonal therapy, such as tamoxifen
ERG	EP111	Used to identify prostate carcinoma; also as an endothelial cell marker
Factor VIII (Wilm's Tumor)	polyclonal anti-VWF	Diagnosis of vascular neoplasms
Factor XIIIa	E980.1	Differentiate between dermatofibroma and dermatofibrosarcoma
GATA3	GATA3	Used in the IHC workup panel for unknown primary carcinomas, when carcinomas of the breast or urinary bladder are a possibility
GCDFP-15	Gross Cystic Disease Fluid Protein	Breast carinoma, salivary duct carcinoma and apocrine epithelia
GFAP	polyclonal	Differentiate the primary gliomas from metastatic lesions in the brain
Glypican-3	Glypican-3	Differentiate hepatocellular carcinomas from normal liver tissue and benign hepatic lesion
HBME-1	(clone HBME-1)	Reacts with mesothelial cells, mesotheliomas and some (20-30%) carcinomas
h-Caldesmon	h-CD	Helps identify smooth muscle tumors
HCG(chorionic gonadotropin)	Polyclonal	Identification of gestational trophoblastic tumors derived from the placenta
Helicobacter pylori	B0471	Reacts with H. pylori on the surface of epithelial cells of stomach biopsies
HEP-PAR1 (Hepatocyte)	OCH1E5	Differentiate hepatocellular carinomas from adenocarinomas
HER2 DISH	DNA Probe	HER2 protien over-expression and aids in assessment of patients being considered for Herceptin treatment
HER2 IHC	Herceptest	HER2 protien over-expression, patients may benefit from trastuzumab (Herceptin) therapy
Hgb A	Polyclonal	Useful in the detection of red blood cell precursors
HHV-8	13B10	Identification of the latent nuclear protein of the human herpes virus 8 in Kaposi's Sarcoma, multicentric Castleman's disease, and primary effusion lymphoma
HMB 45	HMB45	Expressed on melanomas and tumors of melanocytic differentiation
HSV1	Polyclonal	Detection of HSV 1 in human cellular material

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Stain Name	Antibody	Description
HSV2	Polyclonal	Detection of HSV 2 in human cellular material
Inhibin	R1	Differentiation between adrenocortical tumors and renal cell carcinoma
Kappa- ISH	DNA Probe	Reacts with immunoglobulin Kappa-light chain mRNA
Kappa Light chain	Polyclonal	Reacts with immunoglobulin Kappa-light chain
Kappa/Lambda Double stain	KDB-1 + N/A	Differentiation between Kappa and Lambda by IHC
Kappa/Lambda Double stain - ISH	DNA Probe	Differentiation between Kappa and Lambda by mRNA.
Ki67	MIB-1	Labels proliferating cells in late G1-, S-, M-, and G2 phases of the cell cycle
Lambda Light chain	Polyclonal	Reacts with immunoglobulin Lambda-light chain
Lambda- ISH	DNA Probe	Reacts with immunoglobulin Lambda-light chain mRNA
Lysozyme (Muramidase)	Polyclonal	Helps to identify myeloid cells, monocytes, histiocytes, and poorly differentiated leukemic monoblasts. Lysozyme is also expressed in myeloproliferative disorders.
Mammaglobin	304-1A5	Useful in the identification of breast carcinoma
Melan A	A103	Melanomas, adrenocortical carincomas and sex cord tumors of the gonads
Microinvasion cocktail (CK5/6, p63, CK8/18)	CK 5/6 & p63 with CK8/18	Distinguishing DCIS from microinvasive breast carcinoma
MITF	MITF	Aids in the classification of melanoma
MMR IHC Panel for MSI (MLH1, MSH2, MSH6, PMS2)	ES05,F811,EP49, EP51	Absence correlates with a mismatch repair gene defect in the respective gene
MOC31	MOC 31	Helps to differentiate carcinomas from mesotheliomas
MPO	Myeloperoxidase	Useful in differentiating between myeloid and lymphoid leukemias
MUM 1	MUM1p	Associated with poor prognosis of patients with diffuse large B-cell Lymphoma
Myo D1	(clone: 5.8A)	Stains majority of rhabdomyosarcomas of various histological subtypes
Napsin A	Polyclonal	Used in the identification of pulmonary adenocarcinomas
NSE	BBS/NC/VI-H14	Neuroendocrine tumors
Oct-4	MRQ-10	High sensitivity and specificity in seminoma/dysgerminoma, embryonal carcinoma and a germ component of gonadoblastoma
P16	INK4a	Overexpression reported for some cancer entities
P40	BC28	Used as an ancillary tool for a diagnosis of pulmonary squamous cell carcinoma
P53	DO-7	Overexpression associated with high proliferative rates
P57	Kp10	Useful in the identification of complete moles versus partial mole or hydropic abortus
P63	BC4A4	Marker of myoepithelial and basal cells
PAX5	BC/24	Labels normal and neoplastic B-cells
PAX8	Polyclonal	Identifies clear cell, chromophobe and papillary renal carcinoma, negative in urothelium; stains tumors of Mullerian origin
PD-L1 22C3	22C3	Used in non-small cell cancer of lung to see if a patient is eligible for Keytruda®.

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Stain Name	Antibody	Description
PD-L1 28-8	28-8	Used in non-squamous, non-small cell cancer of lung to see if a patient is eligible for Opdivo®.
Phosphohistone H3 (PHH3)	PHH3	PHH3 is a core histone protein, one of the major proteins that reach a maximum for chromatin condensation during mitosis; it serves as a mitotic marker to separate mitotic figures from apoptotic bodies and karyorrhectic debris (due to their lack of phosphorylations)
PIN4 Triple Stain (CK5/14, p63, P504S)	P504S (AMACR) & P63 & HMW CK (XM26 + LL002 + BC4A4 + N/A)	Helps with diagnosing prostatic intraepithelial neoplasia
PLAP	8A9	Useful in the identification of seminoma and embryonal carcinomas
PR	PgR 636	Predicts response of breast cancer to anti-hormonal therapy, such as tamoxifen
PSA	Polyclonal	Useful in the identification of metastasis or prostatic origin
RCC	SPM314	Expressed in renal cell carcinomas and normal kidney tissue
S100	Polyclonal	Schwannomas, ependymomas, astrogliomas, benign/malignant melanomas
SMM-HC	SMMS-1	Labels smooth muscle and myoepthithelial cells, and sclerosing breast lesions
SOX-10	BC34	Sensitive marker for neoplasms of neural crest origin (eg Melanoma) and does not label carcinomas
SOX-11	MRQ-58	Specific marker for cyclin D1-positive and cyclin D1-negative MCL
Synaptophysin	DAK-SYNAP	Identification of normal neuroendocrine cells and neuroendocrine neoplasms
TdT	Polyclonal	Helpful for the diagnosis of acute lymphoblastic lymphoma/leukemias
Thrombomodulin	1009	Labels most mesotheliomas with a membranous staining pattern
Thyroglobulin	Polyclonal	Identification of thyroid carcinomas of the papillary and follicular types
TTF-1	8G7G3/1	Reactive with normal and neoplastic thyroid and lung adenocarcinomas
TTF-1/Napsin A (Double stain) lung adenocarcinoma	8G7G3/1 + NA	A useful marker for identifying lung adenocarcinoma
Vimentin	V9	Mesenchymal cells, lymphocytes, sarcomas, melanomas

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