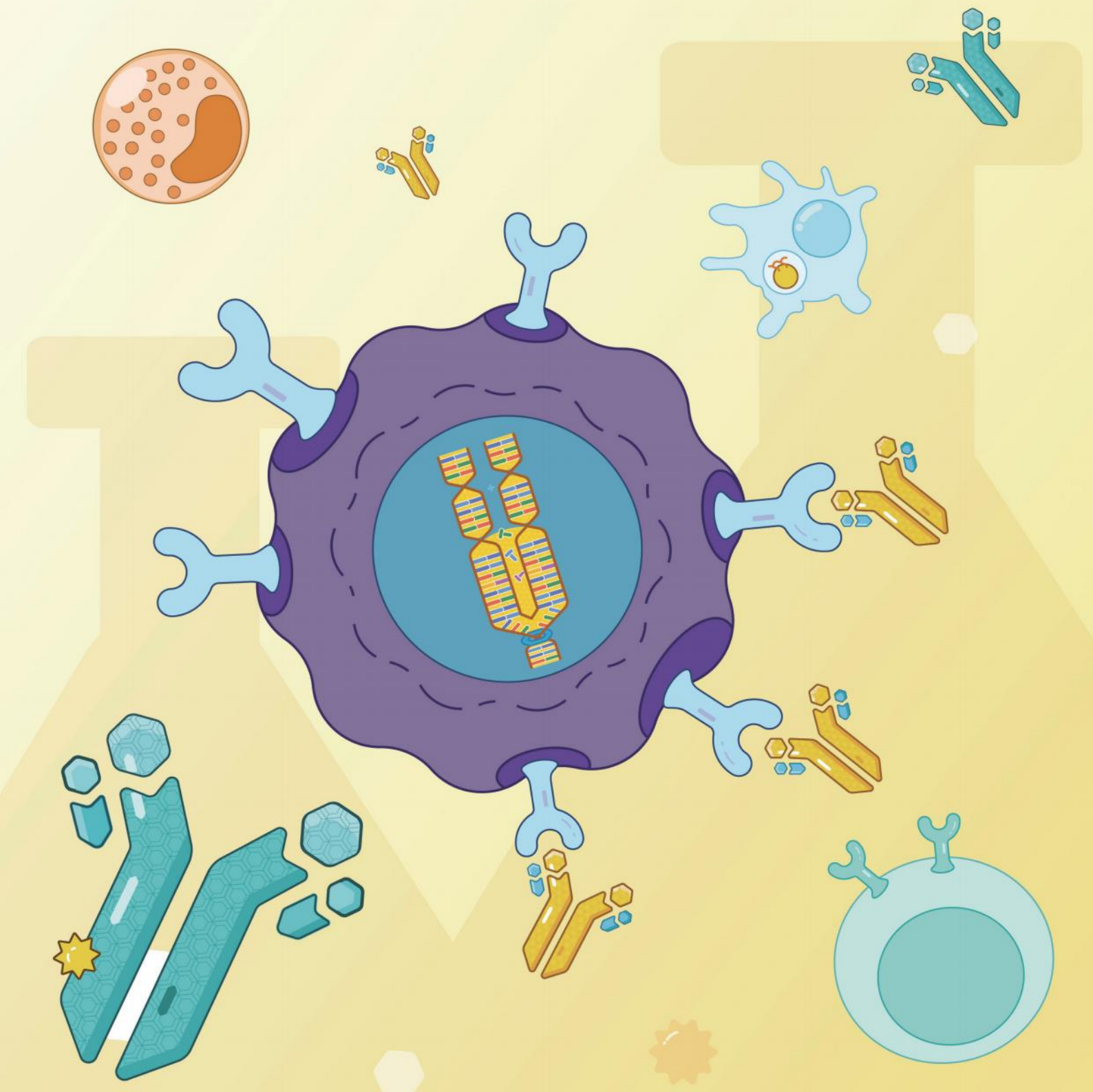
ABclonal Technology®

Research Tools for Tumor Immunology



Company Profile

Antibody | Protein | ELISA Kits | Enzyme | NGS | Service

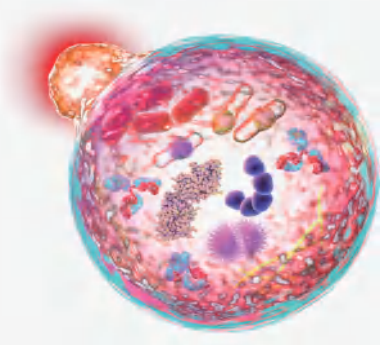
ABclonal is an innovative growth company with the aim to provide reliable and cost-effective products and services for both basic and translational research in the cutting-edges of biomedical science. Innovation is our DNA. ABclonal has established R&D centers in the worldwide with different focuses to support technical innovation and product development for protein science and molecular biology. We always carefully listen to the opinions and feedback from talented scientists across the globe, quickly translate their needs into our product development pipeline, dedicating to develop the valuable research tools based on state-of-the-art technologies to meet the needs of innovation in a timely manner.

Guide

Tumor immunology is a discipline that studies the relationship between tumor antigens, immune function, and tumor development and prognosis. It encompasses basic research on host-tumor interactions, developmental therapy in model systems, early patient transformation studies, and late-stage clinical trials, with the ultimate goal of developing tumor treatment methods. The direction of tumor immunology research varies according to the type of tumor, encompassing endogenous anti-tumor immunity, tumor microenvironment, pro-tumor inflammation, cancer antigens, vaccines, cell therapy, cytokines, immune regulation, immune suppression, and comprehensive immune modulation in cancer treatment. Since 2011, ABclonal has developed research tools for tumor immunology through the SMab™ recombinant rabbit monoclonal antibody platform and its own molecular research center.

Content

Tumor Immune Microenvironment

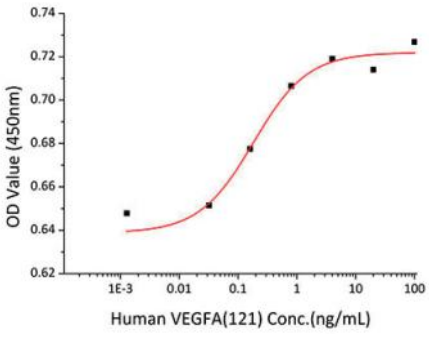


The tumor immune microenvironment (TIME) plays a critical role in regulating tumor progression and the response to chemotherapy. Studies focusing on tumor immune microenvironment (TIME) mainly concerns about the function, phenotype and composition of various tumor infiltrated immune cells, such as T lymphocytes, B lymphocytes, natural killer (NK) cells,tumor-associated macrophages (TAM), dendritic cells (DC), neutrophils , and stromal cells as well. In progressing cancers, neither the tumor nor the TIME is static. Reciprocal interactions between tumor and associated immune and stromal cell types evolve as the tumor grows, thus allowing for modulation of both tumor cell intrinsic and extrinsic processes. At the same time,oncogene-driven expression of cytokines critical for the recruitment and phenotype of immune cells, with potent effects to build an immunosuppressive TIME.

Tumor Angiogenesis

Tumor development is a complex process that involves various steps such as vascular endothelial matrix degradation, endothelial cell migration, proliferation, formation of vascular loops, and the development of a new basement membrane. Angiogenesis in tumors occurs due to the release of angiogenic factors by tumor cells, activating endothelial cells and promoting their proliferation and migration. Additionally, paracrine secretion of vascular growth factors by endothelial cells also plays a role in stimulating the growth of tumor cells.

Recombinant Human VEGF-A/VEGF121 Protein (RP01162)



Recombinant Human VEGF-A promotes the proliferation of HUVEC human umbilical vein endothelial cells. The ED_{50} for this effect is 0.09-0.36ng/mL. (Self-checking data)

Vascular endothelial growth factor (VEGF), also known as vascular permeability factor (VPF) and VEGF-A, plays a crucial role in vascular formation in both fetuses and adults. As a member of the PDGF/VEGF family, VEGF-A exists as a disulfide-bonded homodimer. This glycosylated mitogen acts specifically on endothelial cells, promoting angiogenesis, cell growth, migration, and inhibiting apoptosis and tumor growth. Additionally, VEGF-A acts as a vasodilator and increases vascular permeability, originally earning it the name vascular permeability factor.

Recommended

Hot-selling Proteins for Angiogenesis

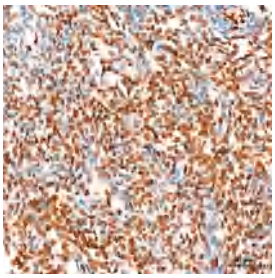
Protein	Cat.No.	Product Name	Reactivity	Gene ID
VEGF-A	RP01162	Recombinant Human VEGF-A/VEGF121 Protein	Human	7422
VEGF-A	RP01150	Recombinant Human VEGF-A/VEGF165 Protein	Human	7422
EGF	RP01030	Recombinant Human EGF Protein	Human	1950
EGF	RP01684	Recombinant Mouse EGF Protein	Mouse	13645
IGF-I	RP00996	Recombinant Human IGF-I Protein	Human	3479
bFGF	RP01042	Active Recombinant Human FGF-2/bFGF Protein	Human	2247
bFGF	RP01345	Recombinant Mouse FGF-2/bFGF Protein	Mouse	14173
TGF-beta 1	RP01167	Recombinant Mouse Latent TGF-beta 1 Protein	Mouse	21803
TGF-beta 1	RP01458	Active Recombinant Human Mature TGF-beta 1 Protein	Human	7040
TNF-alpha	RP01071	Recombinant Mouse TNF-alpha Protein	Mouse	21926
TNF-alpha	RP00001	Recombinant Human TNF-alpha Protein	Human	7124

[KO Validated] FGF2 Rabbit mAb (A11488)——Citation (3)

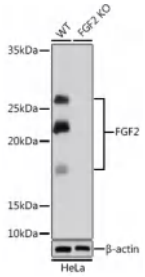
Application: IHC-P, IF/ICC, WB

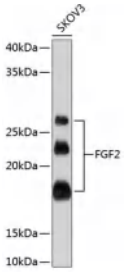
Reactivity: H, M, R

The protein encoded by this gene is a member of the fibroblast growth factor (FGF) family. FGF family members bind heparin and possess broad mitogenic and angiogenic activities. This protein has been implicated in diverse biological processes, such as limb and nervous system development, wound healing, and tumor growth.



Human lung squamous carcinoma





Recommended

Research Tools for Angiogenesis

Product Category	Targets	Cat.No.	Product Name	Application	Reactivity
Growth factor	FGF2	A11488	[KO Validated] FGF2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	PDGFB	A22035	PDGFB Rabbit mAb	IHC-P, WB	H, M, R
	TGF beta 1	A22296	TGF beta 1 Rabbit mAb	IF/ICC, WB	H, R
	VEGF-D	A19242	VEGF-D Rabbit mAb	WB	H, M, R

Product Category	Targets	Cat.No.	Product Name	Application	Reactivity
Growth factor receptor	VEGFR	A19132	VEGFR1 Rabbit mAb	WB	M, R
		AP1385	Phospho-VEGF Receptor 2-Y1175 Rabbit mAb	WB	H
	FGFR	A21219	FGFR1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A19051	FGFR2 Rabbit mAb	WB	H, M, R
		A19052	FGFR3 Rabbit mAb	IHC-P, WB	H, M, R
		A9197	FGFR4 Rabbit mAb	IHC-P, WB	H, M
	PDGFR	A22220	PDGFR alpha Rabbit mAb	IHC-P	H
		A19531	PDGFRB Rabbit mAb	IF/ICC, WB	H, M
	EGFR	A5031	EGFR (L858R) Rabbit mAb	IHC-P, WB	H, M
Growth factor receptor signaling pathway	AKT	AP0637	Phospho-AKT1-S473 Rabbit mAb	IHC-P, WB	H, M, R
		A22533	Akt1 Rabbit PolymAb®	IHC-P, WB	H, M, R
		A18675	Pan-Akt Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	ERK	A4782	ERK1/2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		AP0974	Phospho-ERK1-T202/Y204 + ERK2-T185/Y187 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Src	A19119	Src Rabbit mAb	IF/ICC, IP, WB	H, M, R
	PKC	A11107	PKC alpha Rabbit mAb	IHC-P, IP, WB	H, M, R
		A7778	PKC delta Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	eNOS	A20985	eNOS Rabbit mAb	IHC-P, WB	H, M, R
Vascular morphogenesis and homeostasis signaling pathways	Smad2	A19114	[KD Validated] Smad2 Rabbit mAb	IF/ICC, IP, WB	H, M, R
	Smad3	A19115	[KO Validated] Smad3 Rabbit mAb	IHC-P, IP, WB	H, M, R
		AP0727	Phospho-Smad3-S423/S425 Rabbit mAb	IHC-P, WB	H, M, R
	Smad2/3	AP1343	Phospho-Smad2-S465/S467 + Smad3-S423/S425 Rabbit mAb	WB	H, M
	Notch	A19090	Notch1 Rabbit mAb	IP, WB	H, M
	β-Catenin	A19657	[KO Validated] β-Catenin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R

PolymAb™ : a mixture of monoclonal antibodies

Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
EZH2-triggered methylation of SMAD3 promotes its activation and tumor metastasis	J Clin Invest	15.9	[KO Validated] Smad3 Rabbit mAb (A19115)
WD repeat protein 54-mediator of ErbB2-driven cell motility 1 axis promotes bladder cancer tumorigenesis and metastasis and impairs chemosensitivity	Cancer letters	9.75	[KO Validated] β-Catenin Rabbit mAb (A19657)
Cancer-associated fibroblast-secreted IGFBP7 promotes gastric cancer by enhancing tumor associated macrophage infiltration via FGF2/FGFR1/PI3K/AKT axis	Cell death discovery	7.1	[KO Validated] FGF2 Rabbit mAb (A11488)

Cell Adhesion

Cell adhesion to the extracellular matrix (ECM) and to neighboring cells is the hallmark of multicellularity and underlies the organization and distinct physiological functions of mammalian tissues. Adhesion is provided by specialized cell-cell junctions, primarily adherens junctions (AJ), desmosomes, and tight junctions. Cell-cell adhesion is controlled by cell adhesion molecules that recognize different ligands at cell junctions. A variety of types of cell-cell adhesion molecules are now known, such as cadherins, integrins, immunoglobin (Ig) superfamily members, selectins. Cell-matrix adhesion is the interaction of a cell with the extracellular matrix, mediated by multi-protein adhesion structures such as focal adhesions, and hemidesmosomes. Since cell adhesion receptors are connected to signal-transduction pathways, these cell-cell and cell-matrix interactions modulate cell phenotype, survival, differentiation, and migration. Aberrant cell adhesion contributes to diverse pathologies, including cancer metastasis, vascular disease, and inflammation.

Hot-selling Antibodies for Cell Adhesion

[KO Validated] β-Catenin Rabbit mAb (A19657)——Citation (46)

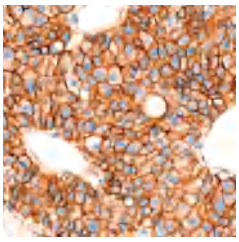
PathoQ Validated

Application: IHC-P,IF/ICC,IP,WB

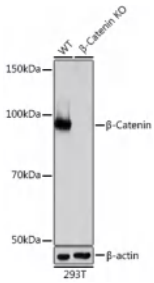
Reactivity: H,M,R

β-catenin is an important regulatory protein in the WNT signaling pathway. It is mainly located in the cell membrane. It binds to the intracellular domain of E-Cadherin in quiescent cells to stabilize cell-cell adhesion.Abnormal expression of β-catenin can induce the expression of oncogenes, leading to cell carcinogenesis and metastasis.

Human thyroid cancer



Human liver cancer



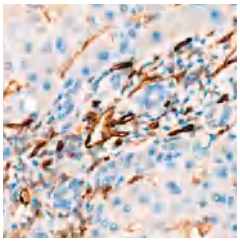
CD31/PECAM1 Rabbit mAb (A19014)——Citation (5)

PathoQ Validated

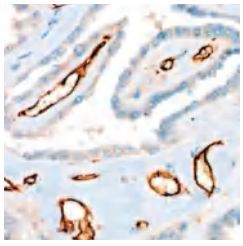
Application: IHC-P,IF/ICC,WB

Reactivity: H,M,R

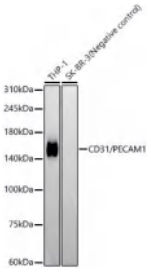
CD31/PECAM1 is found on the surface of platelets, monocytes, neutrophils, and some types of T-cells, and makes up a large portion of endothelial cell intercellular junctions. The encoded protein is a member of the immunoglobulin superfamily and is likely involved in leukocyte migration, angiogenesis, and integrin activation.



Human liver



Human thyroid



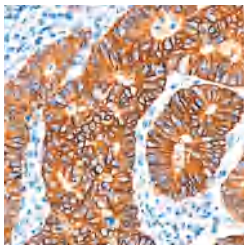
LI Cadherin/Cadherin-17 Rabbit mAb (A5286)——Citation (1)

PathoQ Validated

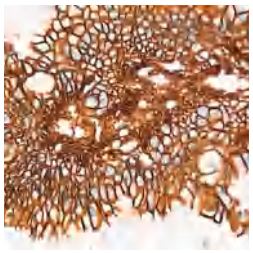
Application: IHC-P,IF/ICC,WB

Reactivity: H,M,R

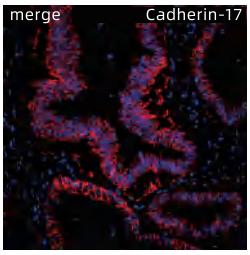
LI-cadherin, also known as cadherin-17, is a transmembrane, calcium-dependent glycoprotein that mediates cell-cell adhesion in intestinal epithelial cells. It is expressed in various cancers such as gastric/rectal/esophageal.



Human gastric cancer



Human pancreatic ductal carcinoma



Human colon cancer

Recommended

Research Tools for Cell Adhesion

Category		Target	Cat.No.	Product Name	Application	Reactivity
Cell-cell junction	Adhesion junction	Cadherin	A22850	E-Cadherin Rabbit mAb	IHC-P, IF/ICC, WB	H, M
			A19083	[KO Validated] N-Cadherin Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
			A5286	LI Cadherin/Cadherin-17 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		Catenins	A19657	[KO Validated] β-Catenin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
			A11399	δ-Catenin/p120 Catenin Rabbit mAb	IHC-P, IP, WB	H, M, R
			A4157	γ-Catenin Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
Cell-cell junction	Immunoglobulin superfamily	EpCAM	A1107	EpCAM Rabbit mAb	IHC-P, WB	H, M, R
		ICAM	A19300	ICAM-1/CD54 Rabbit mAb	IHC-P, FC, WB	H
		CD31	A19014	CD31/PECAM1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	CEA family	CEACAM5	A22266	CEACAM5 Rabbit mAb	IHC-P, ELISA, WB	H
	Galectin family	Galectin 1	A4732	Galectin 1/LGALS1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		Galectin 3	A22768	Galectin 3/LGALS3 Rabbit mAb	IF/ICC, IP, WB	H, M, R
			A22442	Galectin 3/LGALS3 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		Galectin 4	A3691	Galectin 4/LGALS4 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	The selectin family of adhesion molecules	P-selectin	A4989	CD62P/P-selectin Rabbit mAb	IHC-P, IP, WB	H, M, R
		CD44	A24023	CD44 Rabbit mAb	IHC-P, IF/ICC, WB	H

Category		Target	Cat.No.	Product Name	Application	Reactivity
Cell-matrix interactions	Integrin family	Integrins	A19071	Integrin alpha V (ITGAV/CD51) Rabbit mAb	IHC-P, FC(Intra), WB	H, M, R
			A19069	Integrin alpha 5 (ITGA5/CD49e) Rabbit mAb	IHC-P, IF/ICC, IP, FC(Intra), WB	H, M, R
			A22599	Integrin-β1/CD29 Rabbit PolymAb®	IHC-P, IF/ICC, WB	H, M
			A21234	Integrin-β1/CD29 Rabbit mAb	IF/ICC, FC, WB	H, M, R
			A19073	Integrin beta 3 (ITGB3/CD61) Rabbit mAb	IHC-P, IP, FC(Intra), WB	H, M, R
	Adhesion plaque components	α-Actinin	A3379	α-Actinin-4 Rabbit mAb	IF/ICC, IP, WB	H, M, R
		Talin 2	A19810	Talin 2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		Vinculin	A2752	Vinculin Rabbit mAb	IF/ICC, IP, WB	H, M, R
	Mucin family	MUC1	A19081	MUC1 Rabbit mAb	IHC-P, WB	H, M, R
		MUC2	A4767	MUC2 Rabbit mAb	IHC-P, WB	H, M, R

PolymAb™ : a mixture of monoclonal antibodies

Featured Citations

Title	Journal Title	Impact Factor	Product Cat.No.
Inhibition of the transcription factor ZNF281 by SUFU to suppress tumor cell migration	Cell Death and Differentiation	12.4	[KO Validated] N-Cadherin Rabbit mAb (A19083)
Cytoplasmic SHMT2 drives the progression and metastasis of colorectal cancer by inhibiting beta-catenin degradation	Theranostics	12.4	[KO Validated] β-Catenin Rabbit mAb (A19657)
NIR-II absorptive dithienopyrrole-thiadiazolobenzotriazole conjugated polymer for photoacoustic imaging-guided glioblastoma multiforme photothermal therapy	Acta Biomaterialia	9.7	Integrin beta 3 (ITGB3/CD61) Rabbit mAb (A19073)
WD repeat protein 54-mediator of ErbB2-driven cell motility 1 axis promotes bladder cancer tumorigenesis and metastasis and impairs chemosensitivity	Cancer Letters	9.7	E-Cadherin Rabbit mAb (A20798)
ircSFMBT1 promotes pancreatic cancer growth and metastasis via targeting miR-330-5p/PAK1 axis.	Cancer Gene Therapy	6.4	Pan Cadherin Rabbit mAb (A4903)

Schematic representation of cell-cell adhesion complexes

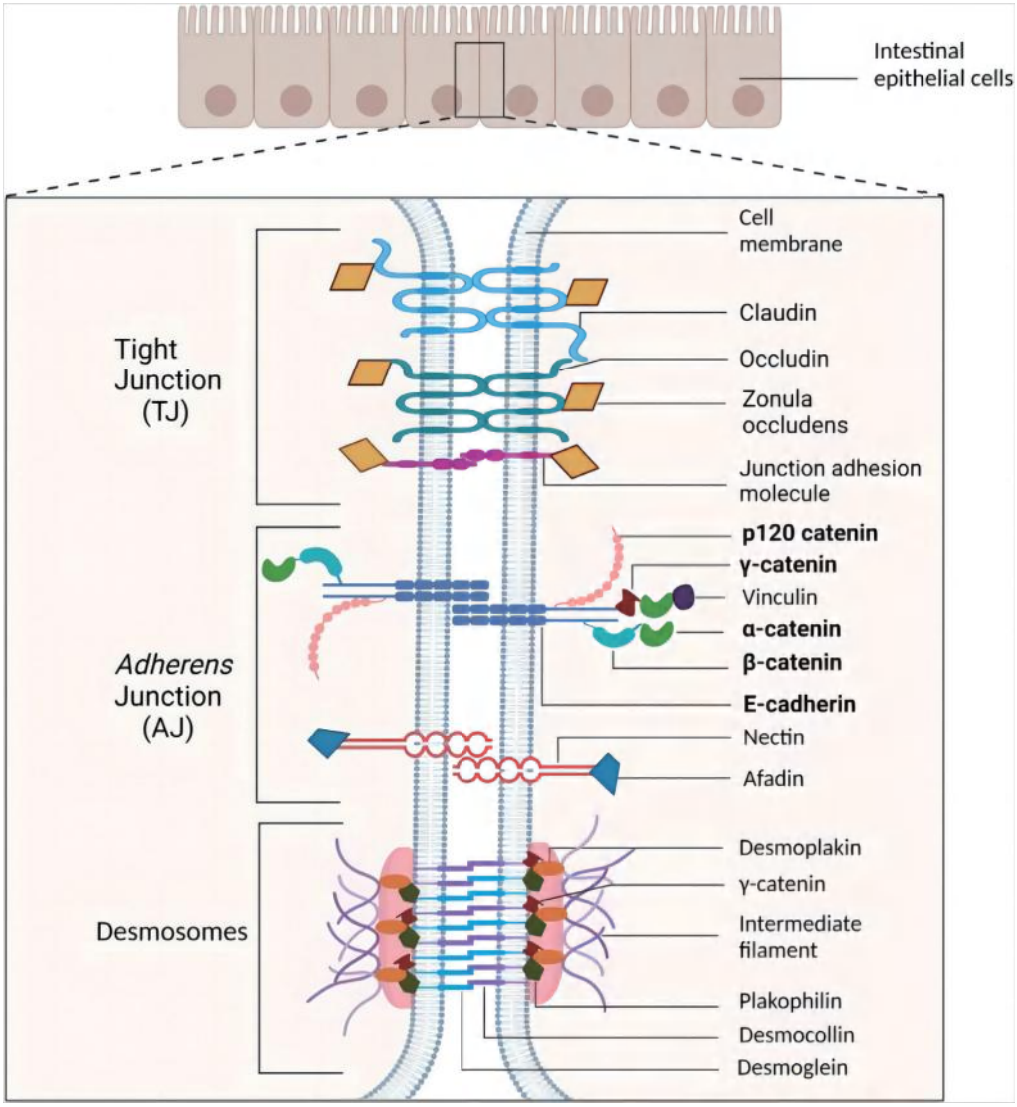


Image sources DOI:10.3389/fcell.2022.998373

Epithelial-mesenchymal Transition

Epithelial-mesenchymal transition (EMT) is a biological process that allows polarized epithelial cells to interact with the basement membrane.They undergo a variety of biochemical changes and acquire many characteristics of mesenchymal cells, including enhanced migration and invasiveness, increased resistance to apoptosis, and greatly increased production of extracellular matrix (ECM) components. The signaling pathways involved in the control of the EMT process include: Receptor tyrosine kinases,(RTKs), transforming growth factor-β (TGF-β), Notch proteins, endothelin A receptor (ETAR), Integrins, WNT proteins, hypoxia, matrix metalloproteinases (MMPs), etc. Several cell-intrinsic signal transduction pathways jointly induce the expression of EMT transcription factors (ZEB, SNAIL and TWIST) with pleiotropic effects. In many cases, EMTs involve key molecules have also been used as biomarkers to identify the occurrence of EMT and tumor infiltration and metastasis.

Hot-selling Antibodies for Epithelial-mesenchymal Transition

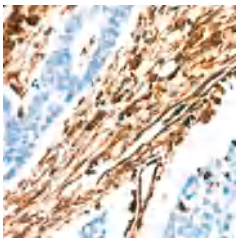
[KO Validated] Vimentin Rabbit mAb (A9607)——Citation (58)

PathoQ Validated

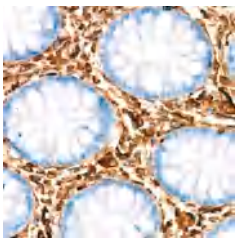
Application: IHC-P,IF/ICC,IP,WB

Reactivity: H,M,R

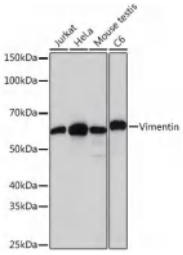
Vimentin encodes a type III intermediate filament protein. Intermediate filaments, along with microtubules and actin microfilaments, make up the cytoskeleton. Responsible for maintaining cell shape, cytoplasmic integrity, and stabilizing cytoskeletal interactions.



Human lung cancer



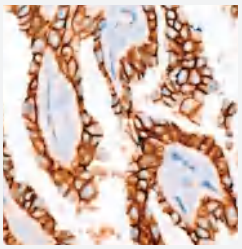
Human colon



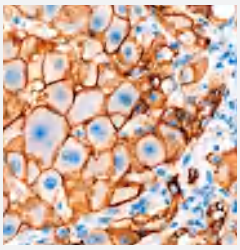
E-Cadherin Rabbit mAb (A22850)

PathoQ Validated

Application: IHC-P,IF/ICC,WB Reactivity: H,M



Human thyroid



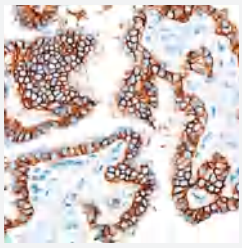
Human liver

E-Cadherin is a Ca^{2+} dependent cell adhesion molecule. The structural abnormalities of most tumors and the resulting loss of adhesion are considered to be an important step in the development of local invasion.

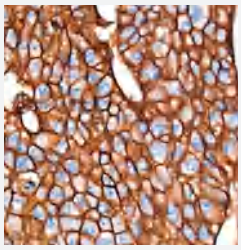
EpCAM Rabbit mAb (A1107)

PathoQ Validated

Application: IHC-P,WB Reactivity: H,M,R



Human thyroid



Human liver cancer

EpCAM encodes a carcinoma-associated antigen and is a member of a family that includes at least two type I membrane proteins.

Recommended

Research Tools for Epithelial-mesenchymal Transition

Category	Target	Cat.No.	Product Name	Application	Reactivity
Epithelial cell markers	Cadherin	A22850	E-Cadherin Rabbit mAb	IHC-P, IF/ICC, WB	H, M
	Claudin 1	A21971	[KO Validated] Claudin 1 Rabbit mAb	IF/ICC, WB	H, M, R
	Syndecan-1	A4174	CD138/Syndecan-1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Mucin-1	A19081	MUC1 Rabbit mAb	IHC-P, WB	H, M, R
	EpCAM	A1107	EpCAM Rabbit mAb	IHC-P, WB	H, M, R
	Cytokeratin 18	A19778	Cytokeratin 18 (KRT18) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Cytokeratin 19	A19040	Cytokeratin 19 (CK19) Rabbit mAb	IHC-P, IF/ICC, WB	H
Mesenchymal cell markers	N-Cadherin	A19083	[KO Validated] N-Cadherin Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Vimentin	A19607	[KO Validated] Vimentin Rabbit mAb	IHC-P,IF/ICC, IP, WB	H, M, R
	α-SMA	A17910	α-Smooth Muscle Actin (ACTA2) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Fibronectin	A12977	Fibronectin Rabbit mAb	IF/ICC, WB	H, M
	Type I collagen	A22090	Collagen I/COL1A1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Type III collagen	A0817	Collagen III alpha 1/COL3A1 Rabbit mAb	IF/ICC, IP, WB	H, M, R
	S100A4	A19109	FSP1/S100A4 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Integrin	A19069	Integrin alpha 5 (ITGA5/CD49e) Rabbit mAb	IHC-P, IF/ICC, IP, FC(Intra), WB	H, M, R
	Integrin-β1/CD29	A21234	Integrin-β1/CD29 Rabbit mAb	IF/ICC, FC, WB	H, M, R
		A22599	Integrin-β1/CD29 Rabbit PolymAb®	IHC-P, IF/ICC, WB	H, M
EMT regulatory proteins	ZEB1	A21794	ZEB1 Rabbit mAb	WB	H, M
	β-catenin	A19657	[KO Validated] β-Catenin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
		A22180	Non-phospho (Active)β-Catenin -S33/S37/T41 Rabbit mAb	IHC-P, WB	H, M, R
	Smad	AP0727	Phospho-Smad3-S423/S425 Rabbit mAb	IHC-P, WB	H, M, R
		A19114	[KD Validated] Smad2 Rabbit mAb	IF/ICC, IP, WB	H, M, R
		A19115	[KO Validated] Smad3 Rabbit mAb	IHC-P, IP, WB	H, M, R
	HIF	A22041	HIF-1alpha Rabbit mAb	WB	H
		A19532	HIF1β/ARNT Rabbit mAb	IHC-P, WB	H
	NF-κB	A19653	NF-kB p65/RelA Rabbit mAb	ChIP, IP, IHC-P, IF/ICC, WB	H, M, R, MK

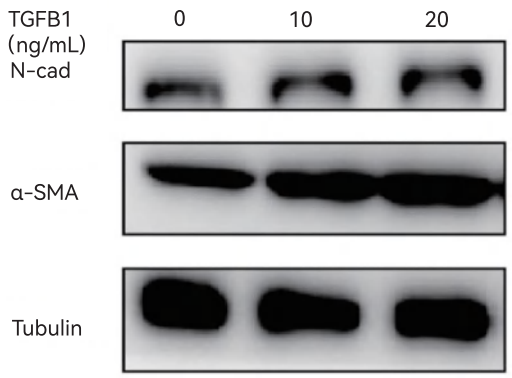
PolymAb™ : a mixture of monoclonal antibodies

Recommended

Research Tools for for Epithelial-mesenchymal Transition

Active Recombinant Human Mature TGF-beta 1 Protein (RP01458)

A member of the TGF-beta superfamily, it is involved in important life processes such as cell differentiation, apoptosis, proliferation, migration, and cancer. TGFB1 is a multifunctional protein that controls proliferation, differentiation, and other functions in many cell types. In basic scientific research, it is often used in experiments such as inducing epithelial-mesenchymal transition (EMT) in cells, constructing *in vitro* cell fibrosis models, and conducting T cell culture and organoid culture.



Active Recombinant Human mature TGF-beta1 induces EMT in Beas-2B cells. As the concentration of TGF-beta1 increased, the expression of epithelial cell marker N-cad and α-SMA significantly upregulated.
(Customer feedback from Xiamen University)

Protein	Cat.No.	Product Name	Species	Gene ID
TGF-beta 1	RP01458	Active Recombinant Human Mature TGF-beta 1 Protein	Human	7040
TGF-beta 1	RP00671	Recombinant Mouse/Rat Mature TGF-beta 1 Protein	Mouse/Rat	21803
TGF-beta 1	RP01168	Active Recombinant Rat Latent TGF-beta 1 Protein	Rat	59086

Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
PRMT5 Inhibition Promotes PD-L1 Expression and Immuno-Resistance in Lung Cancer	Frontiers in immunology	8.786	α-Smooth Muscle Actin (ACTA2) Rabbit mAb (A17910)
LTB4R Promotes the Occurrence and Progression of Clear Cell Renal Cell Carcinoma (ccRCC) by Regulating the AKT/mTOR Signaling Pathway	Cells	7.66	[KO Validated] Vimentin Rabbit mAb (A19607)
Canonical WNT Signaling Activated by WNT7B Contributes to L-HBs-Mediated Sorafenib Resistance in Hepatocellular Carcinoma by Inhibiting Mitophagy	Cancers	6.57	[KO Validated] β-Catenin Rabbit mAb (A19657)

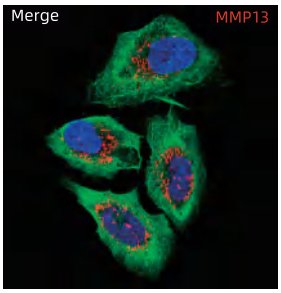
Extracellular Matrix

The extracellular matrix (ECM) is a complex network of macromolecules secreted outside cells. Its main function involves structural scaffolding and biochemical support for cells and tissues. The ECM can be divided into the basement membrane (BM) and the interstitial matrix (IM). The basement membrane (BM), composed of collagen, laminin, PGs, and FN, is located at the interface between parenchyma and connective tissue and serves as a structural barrier for cancer cell invasion, infiltration, and extravasation. IM is a loose ECM composed of collagens 1 and III , elastin fibers and glycoproteins. During tumor progression, the collagen fibers in IM become thicker and denser. The lysyl oxidase (LOX) family catalyzes the formation of collagen cross-links. In tumors, increased LOX expression leads to excessive cross-linking of collagen and increased stiffness, thereby causing solid stress in tumors. In addition to collagen alterations, there are pathological expressions of various glycoproteins in the ECM, all of which form a niche that promotes cell migration, adhesion, and metastasis.

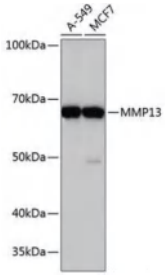
Hot-selling Antibodies for Extracellular Matrix

MMP13 Rabbit mAb (A11148)——Citation (8)

Application: IHC-P,IF/ICC,WB Reactivity: H



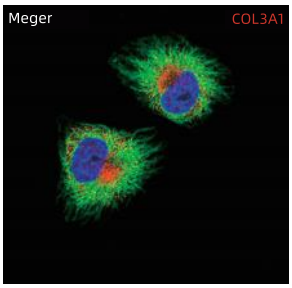
U-2 OS Cells



MMP13 is a member of the matrix metalloproteinase (MMPs) peptidase M 1 0 family. It is involved in the decomposition of extracellular matrix in normal physiological processes and is related to articular cartilage turnover and cartilage pathophysiology related to osteoarthritis.

Collagen III alpha 1/COL3A1 Rabbit mAb (A0817) —— Citation (4)

Application: IF/ICC,IP,WB Reactivty: H,M,R



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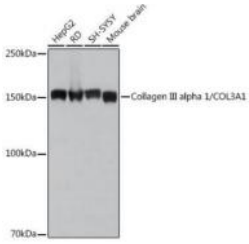
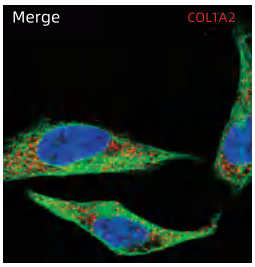


Collagen III alpha 1 is a fibrous collagen found in expandable connective tissues such as the skin, lungs, uterus, intestines and vascular system, often in association with type I collagen. Its mutations are associated with aortic and arterial aneurysms.

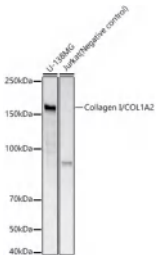
Collagen I/COL1A2 Rabbit mAb (A22349)

Application: IF/ICC, WB Reactivity: H, M



A-431 cells

NIH/3T3 cells



Type 1 collagen is a fiber-forming collagen found in most connective tissues and is abundant in bone, cornea, dermis, and tendons. Related to a specific type of skin tumor called dermatofibrosarcoma.

Recommended

Research Tools for Extracellular Matrix

Product Category	Target	Cat.No.	Product Name	Application	Reactivity
ECM components	Collagen	A22090	Collagen I/COL1A1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A21059	Collagen I/COL1A2 Rabbit mAb	IF/ICC, WB	M, R
		A22349	Collagen I/COL1A2 Rabbit mAb	IF/ICC, WB	H, M
		A0817	Collagen III alpha 1/COL3A1 Rabbit mAb	IF/ICC, IP, WB	H, M, R
	Fibronectin	A12977	Fibronectin Rabbit mAb	IF/ICC, WB	H, M
	Laminin	A4373	Laminin beta 1 Rabbit mAb	IF/ICC, WB	H, M, R
ECM interacting receptor	Integrin	A19068	[KO Validated] Integrin alpha 2 (ITGA2/CD49b) Rabbit mAb	IHC-P, WB	H, M, R
		A4054	Integrin alpha 4 (ITGA4/CD49d) Rabbit mAb	IHC-P, WB	H, M, R
		A19069	Integrin alpha 5 (ITGA5/CD49e) Rabbit mAb	IHC-P, IF/ICC, IP, FC(Intra), WB	H, M, R
		A19071	Integrin alpha V (ITGAV/CD51) Rabbit mAb	IHC-P, FC, WB	H, M, R
		A22599	Integrin-β1/CD29 Rabbit PolymAb®	IHC-P, IF/ICC, WB	H, M
		A19073	Integrin beta 3 (ITGB3/CD61) Rabbit mAb	IHC-P, IP, FC(Intra), WB	H, M, R
	CD44	A24023	CD44 Rabbit mAb	IHC-P, IF/ICC, WB	H
	Syndecan	A4174	CD138/Syndecan-1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
Collagen regulatory molecule	TGM2	A21184	Transglutaminase 2 (TGM2) Rabbit mAb	IHC-P, IF/ICC, WB	H
	PLOD3	A22354	PLOD3 Rabbit mAb	IHC-P, WB	H
	LOX	A11504	LOX Rabbit mAb	IHC-P, IP, WB	H, M, R
Matrix metalloproteinase family (MMPs)	MMP3	A11418	MMP3 Rabbit mAb	IHC-P, WB	H, M, R
	MMP7	A20701	MMP7 Rabbit mAb	IHC-P, WB	H
	MMP13	A11148	MMP13 Rabbit mAb	IHC-P, IF/ICC, WB	H
ADAM family	ADAM9	A22058	ADAM9 Rabbit mAb	IHC-P, WB	H, MK
	ADAM15	A6813	ADAM15 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
Cathepsin	Cathepsin	A19005	Cathepsin B Rabbit mAb	IHC-P, WB	H
		A19680	Cathepsin D Rabbit mAb	IHC-P, WB	H, M
		A4986	Cathepsin L/V/K/H Rabbit mAb	IHC-P, WB	H, M, R
Plasminogen system	tPA/PLAT	A4210	tPA/PLAT Rabbit mAb	IF/ICC, WB	H, M, R

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Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
Phosphorylation of PHF2 by AMPK releases the repressive H3K9me2 and inhibits cancer metastasis	Signal transduction and targeted therapy	39.3	Fibronectin Rabbit mAb (A12977)
NIR-II Absorptive Dithienopyrrole-Thiadiazolobenzotriazole Conjugated Polymer for Photoacoustic Imaging-Guided Glioblastoma Multiforme Photothermal Therapy	Acta biomaterialia	10.63	Integrin beta 3 (ITGB3/CD61) Rabbit mAb (A19073)
Bioinspired Nanospheres as Anti-inflammation and Antisenescence Interfacial Biolubricant for Treating Temporomandibular Joint Osteoarthritis	ACS applied materials & interfaces	10.38	MMP3 Rabbit mAb (A11418)

Cytoskeleton

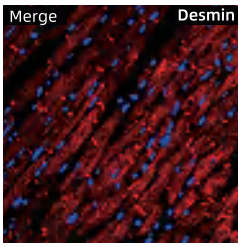
The cytoskeleton is a filamentous protein network containing three main molecules: microtubules, intermediate filaments and actin (microfilaments). Signaling to the cytoskeleton through G protein-coupled receptors (GPCRs), integrins, receptor tyrosine kinases (RTKs), and numerous other specialized receptors, such as the semaphorin 1a receptor Plexin A, can lead to diverse effects on cell activity, including changes in cell shape, migration, proliferation, and survival. Aberrant control of cytoskeletal signaling, which can result in a disconnection between extracellular stimuli and cellular responses, is often seen in immune pathologies, developmental defects, and cancer. For example, Metastatic disease or the movement of cancer cells from one site to another requires dramatic remodeling of the cytoskeleton.

Hot-selling Antibodies for Cytoskeleton

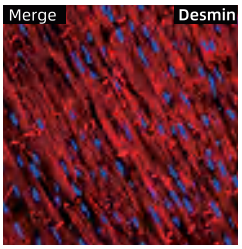
Desmin Rabbit mAb (A3736)——Citation (5)

Application: IHC-P,IF/ICC,WB Reactivity: H,M,R

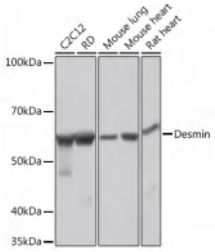
Desmin encodes a muscle-specific class III intermediate filament. Homopolymers of this protein form a stable intracytoplasmic filamentous network connecting myofibrils to each other and to the plasma membrane. Mutations in this gene are associated with desmin-related myopathy, a familial cardiac and skeletal myopathy (CSM), and with distal myopathies.



Mouse heart



Rat heart

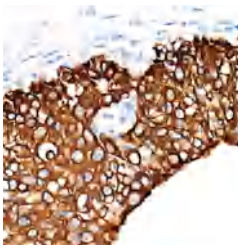


Cytokeratin 19 (CK19) Rabbit mAb (A19040)——Citation (4)

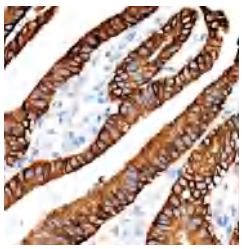
PathoQ KO Validated

Application: IHC-P,IF/ICC,WB Reactivity: H

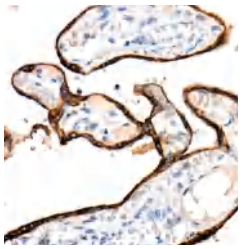
Cytokeraton 19 (CK19) is present in normal epithelia and tumors of various epithelial origins, especially single-layer epithelium and mesothelium. It is often used in the diagnosis of adenocarcinoma. Liver cells do not express CK19, so it can be used to differentiate between liver cancer and metastatic adenocarcinoma.



Human breast cancer



Human colon carcinoma



Human placenta

Recommended

Research Tools for Cytoskeleton

Category	Target	Cat.No.	Product Name	Application	Reactivity
Microfilament-associated protein	α-Actin	A2319	α-Actin-1 (ACTA1) Rabbit mAb	IF/ICC, WB	H, M, R
	α-Actinin-4	A3379	α-Actinin-4 Rabbit mAb	IF/ICC, IP, WB	H, M, R
	α-SMA	A17910	α-Smooth Muscle Actin (ACTA2) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
Microtubule-associated protein	α-tubulin	A6830	α-Tubulin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	β-tubulin	A12289	β-Tubulin Rabbit mAb	IF/ICC, IP, WB	H, M, R
		A4798	βII-Tubulin/β2-Tubulin Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A17913	βIII-Tubulin Rabbit mAb	IF/ICC, IP, WB	H, M, R
	γ-tubulin	A9657	γ-Tubulin Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	MAP2	A22206	MAP2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
Intermediate fiber	Cytokeratins	A9776	Cytokeratin 1 (KRT1) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A2615	Cytokeratin 2e (KRT2) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A0013	Cytokeratin 4 (KRT4) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A11396	Cytokeratin 5 (KRT5) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A4631	Cytokeratin 6 (KRT6) Rabbit mAb	IHC-P, WB	H, M, R
		A4357	Cytokeratin 7 (KRT7) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A4669	Cytokeratin 13 (KRT13) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A0411	Cytokeratin 14 (KRT14) Rabbit mAb	IHC-P, WB	H, M, R
		A19039	Cytokeratin 15 (KRT15) Rabbit mAb	IF/ICC, WB	H, M, R
		A4854	Cytokeratin 16 (KRT16) Rabbit mAb	IHC-P, IF/ICC, WB	H, R
		A8690	Cytokeratin 18 (KRT18) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A19040	Cytokeratin 19 (KRT19) Rabbit mAb	IHC-P, IF/ICC, WB	H
	Lamin	A19524	[KO Validated] Lamin A/C Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
		A5001	Lamin B2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Desmin	A3736	Desmin Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	GFAP	A19058	GFAP Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Vimentin	A19607	[KO Validated] Vimentin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
Regulation of the cytoskeleton dynamics	Rho	A4855	RHOA/RHOB/RHOC Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	ROCK	A2395	ROCK2 Rabbit mAb	IHC-P, WB	H, M, R

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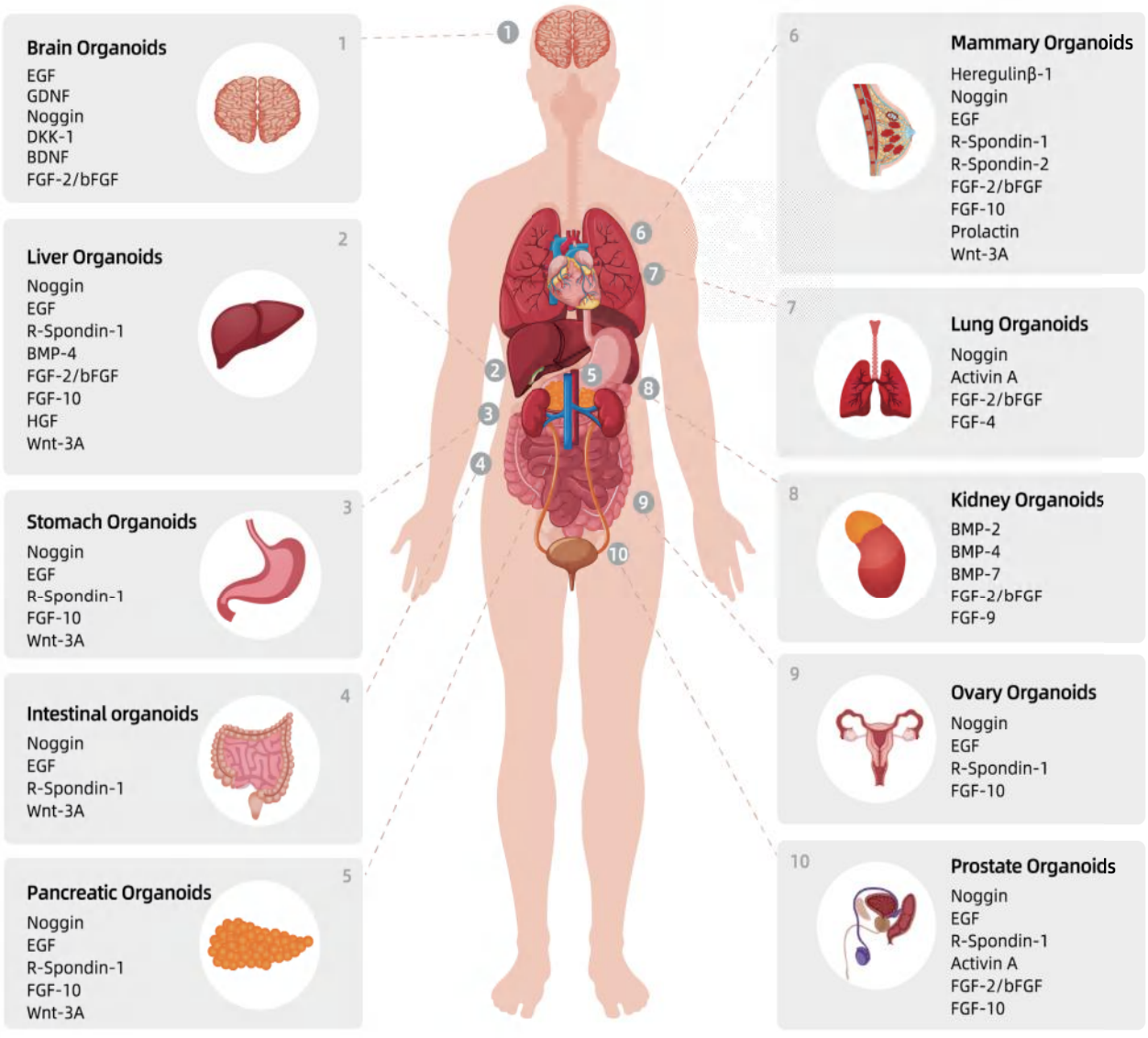
Research Tools for Cytoskeleton

Title	Journal	Impact Factor	Product Cat.No.
The risk variant rs11836367 contributes to breast cancer onset and metastasis by attenuating Wnt signaling via regulating NTN4 expression	Science advances	14.95	Cytokeratin 14 (KRT14) Rabbit mAb (A19039)
Inflammatory-miR-301a circuitry drives mTOR and Stat3-dependent PSC activation in chronic pancreatitis and PanIN	Molecular therapy. Nucleic acids	10.183	Cytokeratin 19 (KRT19) Rabbit mAb (A19040)
Bioinspired Nanospheres as Anti-inflammation and Antisenescence Interfacial Biolubricant for Treating Temporomandibular Joint Osteoarthritis	Cell death discovery	7.109	ROCK1 Rabbit mAb (A11158)
Terpinen-4-ol inhibits the proliferation and mobility of pancreatic cancer cells by downregulating Rho-associated coiled-coil containing protein kinase 2	Bioengineered	6.832	ROCK2 Rabbit mAb (A2395)

Organoid Drug Evaluation

Preclinical drug trials focus on drug efficacy and toxicity. Most efficacy studies are conducted in 2D tumor models and patient-derived tumor xenografts (PDTX), but these often yield differing sensitivities compared to in vivo results. Tumor organoids, however, offer high accuracy in predicting patient treatment response. Tumor organoids demonstrate promise in shortening drug development cycles and addressing preclinical model deficiencies. Organoid formation entails cell proliferation and reorganization into complex, organ-like structures. Cytokines promoting differentiation are crucial, with different types requiring specific cytokines during culture. By modulating cytokines, cells can be guided towards desired lineages. Therefore, diverse cytokine addition is vital for successful organoid cultivation.



References

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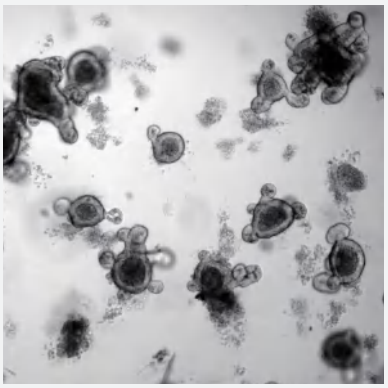
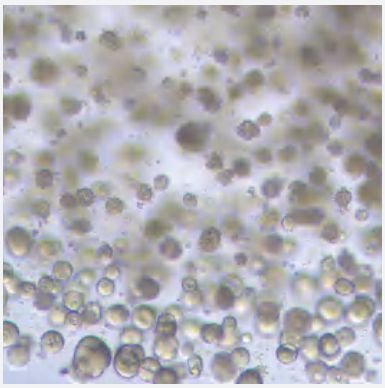
Biochim Biophys Acta Rev Cancer. 2021 Apr;1875(2):188527. doi: 10.1016/j.bbcan.2021.188527.

Intestinal organoid culture (NOG+R-spondin-1)
(Customer feedback from Xiamen University)



Esophageal organoid culture (NOG+R-spondin-1+EGF)
(Customer feedback from Fudan University)

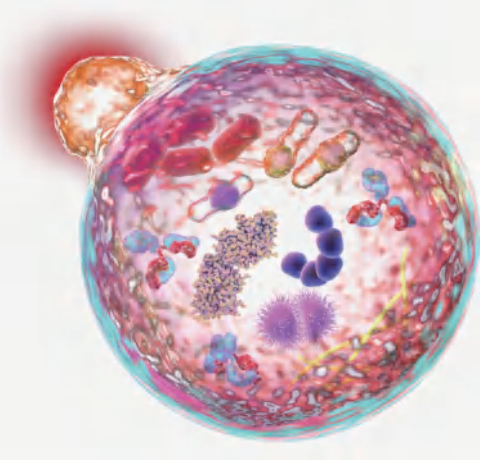


Recommended

Research Tools for Organoid Drug Evaluation

Protein	Cat.No.	Product Name	Species	Gene ID
EGF	RP01030	Recombinant Human EGF Protein	Human	1950
R-spondin-1	RP00071	Active Recombinant Human R-spondin-1 Protein	Human	284654
R-spondin-1	RP01807	Recombinant Mouse R-spondin-1/RSPO1 Protein	Mouse	192199
Noggin	RP01237	Active Recombinant Human Noggin/NOG Protein	Human	9241
Noggin	RP01308	Recombinant Mouse Noggin/NOG Protein	Mouse	18121
Wnt-3a Surrogate	RP01618	Recombinant Human Wnt-3a Surrogate Protein	Human	
bFGF	RP01042	Active Recombinant Human FGF-2/bFGF Protein	Human	2247
bFGF	RP01345	Recombinant Mouse FGF-2/bFGF Protein	Mouse	14173
BMP-4	RP02512	Recombinant Human/Mouse/Rat BMP-4 Protein	Human/Mouse/Rat	652
FGF-10	RP01140	Recombinant Human FGF-10 Protein	Human	2255
HGF	RP01584	Recombinant Mouse Hepatocyte growth factor/HGF Protein	Mouse	15234
	RP01602	Recombinant Human Hepatocyte growth factor/HGF Protein	Human	3082
BMP-2	RP02510	Recombinant Human/Mouse/Rat BMP-2 Protein	Human	650
BMP-7	RP02513	Recombinant Human BMP-7 Protein	Human	655
Inhibin beta A/Activin A	RP01782	Recombinant Human, Mouse, Rat mature Activin A/INHBA Protein	Human	3624

Tumor Cell Proliferation



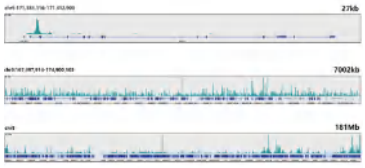
Tumor cells grow and divide in an uncontrolled manner at the genetic level, invading normal tissues and organs and eventually spreading throughout the body. These cells are more or less different in metabolism, morphology, and function from the normal cells from which they originate. The proliferation of tumor cells is related to dysregulated receptors or kinases (such as Bcr-Abl, EGFR, HER2, C-Met, and Raf), constitutively activated signaling pathways (such as PI3K/Akt pathway, MAPK pathway, Wnt pathway, Hippo pathway), and transcriptional regulators (c-myc, Smads, STATs, YAP).

Hot-selling Antibodies for Tumor Cell Proliferation

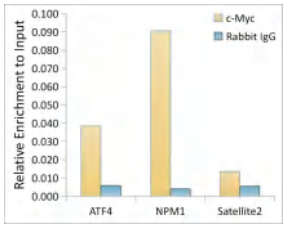
[KO Validated] c-Myc Rabbit mAb (A19032) — — Citation (6)

Application: CUT&Tag,ChIP,WB Reactivity: H,M

c-Myc is a proto-oncogene and encodes a nuclear phosphoprotein that plays a role in cell cycle progression, apoptosis and cellular transformation. The encoded protein forms a heterodimer with the related transcription factor MAX. This complex binds to the E box DNA consensus sequence and regulates the transcription of specific target genes. Amplification of this gene is frequently observed in numerous human cancers. Translocations involving this gene are associated with Burkitt lymphoma and multiple myeloma in human patients.



K562 cells



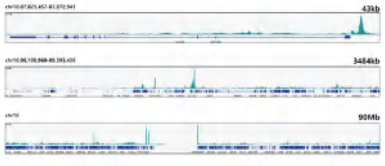
K562 cells

TEAD1 Rabbit mAb (A5218)

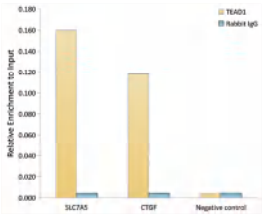
PathoQ Validated

Application: CUT&Tag, ChIP, IP, WB Reactivity: H, M, R

TEAD1 encodes a ubiquitous transcriptional enhancer factor that is a member of the TEA/ATTS domain family. This protein directs the transactivation of a wide variety of genes and, in placental cells, also acts as a transcriptional repressor. Mutations in this gene cause Sveinsson's chorioretinal atrophy. Additional transcript variants have been described but their full-length natures have not been experimentally verified.



Hep G2 cells



Hep G2 cells

Recommended

Research Tools for Tumor Cell Proliferation

Category	Target	Cat.No.	Product Name	Application	Reactivity
Receptor tyrosine kinase	Ephrin B2	A11349	Ephrin B2 Rabbit mAb	IHC-P, WB	H, M, R
	FGFR3	A19052	FGFR3 Rabbit mAb	IHC-P, WB	H, M, R
	Trk	A2693	TrkA+B+C Rabbit mAb	IHC-P, WB	H, M, R
Signal transduction	AKT	AP0637	Phospho-AKT1-S473 Rabbit mAb	IHC-P, WB	H, M, R
		A22533	Akt1 Rabbit PolymAb®	IHC-P, WB	H, M, R
		A18675	Pan-Akt Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	ERK	A4782	ERK1/2 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
		AP0974	Phospho-ERK1-T202/Y204 + ERK2-T185/Y187 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	JNK	AP0631	Phospho-JNK1/2/3-T183/T183/T221 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A4867	JNK1/2/3 Rabbit mAb	IF/ICC, WB	H, M, R
	p38	A5049	p38 MAPK Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	Src	A19119	[KO Validated] Src Rabbit mAb	IHC-P, IP, WB	H, M, R
	PAK1	A19608	PAK1 Rabbit mAb	IF/ICC, WB	H, M, R
	PKC delta	A7778	PKC delta Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	PP2A	A6175	PP2A alpha + beta Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	p70 S6	A9100	p70 S6 Kinase 2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	RAS	A19779	KRAS+HRAS+NRAS Rabbit mAb	IF/ICC, WB	H, M, R
	Rap	A9725	RAP1A + RAP1B Rabbit mAb	IF/ICC, WB	H, M, R
	Rho	A4855	RHOA/RHOB/RHOC Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	STK3/MST2	A9036	STK3/MST2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	STK39	A2275	STK39 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
Transcriptional regulation	c-Myc	A19032	[KO Validated] c-Myc Rabbit mAb	CUT&Tag, ChIP, WB	H, M
	Smad2	A19114	[KD Validated] Smad2 Rabbit mAb	IHC-P, IP, WB	H, M, R
	Smad3	A19115	[KO Validated] Smad3 Rabbit mAb	IHC-P, IP, WB	H, M, R
	STAT3	A19566	[KO Validated] STAT3 Rabbit mAb	IHC-P, IP, WB	H, M, R
	YAP1	A19134	[KO Validated] YAP1 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	β-Catenin	A19657	[KO Validated] β-Catenin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	c-Jun	AP0105	Phospho-c-Jun-S63 Rabbit mAb	IF/ICC, WB	H, M, R
	TEAD1	A5218	TEAD1 Rabbit mAb	CUT&Tag, ChIP, IP, WB	H, M, R

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Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
TNFAIP8 protein functions as a tumor suppressor in inflammation-associated colorectal tumorigenesis	Cell death & disease	9.685	[KO Validated] STAT3 Rabbit mAb (A19566)
Metallothionein 2A (MT2A) controls cell proliferation and liver metastasis by controlling the MST1/LATS2/YAP1 signaling pathway in colorectal cancer	Cancer cell international	6.429	[KO Validated] YAP1 Rabbit mAb (A19134)
Latex derived from Ficus carica L. inhibited the growth of NSCLC by regulating the caspase/gasdermin/AKT signaling pathway	Drug Dev Res	5.004	[KO Validated] PTEN Rabbit mAb (A19104)

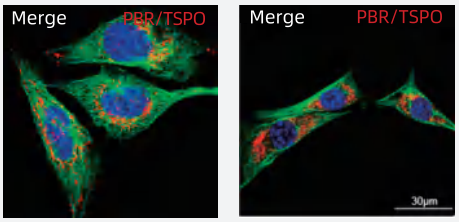
Tumor Metabolism

The occurrence of tumors depends on the reprogramming of cell metabolism. A common feature of tumor cell metabolism is the ability to obtain necessary nutrients from a nutrient-poor environment and use these nutrients to maintain viability and generate new biomass. Changes in intracellular and extracellular metabolites can accompany tumor-related metabolic reprogramming, affecting gene expression, cell differentiation, and the tumor microenvironment.

Hot-selling Antibodies for Tumor Metabolism

PBR/TSPO Rabbit mAb (A4881)——Citation (1)

Application: IHC-P, IF/ICC, WB Reactivity: H, M

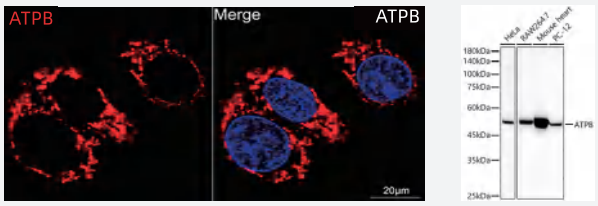


U-2 OS cells NIH/3T3 cells

The Translocator Protein (TSPO) is a protein located on the outer membrane of mitochondria. It is involved in the synthesis of steroid hormones, regulates mitochondrial function and metabolism, and plays a role in cellular proliferation and apoptosis.

ATPB Rabbit mAb (A11214)

Application: IHC-P, IF/ICC, WB Reactivity: H, M, R



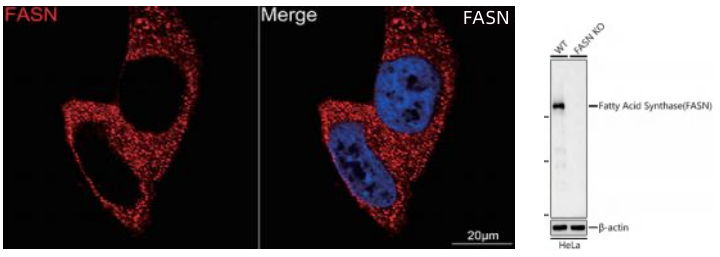
Hep G2 cells

Mitochondrial ATP synthase catalyzes ATP synthesis, utilizing an electrochemical gradient of protons across the inner membrane during oxidative phosphorylation. ATP synthase is composed of two linked multi-subunit complexes: the soluble catalytic core, F1, and the membrane-spanning component, Fo, comprising the proton channel.

[KO Validated] Fatty Acid Synthase (FASN) Rabbit mAb (A21182)——Citation (1)

Application: IF/ICC, WB Reactivity: H, R

The enzyme encoded by this gene is a multifunctional protein. Its main function is to catalyze the synthesis of palmitate from acetyl-CoA and malonyl-CoA, in the presence of NADPH, into long-chain saturated fatty acids. In some cancer cell lines, this protein has been found to be fused with estrogen receptor-alpha (ER-alpha), in which the N-terminus of FAS is fused in-frame with the C-terminus of ER-alpha.



HeLa Cells

Recommended

Research Tools for Tumor Metabolism

Category	Cat.No.	Product Name	Application	Reactivity
Glycolysis	A19032	[KO Validated] c-Myc Rabbit mAb	CUT&Tag, ChIP, WB	H, M
	A19532	HIF1β/ARNT Rabbit mAb	IHC-P, WB	H
	A22449	[KO Validated] p53 Rabbit mAb	IHC-P, WB	H
	A0533	[KO Validated] HK1 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	A20829	[KO Validated] Hexokinase II Rabbit mAb	IF/ICC, WB	H, M, R
	A20983	PFKP Rabbit mAb	IHC-P, WB	H, M, R
Amino acid metabolism	A4923	Arginase 1 (ARG1) Rabbit mAb	IF/ICC, WB	H, M, R
	A5220	DLDH/DLD Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	A5176	GLUD1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	A11363	GOT1 Rabbit mAb	IF/ICC, WB	H, M, R
	A22129	PHGDH Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
Lipid metabolism	A4567	ACADM Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	A22351	ALDH1A1 Rabbit mAb	IF/ICC, IP, WB	H, M, R
	A23286	BLBP/FABP7 Rabbit mAb	IF/ICC, WB	H, M
	A3719	ACLY Rabbit mAb	IF/ICC, IP, WB	H, M, R
	A19627	ACC1 Rabbit mAb	IHC-P, IP, WB	H, M, R
	A21182	[KO Validated] Fatty Acid Synthase (FASN) Rabbit mAb	IF/ICC, WB	H, R
	A4881	PBR/TSPO Rabbit mAb	IHC-P, IF/ICC, WB	H, M
Energy metabolism	A11217	ATP5A1 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	A11214	ATPB Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	A2877	ALOX5 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	A19732	NDUFB8 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	A8691	NDUFS4 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
mTOR signaling pathway	AP0978	Phospho-mTOR-S2481 Rabbit mAb	WB	H, M
	AP0115	Phospho-mTOR-S2448 Rabbit mAb	WB	H, M, R
	A23500	eIF4EBP1 Rabbit mAb	IF/ICC, WB	H, R
	AP0502	Phospho-p70 S6 Kinase 1-T421/S424 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
PI3K-AKT signaling pathway	A4992	PI3 Kinase p85 alpha Rabbit mAb	IHC-P, WB	H, M, R
	A18675	Pan-Akt Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	A17909	AKT1 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	AP0637	Phospho-AKT1-S473 Rabbit mAb	IHC-P, WB	H, M, R
	A19104	[KO Validated] PTEN Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R

PolymAb™ : a mixture of monoclonal antibodies

Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
Low-Dose Sorafenib Acts as a Mitochondrial Uncoupler and Ameliorates Nonalcoholic Steatohepatitis	Cell Metabolism	29	Phospho-mTOR-S2448 Rabbit mAb (AP0115)
EZH2-triggered methylation of SMAD3 promotes its activation and tumor metastasis	The Journal of clinical investigation	15.9	Caveolin-1 Rabbit mAb (A19006)
Dual-Targeted Nanodiscs Revealing the Cross-Talk between Osteogenic Differentiation of Mesenchymal Stem Cells and Macrophages	ACS Nano	17.1	Arginase 1 (ARG1) Rabbit mAb (A4923)
Splicing factor SRSF1 promotes breast cancer progression via oncogenic splice switching of PTPMT1	J Exp Clin Cancer Res	12.658	PI3 Kinase p85 alpha Rabbit mAb (A4992)

Tumor Signaling Pathway

Hippo Signaling Pathway

The Hippo signaling pathway basically consists of a core kinase cascade, including the Ste-20 protein kinase family member MST1/2, the scaffolding protein Salvador and a large tumor suppressor kinase LATS1/2, and inhibits the function of the transcriptional coactivators YAP and TAZ and downstream target gene transcription. The Hippo signaling pathway can be activated by a wide range of signals from cell contact, polarity, energy or mechanical stress and GPCR signaling, ultimately leading to LATS1/2-mediated YAP/TAZ phosphorylation. 14-3-3 interacts with phosphorylated YAP/TAZ and causes phosphorylated YAP/TAZ to be retained in the cytoplasm, and β-TrCP mediates its degradation through the proteasome. However, cytoskeletal rearrangements, genetic mutations, or growth factors inhibit LATS1/2-mediated YAP/TAZ phosphorylation, allowing YAP/TAZ to enter the nucleus and activate the transcription of genes involved in cell proliferation and survival. In addition, some alternative models suggest that YAP/TAZ activity can be regulated by novel regulators, such as the deubiquitinase YOD1 and MAP4 kinase. The Hippo signaling pathway has a significant impact on a variety of human diseases, including tissue degeneration and cancer. In addition to its main function of controlling cell proliferation and organ size, it also includes miRNA biosynthesis, vascular stability, innate immunity, autophagy, and cell ploidy, etc.

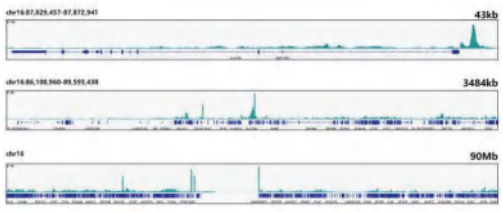
Hot-selling Antibodies for Hippo Signaling Pathway

TEAD1 Rabbit mAb (A5218)

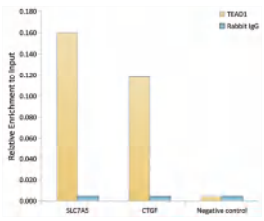
Application: CUT&Tag, ChIP, IP, WB

Reactivity: H, M, R

TEAD1 encodes a ubiquitous transcriptional enhancer factor that is a member of the TEA/ATTS domain family. This protein directs the transactivation of a wide variety of genes and, in placental cells, also acts as a transcriptional repressor.



Hep G2 cells



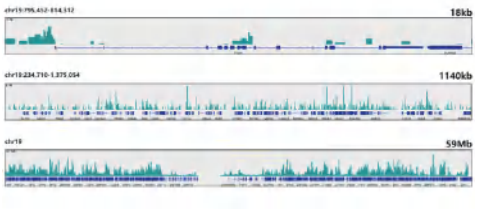
Hep G2 cells

[KO Validated] YAP1 Rabbit mAb (A22650)

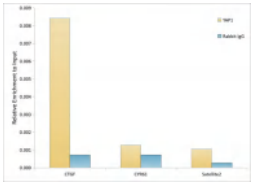
Application: CUT&Tag, ChIP, IP, WB

Reactivity: H, M, R

YAP1 encodes a downstream nuclear effector of the Hippo signaling pathway which is involved in development, growth, repair, and homeostasis. This gene is known to play a role in the development and progression of multiple cancers as a transcriptional regulator of this signaling pathway and may function as a potential target for cancer treatment.



Hep G2 cells



HeLa cells

Recommended

Research Tools for Hippo Signaling Pathway

Category	Target	Cat.No.	Product Name	Application	Reactivity
Upstream kinase	MST1	A0109	MSP/MST1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	MST2	A9036	STK3/MST2 Rabbit mAb	IHC-P, IF/ICC, WB	H, M
	LATS1	A17992	LATS1 Rabbit pAb	IHC-P, WB	H, M, R
		A22287	LATS1 Rabbit mAb	WB	H
	LATS2	A16249	LATS2 Rabbit pAb	IHC-P, WB	H, M, R
Hippo signaling pathway regulatory molecules	Ajuba	A22039	[KD Validated] Ajuba Rabbit mAb	IP, WB	H, R
	NF2	A0739	[KO Validated] NF2 Rabbit pAb	IF/ICC, IP, WB	H, M, R
		A23186	[KO Validated] NF2/Merlin Rabbit mAb	IHC-P, WB	H, M, R
	MOB1	A18246	MOB1A/MOB1B Rabbit pAb	IF/ICC, WB	H, M, R
	SAV1	A18667	[KO Validated] SAV1 Rabbit pAb	IHC-P, WB	H, M, R
	PP1	A2108	PPA1 Rabbit pAb	WB	H, M, R
		A20942	Pyrophosphatase 1 Rabbit mAb	WB	H, M, R
		A20942	Pyrophosphatase 1 Rabbit mAb	WB	H, M, R
	PP2A	A18089	[KO Validated] PP2A-Aβ/PR65β/PPP2R1B Rabbit pAb	IF/ICC, WB	H, M, R
	RhoA	A19106	RhoA Rabbit mAb	WB	H
Transcription regulatory molecules	TAZ	A8202	TAZ Rabbit pAb	IHC-P, IF/ICC, WB	H, M, R
		A23034	TAZ Rabbit mAb	IHC-P, WB	H, M, R
	TEAD	A5218	TEAD1 Rabbit mAb	CUT&Tag, ChIP, IP, WB	H, M, R
		A13366	TEAD1 Rabbit pAb	IHC-P, IF/ICC, WB,ChIP	H, M, R
		A7454	TEAD3 Rabbit pAb	IHC-P, IF/ICC, WB	H, M, R
		A23774	TEAD4 Rabbit mAb	WB	H
	YAP	A22650	[KO Validated] YAP1 Rabbit mAb	CUT&Tag, ChIP, IP, WB	H, M, R
		A19134	[KO Validated] YAP1 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
		A21216	[KO Validated] YAP1 Rabbit mAb	ChIP, IHC-P, IP, IF/ICC, WB	H, M, R
		A18651	MonoMethyl-YAP1-K342 Rabbit pAb	WB	H, M, R
		AP1187	Phospho-YAP1-S128 Rabbit pAb	WB	M

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Featured Citations

Title	Journal	Impact Factor	Product Name
Opposing roles of hepatic stellate cell subpopulations in hepatocarcinogenesis	Nature	64.8	TAZ Rabbit pAb (A8202)
Extracellular vesicles carrying miR-6836 derived from resistant tumor cells transfer cisplatin resistance of epithelial ovarian cancer via DLG2-YAP1 signaling pathway	International journal of biological sciences	9.2	TEAD1 Rabbit pAb (A13366)
Metallothionein 2A (MT2A) controls cell proliferation and liver metastasis by controlling the MST1/LATS2/YAP1 signaling pathway in colorectal cancer	Cancer cell international	5.9	[KO Validated] YAP1 Rabbit mAb (A19134)

Wnt Signaling Pathway

The Wnt signaling pathway is an evolutionarily conserved pathway that plays an important role in embryonic development and adult tissue homeostasis in regulating multiple processes (including cell proliferation, differentiation, migration, polarity, stem cell self-renewal and lineage differentiation, etc.). Aberrations in molecules associated with the Wnt signaling pathway induce a variety of diseases, especially the occurrence of various tumors. The Wnt proteins, a family of secreted glycoproteins, consist of 19 different proteins in humans, each serving distinct functions. Wnt proteins bind to Fz receptors and initiate downstream signaling. The main signaling branches have been identified, including the canonical β-catenin-dependent pathway and the atypical β-catenin-independent pathway. The β-catenin-independent pathway can be further divided into two branches: the planar cell polarity (PCP) pathway and the Wnt/Ca2+-dependent pathway.

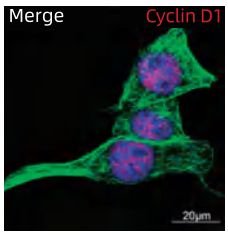
Hot-selling Antibodies for Wnt Signaling Pathway

[KO Validated] Cyclin D1 Rabbit mAb (A19038) —— Citation (74)

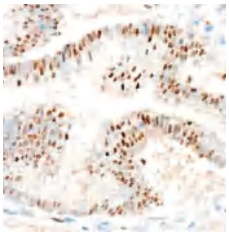
PathoQ Validated

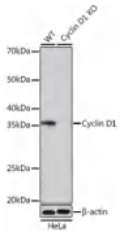
Application: IF/ICC, IHC-P, WB Reactivity: H, M, R

Cyclin D1 is an important regulatory protein that enters the S phase from the Gl phase of the cell cycle. It can promote DNA synthesis and accelerate cell proliferation. This protein plays a pivotal role in the research of malignant tumors such as B-cell lymphoma, breast cancer, head and neck squamous cell carcinoma, esophageal cancer, liver cancer and lung cancer.



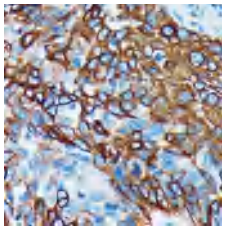
NIH/3T3 cells

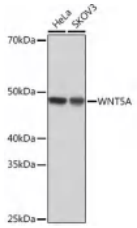

Human colon carcinoma



WNT5A Rabbit mAb (A19133) —— Citation(3)

Application: IHC-P, WB Reactivity: H

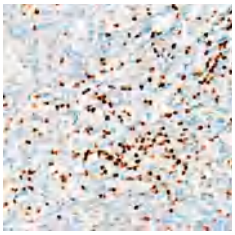

Human lung cancer

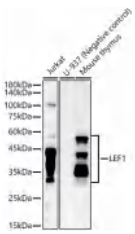


Wnt members can bind to the seven-transmembrane protein frizzled receptor family and activate multiple signaling pathways. The typical Wnt/β-Catenin protein pathway also requires a common receptor from the low-density lipoprotein receptor family. Aberrant activation of the Wnt signaling pathway is associated with various types of cancers.

LEF1 Rabbit mAb (A23458)

Application: IHC-P, IP, WB Reactivity: H, M


Human tonsil



LEF1 is a transcription factor belonging to a family of proteins that share homology with the high mobility group protein-1. The protein encoded by this gene can bind to a functionally important site in the T-cell receptoralpha enhancer, thereby conferring maximal enhancer activity.

Recommended

Research Tools for Wnt Signaling Pathway

Category	Target	Cat.No.	Product Name	Application	Reactivity
Typical pathway	SFRP	A9656	SFRP1 Rabbit mAb	WB	H, M, R
		A4189	SFRP4 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	WNT2	A23997	WNT2 Rabbit mAb	WB	H, M, R
	WNT2B	A19554	WNT2B Rabbit mAb	WB	H, M, R
	WNT5A	A19133	WNT5A Rabbit mAb	IHC-P, WB	H
	WNT16	A20899	WNT16 Rabbit mAb	WB	H, M, R
	GSK3β	A11731	GSK3β Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		AP1088	Phospho-GSK3β-S9 Rabbit mAb	IHC-P, WB	H, M
	β-Catenin	A19657	[KO Validated] β-Catenin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	APC	A17912	APC Rabbit mAb	IP, WB	H, M, R
	CKIα	A9308	Casein Kinase 1 alpha (CSNK1A1) Rabbit mAb	IHC-P, WB	H, M, R
	TCF1	A20835	TCF1/TCF7 Rabbit mAb	WB	H, M
	LEF1	A23458	LEF1 Rabbit mAb	IHC-P, IP, WB	H, M
	CyclinD1	A19038	[KO Validated] Cyclin D1 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	c-Myc	A19032	[KO Validated] c-Myc Rabbit mAb	CUT&Tag, ChIP, WB	H, M
Non-typical pathway	RHO	A4855	RHOA/RHOB/RHOC Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	ROCK2	A2395	ROCK2 Rabbit mAb	IHC-P, WB	H, M, R
	Cdc42	A19028	CDC42 Rabbit mAb	WB	H, M, R
	JNK	AP0631	Phospho-JNK1/2/3-T183/T183/T221 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
		A4867	JNK1/2/3 Rabbit mAb	IF/ICC, WB	H, M, R
	ROR2	A5120	ROR2 Rabbit mAb	WB	M
	PLCG2	A5182	PLC gamma 2 (PLCG2) Rabbit mAb	IF/ICC, WB	H, M, R
	PKCδ	A7778	PKC delta Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	c-Jun	AP0105	Phospho-c-Jun-S63 Rabbit mAb	IF/ICC, WB	H, M, R
	NFAT2	A23485	NFAT2 Rabbit mAb	WB	H, M
	NFATC3	A22710	NFATC3 Rabbit mAb	IF/ICC, WB	H, M, R

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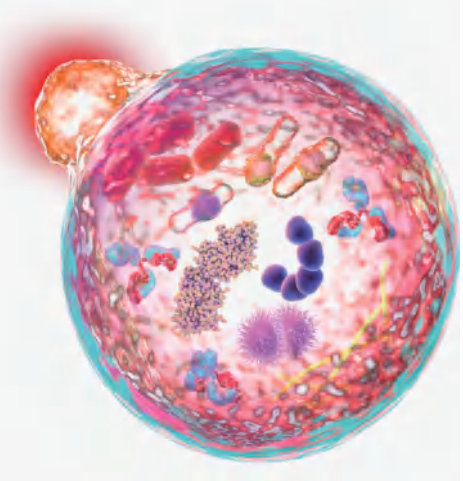
Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
Regeneration of the pulmonary vascular endothelium after viral pneumonia requires COUP-TF2	Sci Adv	13.6	[KO Validated] Cyclin D1 Rabbit mAb (A19038)
GOLPH3/CKAP4 promotes metastasis and tumorigenicity by enhancing the secretion of exosomal WNT3A in non-small-cell lung cancer	Cell Death Dis	9.685	WNT5A Rabbit mAb (A19133)
AFP deletion leads to anti-tumorigenic but pro-metastatic roles in liver cancers with concomitant CTNNB1 mutations	Cancer letters	9.75	GSK3β Rabbit mAb (A11731)

Research Tools for Tumor Immune Cytokines

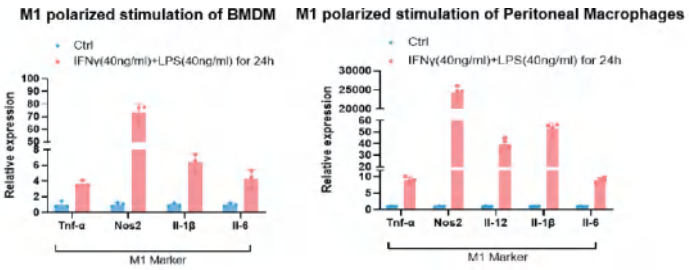


Tumor immune cell factors actively engage in the dynamic and intricate interactions between tumor cells and immune cells. Immune cell factors, a category of protein signaling molecules produced by cells in the immune system, play pivotal roles in regulating interactions and immune responses among immune cells. Notably, cytokines like IL-2, IL-12, IL-10, and TNF-α exert key functions in modulating immune cell activity, fostering anti-tumor immune responses, and inhibiting tumor growth and metastasis. A comprehensive understanding of the roles and regulatory mechanisms of immune cell factors in tumor immune responses provides a theoretical and experimental foundation for the development of novel tumor immunotherapy strategies.

Cytokine Proteins

Recombinant Mouse IFN-gamma Protein (RP01070)

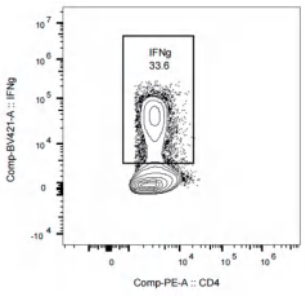
Interferon-gamma (IFN-gamma) is a secreted protein which belongs to the type II interferon family. IFN-gamma is produced by a variety of immune cells under inflammatory conditions, notably by T cells and NK cells. IFN-gamma, in addition to having antiviral activity, has important immunoregulatory functions.



The combination of IFNG and LPS stimulated mouse bone marrow macrophages and peritoneal macrophages to polarize into M1 type, respectively. QPCR was used to detect the expression changes of related markers TNF-α, Nos2, IL-1β, IL-6, and IL-12, and the results showed that the induction was successful.
(Customer feedback from Xiamen University)

Recombinant Mouse IL-12A&IL-12B Protein (RP01691)

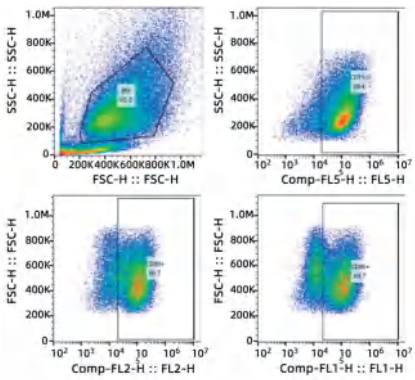
IL-12 is an important member of the interleukin family of cytokines and is mainly produced by macrophages.It exerts its primary effects on lymphocytes, promoting the response of helper T cells and driving their differentiation into Th1 cells with anti-tumor activity.



Active Recombinant Mouse IL-12 induces the mouse T cells differentiate into Th1 cells. Flow cytometry was used to detect the expression of IFN-γ. Result showed that Th1 cells were induced successfully. (Customer feedback from Xiamen University)

Recombinant Mouse IL-4 Protein (RP01161)

IL-4 is a glycosylated type 1 cytokine mainly produced by T cells, natural killer T cells, mast cells and eosinophils. IL-4 can enhance the expression of Fc-epsilon RI on B cells, mast cells and basophils through initiating signal transduction in two different receptor complexes, promote mast cell survival and proliferation, and induce mast cell , basophil and eosinophil chemotaxis, playing a central role in the development of allergic inflammation and asthma.



Recombinant Mouse IL-4 (10 ng/mL) and GM-CSF protein (20 ng/mL) induce C57BL/6 Mouse bone marrow cells to differentiate into BMDC. After 7 days, up to 89.4% of cells in the system expressed DC biomarker CD11c on cell surface, among which more than half of the cells have high expression of CD80 and CD86 proteins.
(Customer feedback from Xiamen University)

Recommended

Research Tools for Cytokines

Protein	Cat.No.	Product Name	Species	Gene ID
IFN-gamma	RP01038	Active Recombinant Human IFN-gamma Protein	Human	3458
IFN-gamma	RP01070	Recombinant Mouse IFN-gamma Protein	Mouse	15978
IL-12A&IL-12B	RP01232	Recombinant Human IL-12A&IL-12B Protein	Human	3593/3592
IL-12A&IL-12B	RP01691	Recombinant Mouse IL-12A&IL-12B Protein	Mouse	16159/16160
IL-1 beta	RP00002	Recombinant Human IL-1 beta Protein	Human	3553
IL-1 beta	RP01340	Active Recombinant Mouse IL-1 beta Protein	Mouse	16176
IL-4	RP01161	Recombinant Mouse IL-4 Protein	Mouse	16189
IL-4	RP00995	Active Recombinant Human IL-4 Protein	Human	3565
IL-10	RP01465	Recombinant Mouse IL-10 Protein	Mouse	16153
IL-10	RP00093	Recombinant Human IL-10 Protein	Human	3586
IL-2	RP01384	Recombinant Mouse IL-2 Protein	Mouse	16183
IL-2	RP01039	Active Recombinant Human IL-2 Protein	Human	3558
IL-13	RP01320	Recombinant Human IL-13 Protein	Human	3596
IL-15	RP01236	Active Recombinant Human IL-15 Protein	Human	3600
IL-21	RP01312	Recombinant Human IL-21 Protein	Human	59067

ELISA for Cytokines Detection

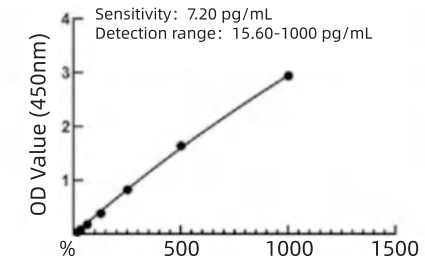
In tumor tissue, monocytes can differentiate into M2-polarized macrophages through the secretion of interleukins, colonystimulating factors, and transforming growth factors by tumor cells, fibroblasts, Th2 lymphocytes, etc. TAMs are mature M2-polarized macrophages that exhibit strong immunosuppressive activity mainly by secreting chemokines, cytokines, and colonystimulating factors . TAMs also directly secrete molecules affecting tumor cell growth regulate inflammatory responses and adaptive immunity, promote the formation of an immunosuppressive tumor environment, and play a pro-tumor role.

Myeloid-derived suppressor cells originate from immature granulocytes, monocytes, or DCs' bone marrow progenitor cells and differentiate into MDSCs mediated by tumor-related inflammatory cytokines like interleukins in lymphoid organs. By improving nutrient availability in the tumor microenvironment and coordinating immune responses of other cells, MDSCs promote immune suppression and anti-inflammatory phenotypes, leading to tumor immune evasion. ELISA is the most common method for detecting cytokines.

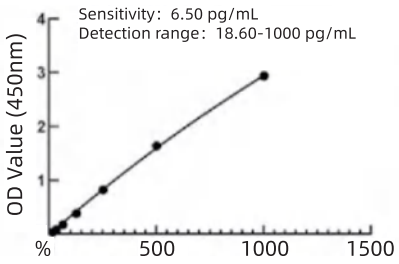
ELISA Ready-to-use kits, used for quantitative detection of various molecules

1. **Various targets:** cytokines, chemokines, growth factors, and neurotrophic factors
2. **Mature and stable:** cited in many published journal, meet the needs of most R&D customers
3. **High stability:** the complete kit should be stored at 2-8℃

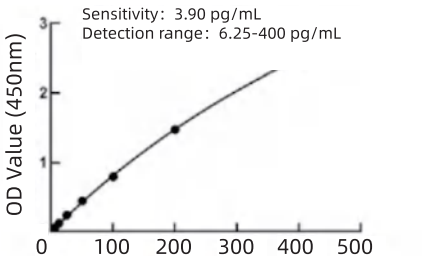
Excellent curve linearity



Mouse IL-6 Concetrattion (pg/mL)
Mouse IL-6 ELISA Kit (RK00008)



Mouse TNF-alpha Concentration (pg/mL)
Mouse TNF-alpha ELISA Kit (RK00027)



Human IL-1 beta Concentration (pg/mL)
Human IL-1 beta ELISA Kit (RK00001)

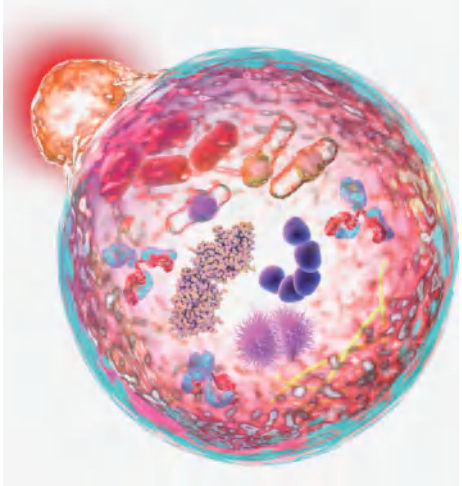
Recommended

Research Tools for Cytokines Detection

Cytokines	Cat.No.	Product Name	Cat.No.	Product Name
Interleukin	RK00031	Human IL-1 alpha ELISA Kit	RK00103	Mouse IL-1 alpha ELISA Kit
	RK00001	Human IL-1 beta ELISA Kit	RK00006	Mouse IL-1 beta ELISA Kit
	RK00002	Human IL-2 ELISA Kit (High Sensitivity)	RK00007	Mouse IL-2 ELISA Kit
	RK00003	Human IL-4 ELISA Kit	RK00036	Mouse IL-4 ELISA Kit

Interleukin	RK00004	Human IL-6 ELISA Kit	RK00037	Mouse IL-5 ELISA Kit
	RK00120	Human IL-7 ELISA Kit	RK00008	Mouse IL-6 ELISA Kit
	RK00011	Human IL-8/CXCL8 ELISA Kit	RK04528	Mouse IL-6 Uncoated ELISA Kit
	RK00121	Human IL-9 ELISA Kit	RK00058	Monkey Interleukin 6 ELISA Kit (IL6)
	RK00098	Rat IL-1 alpha ELISA Kit	RK00040	Rat IL-4 ELISA Kit
	RK00009	Rat IL-1 beta ELISA Kit	RK00020	Rat IL-6 ELISA Kit
	RK00010	Rat IL-2 ELISA Kit		
Interferon	RK00092	Human IFN alpha ELISA Kit	RK00161	Monkey IFN-gamma ELISA Kit
	RK00015	Human IFN-gamma ELISA Kit	RK00019	Mouse IFN-gamma ELISA Kit (IFNG)
	RK00420	Mouse IFN-beta ELISA Kit		
Chemokine	RK00038	Mouse CXCL1/KC ELISA Kit	RK04197	Human CXCL1/GRO alpha ELISA Kit
	RK00056	Mouse CXCL10/IP10 ELISA Kit	RK00054	Human CXCL10/IP10 ELISA Kit
	RK00168	Mouse CXCL12/SDF-1 ELISA Kit	RK00266	Human CXCL12/SDF-1 ELISA Kit
	RK04217	Rat MIP-1 alpha/CCL3 ELISA Kit	RK00079	Human CXCL16 ELISA Kit
	RK00196	Rat CXCL1/CINC-1/KC ELISA Kit	RK00150	Human CXCL2/GRO-beta ELISA Kit
	RK00052	Human Monocyte Chemotactic Protein 1 ELISA Kit (MCP1)	RK04207	Human CXCL4/PF4 ELISA Kit
	RK00247	Human PARC/CCL18 ELISA Kit	RK04216	Human MCP-2/CCL8 ELISA Kit
	RK00140	Human SDF-1 alpha ELISA Kit	RK04210	Human MIG/CXCL9 ELISA Kit
	RK00077	Human CCL5/Rantes ELISA Kit	RK04215	Human MIP-1 alpha/CCL3 ELISA Kit
Growth factor	RK00055	Human Transforming Growth Factor Beta 1 ELISA Kit (TGFb1)	RK04224	Human beta-cellulin/BTC ELISA Kit
	RK00024	Human EGF ELISA Kit	RK00152	Human TWEAK ELISA Kit
	RK00024HS	Human EGF ELISA Kit (High Sensitivity)	RK00023	Human VEGFA ELISA Kit
	RK04453	Human EGFL6 ELISA Kit	RK00364	Mouse EGF ELISA Kit
	RK00021	Human FGF basic ELISA Kit	RK00197	Rat EGF ELISA Kit
	RK00084	Human FGF-21 ELISA Kit	RK00066	Rat VEGFA ELISA Kit
	RK00160	Human IGF-1 ELISA Kit		
	RK04511	Human TGF-alpha ELISA kit		
Colony-stimulating factor	RK00045	Human GM-CSF ELISA Kit	RK00049	Mouse GM-CSF ELISA Kit
	RK00044	Human M-CSF ELISA Kit		
Tumor necrosis factor	RK04121	Human Tumor Necrosis Factor Ligand Superfamily, Member 9 ELISA Kit (TNFSF9)	RK00030	Human TNF-alpha ELISA Kit

Tumor Immune Checkpoint

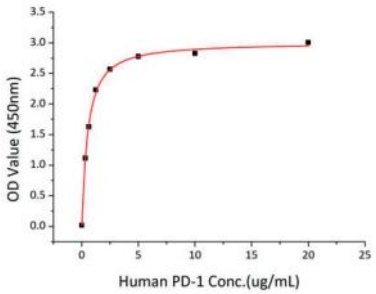


Immune Checkpoint is a type of immunosuppressive molecule that is expressed on immune cells, can regulate the degree of immune activation, and plays an important role in preventing the occurrence of autoimmunity. Immune checkpoint immunotherapy is a treatment method that regulates T cell activity to kill tumor cells through a series of pathways such as co-inhibitory or co-stimulatory signals. Immune checkpoint enable the immune system to remain within the normal range when activated and maintain the immune homeostasis. Excessive immune responses can lead to tissue damage in inflammatory conditions and autoimmune diseases, while suppressed immune response is closely related to the occurrence and development of various tumors.

Immune Checkpoint Proteins

Recombinant Human B7-H1/PD-L1/CD274 Protein (RP00068)

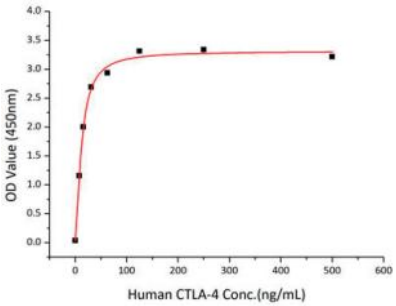
This protein is an immune inhibitory receptor ligand that is expressed by hematopoietic and non-hematopoietic cells, such as T cells and B cells and various types of tumor cells. The protein is a type I transmembrane protein that has immunoglobulin V-like and C-like domains. Interaction of this ligand with its receptor inhibits T-cell activation and cytokine production.
In tumor microenvironments, this interaction provides an immune escape for tumor cells throughcytotoxicT-cellinactivation.



Immobilized Recombinant Human PD-L1 at 10 μg/mL (100μL/well) can bind Recombinant Human PD-1 with a linear range of 0.25-1.02 μg/mL. (Selfchecking data)

Recombinant Human CTLA-4/CD152 Protein (RP01044)

CTLA4, also known as CD152, is a transmembrane protein expressed on activated CD4+CD8+ T cells.CTLA4 has two ligands: B7-1 (CD80) and B7-2 (CD86). When combined with the ligand, an inhibitory signal to T cells is produced. Due to its profound inhibitory effect, CD152 is considered a good susceptibility candidate for autoimmunity and a convincing target for cancer immunotherapy. In particular, recent evidence suggests that CD152 also plays a very important role in the homeostasis and function of a population of suppressive cells called regulatory T cells (Tregs).



Immobilized Ipilimumab at 1 μg/mL (100 μL/well) can bind Recombinant Human CTLA-4 with a linear range of 6-18 ng/mL. (Self-checking data)

Recommended

Research Tools for Immune Checkpoint

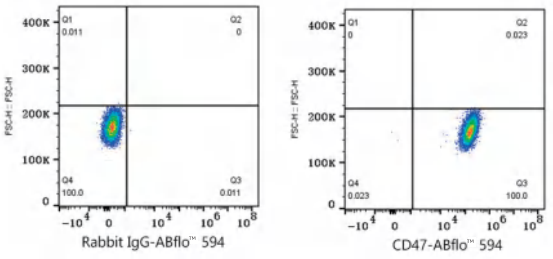
Protein	Cat.No.	Product Names	Species	Gene ID
PD-L1	RP00068	Recombinant Human B7-H1/PD-L1/CD274 Protein	Human	29126
PD-L1	RP00184	Recombinant Human B7-H1/PD-L1/CD274 Protein	Human	29126
PD-L1	RP01158	Recombinant Mouse B7-H1/PD-L1/CD274 Protein	Mouse	60533
PD-1	RP00067	Recombinant Human PD-1/PDCD1/CD279 Protein	Human	5133
OX-2	RP00127	Recombinant Human OX-2/CD200 Protein	Human	4345
CTLA-4	RP01044	Recombinant Human CTLA-4/CD152 Protein	Human	1493
CD28	RP00136	Recombinant Human CD28 Protein	Human	940
B7-H3	RP01020	Recombinant Human B7-H3/CD276 Protein	Human	80381
B7-H5	RP01328	Recombinant Mouse B7-H5/Gi24/VISTA Protein	Mouse	74048
CD86	RP00090	Recombinant Human B7-2/CD86 Protein	Human	942
CD86	RP01234	Recombinant Mouse B7-2/CD86 Protein	Mouse	12524
CD86	RP01235	Recombinant Mouse B7-2/CD86 Protein	Mouse	12524
CD80	RP00065	Recombinant Human B7-1/CD80 Protein	Human	941

Hot-selling Antibodies for Immune Checkpoint

ABflo™ 594 Rabbit anti-Human CD47 mAb (A24302)

Application: FC Reactivity: H

CD47 (integrin-associated protein, IAP), a member of the immunoglobulin superfamily, mediates cell proliferation, migration, T cell activation and phagocytosis. CD47 helps maintain immune tolerance of benign cells under physiological conditions to ensure that autologous cells are not inappropriately phagocytosed. Many different types of cancer cells use the high expression of CD47 to mediate the immune evasion of cancer cells and escape the fate of being engulfed.

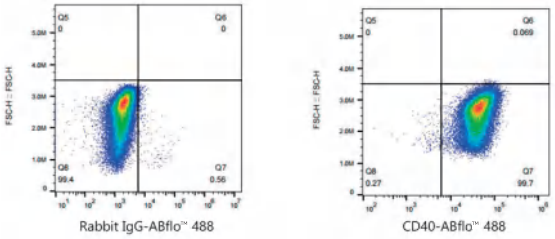


M O L T - 4 cells

ABflo™ 488 Rabbit anti-Human CD40 mAb (A22641)

Application: FC Reactivity: H

CD40 is a type 1 transmembrane protein that is widely expressed in platelets, B cells, myeloid cells and some tumor cell lines. The homologous ligand of CD40 is CD154 (also known as CD40L). The activation of CD40-CD40L promotes the activation of T cells, the production of antibodies by B cells, and can also directly trigger apoptosis in tumor cells.



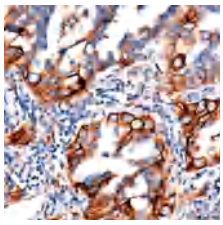
U-2 OS cells

PD-L1/CD274 Rabbit mAb (A19135)

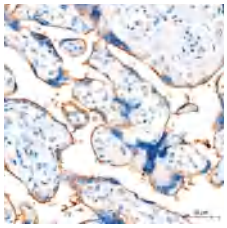
PathoQ Validated

Application: IHC-P, WB Reactivity: H

PD-L1 (programmed cell death-ligand 1) is a type I transmembrane protein.It participates in cellular regulation and immune response, downregulating T cell-mediated tumor immune response. PD-L1 protein expression has been detected in human breast cancer, lung cancer, gastric cancer, pancreatic cancer, melanoma and other tumors.



Human lung adenocarcinoma



Human placenta

Recommended

Research Tools for Immune Checkpoint

Category	Target	Cat.No.	Product Name	Application	Reactivity
Costimulatory molecules	CD27	A11505	CD27 Rabbit mAb	IF/ICC, WB	H, R
		A22063	ABflo® 488 Rabbit anti-Human CD27 mAb	FC	H
		A22064	ABflo® 647 Rabbit anti-Human CD27 mAb	FC	H
	CD28	A20346	CD28 Rabbit mAb	FC, WB	H, M, R
	CD40	A20214	CD40 Rabbit mAb	FC	H
		A21938	ABflo® 488 Rabbit anti-Human CD40 mAb	FC	H
		A21947	ABflo® 647 Rabbit anti-Human CD40 mAb	FC	H
	CD70/CD27L/TNFSF7	A20589	CD70 Rabbit mAb	FC, WB	H
		A22302	ABflo® 488 Rabbit anti-Human CD70 mAb	FC	H
		A22303	ABflo® 647 Rabbit anti-Human CD70 mAb	FC	H
	CD86	A21198	CD86 Rabbit mAb	IF/ICC, FC, WB	H
		A21940	ABflo® 488 Rabbit anti-Human CD86 mAb	FC	H
		A21941	ABflo® 647 Rabbit anti-Human CD86 mAb	FC	H
	ICOS/AILIM/CD278	A5130	ICOS/CD278 Rabbit mAb	WB	H, M, R
	MICA	A19256	MICA Rabbit mAb	WB	H, M, R
	CD155/PVR	A23084	CD155/PVR Rabbit mAb	IHC-P, WB	H, R
Co-inhibitory molecules	CD47	A24300	ABflo® 488 Rabbit anti-Human CD47 mAb	FC	H
		A24302	ABflo® 594 Rabbit anti-Human CD47 mAb	FC	H
		A24378	ABflo® 647 Rabbit anti-Mouse CD47 mAb	FC	M

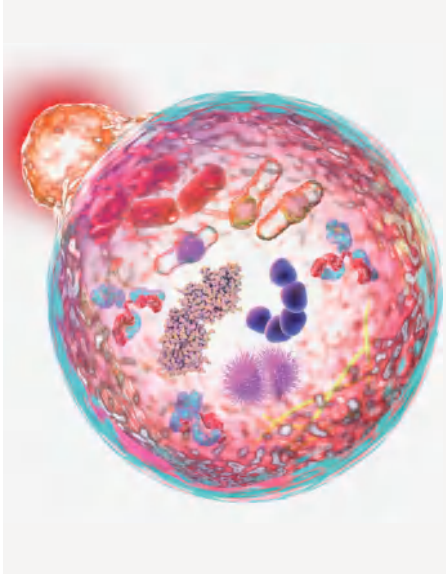
Category	Target	Cat.No.	Product Name	Application	Reactivity
Co-inhibitory molecules	CD48/SLAMF2	A4084	CD48 Rabbit mAb	FC, WB	H, M
		A21937	ABflo® 488 Rabbit anti-Human CD48 mAb	FC	H
		A21946	ABflo® 647 Rabbit anti-Human CD48 mAb	FC	H
	PD-L1/B7-H1/CD274	A19135	PD-L1/CD274 Rabbit mAb	IHC-P, WB	H
		A23136	PD-L1/CD274 Rabbit PolymAb®	IHC-P, IF/ICC	H
		A22304	ABflo® 488 Rabbit anti-Human PD-L1/CD274 mAb	FC	H
		A22305	ABflo® 647 Rabbit anti-Human PD-L1/CD274 mAb	FC	H
	CTLA-4/CD152	A22865	CD152/CTLA-4 Rabbit mAb	WB	H
		A23713	PE Rabbit anti-Human CD152/CTLA-4 mAb	FC	H
	TIM-3/HAVCR2	A22158	ABflo® 488 Rabbit anti-Human TIM-3/HAVCR2 mAb	FC	H
	SIGLEC3/CD33	A22639	ABflo® 488 Rabbit anti-Human CD33 mAb	FC	H
		A22640	ABflo® 647 Rabbit anti-Human CD33 mAb	FC	H
	CEACAM1/CD66a	A11626	CEACAM1 Rabbit mAb	IHC-P, WB	H, R

PolymAb™ : a mixture of monoclonal antibodies

Featured Citations

Title	Journal	Impact Factor	Product Name
LncRNA FAM83H-AS1 promotes the malignant progression of pancreatic ductal adenocarcinoma by stabilizing FAM83H mRNA to protect β-catenin from degradation	Journal of experimental & clinical cancer research	12.658	CD40L Rabbit mAb (A19019)
Microglia-derived TNF-α contributes to RVLM neuronal mitochondrial dysfunction via blocking the AMPK-Sirt3 pathway in stress-induced hypertension	J Neuroinflammation	9.587	CD86 Rabbit mAb (A19026)
Single-cell RNA sequencing reveals the immune microenvironment and signaling networks in cystitis glandularis	Frontiers in immunology	7.3	CD27 Rabbit mAb (A11505)

Research Tool for Tumor Marker



Tumors have high mortality, metastasis, and recurrence rates, posing a significant threat to human health. Screening for tumor markers is crucial for early tumor detection. Tumor markers indicate the presence and changes in tumor growth and can be found in blood, cells, urine, body fluids, or tissues. Common tumor markers include carcinoembryonic antigen, tumor antigens, enzyme markers, hormones, and carbohydrate antigens.Tumor marker testing provides convenient, non-invasive, and cost-effective ways to monitor disease progression and aid in tumor prevention, early diagnosis, and treatment guidance. Detecting tumor markers is crucial for tumor classification, disease monitoring, and predicting prognosis, complementing other medical techniques in tumor diagnosis and treatment.

Tumor Gene Expression and Identification

Clinical studies have shown that detecting gene mutations, gene SNP typing, and protein expression in tumor patients' biological samples can predict drug efficacy, evaluate prognosis, and guide personalized treatment. This approach improves efficacy, reduces adverse reactions, and optimizes medical resource utilization. Precise treatment plans based on multi-gene testing can extend progression-free survival (PFS) and overall survival (OS) in clinical settings. ABclonal offers comprehensive tumor detection solutions, including sample preparation, nucleic acid extraction reagents, and materials for qPCR and high-throughput sequencing NGS platforms.

Tumor Samples Preparation

Recommended ★★★

Nucleic acid extraction Product Lists

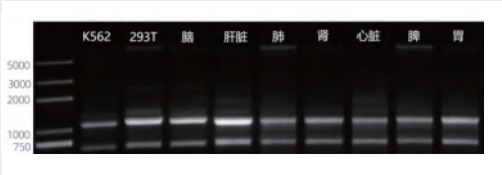
Application	Product Cat.No.	Product Name
Rapid extraction of total RNA from animal	RK30120	AFTSpin Tissue/Cell Fast RNA Extraction Kit for Animal
DNA extraction from blood tissue cells	RK30110	AFTSpin Blood/Tissue/Cell Fast DNA Extraction Kit
Whole blood RNA extraction	RK30125	AFTSpin Blood Fast RNA Extraction Kit
FFPE DNA extraction	RK30112	AFTSpin FFPE DNA Isolation Kit

AFTSpin Tissue/Cell Fast RNA Extraction Kit for Animal (RK30120)

Product Description

This kit does not rely on toxic reagents such as phenol and chloroform, and can be used for rapid RNA extraction from common animal tissue and cell samples. The excellent silica gel column purification technology can effectively remove residual gDNA and quickly extract animal total RNA. Extracted RNA can be directly used in reverse transcription PCR, qPCR and RNA library construction experiments.

Product Data



Use the ABclonal RK30120 kit to extract RNA from 293T cells, K562 cells, and various mouse tissues.Subsequently, the extracted RNA was subjected to agarose gel electrophoresis for detection. The results demonstrate that RK30120 exhibits excellent compatibility for extracting RNA from different cell types and animal tissue samples.

Product Features

1. **Safe:** Avoids toxic reagents such as phenol and chloroform as well as ethanol precipitation
2. **Convenient and fast:** Extraction of a single sample can generally be completed within 15 minutes
3. **Wide compatibility:** Compatible to most animal tissue and cell samples
4. **High purity extraction:** RNA obtained has high purity with minimal genomic residue

AFTSpin Blood/Tissue/Cell Fast DNA Extraction Kit (RK30110)

Product Description

This kit is suitable for quick and simple extraction of genomic DNA from various samples inclouding blood, cells and tissue. The extracted genomic DNA fragment are large, high purity and good stability, and can be directly used in PCR, enzyme digestion and hybridization experiments. The extraction process does not require phenol-chloroform extraction.

Product Data

For DNA extraction from some common samples, the using effect of ABclonal RK30110 is comparable to or superior to our competitors.

Product Features

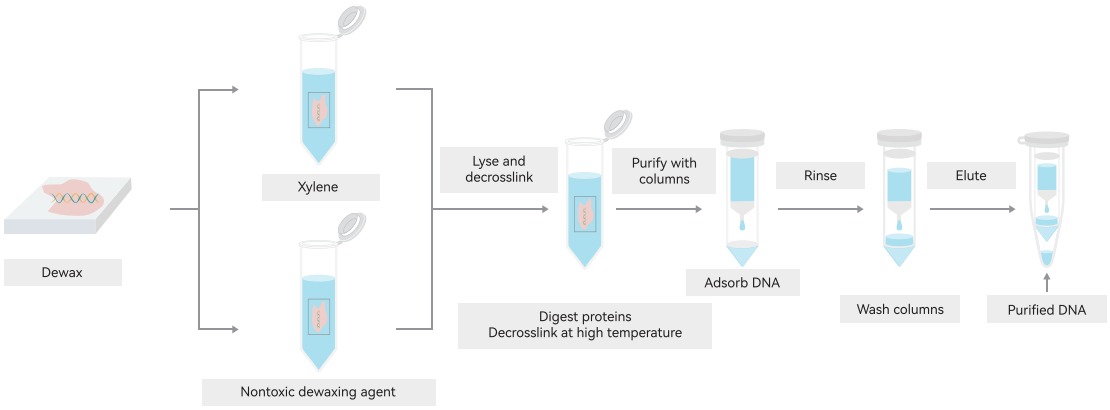
1. **Easy to use:** The entire experimental process can be completed in 1 hour without the use of toxic reagents
2. **Safe:** Does not contain toxic reagents such as phenol and chloroform
3. **Wide compatibility:** Applicable to all kinds of blood samples, animal cells and animal tissues

AFTSpin FFPE DNA Isolation Kit (RK30112)

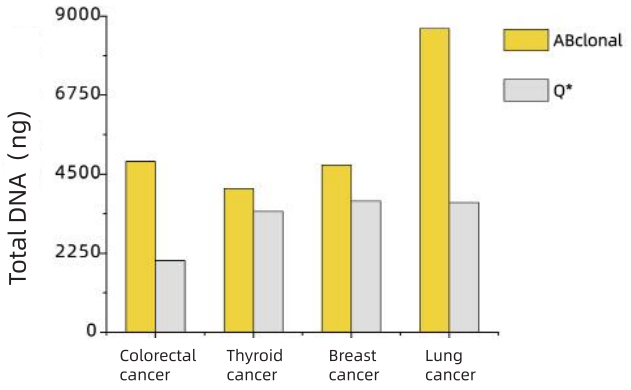
Product Features

1. **Convenient and fast:** Complete the extraction of several samples without overnight incubation digestion
2. **High yield:** Extraction process ensures high recovery efficiency
3. **Wide compatibility:** Meeting different downstream experimental needs Southern Blot, PCR, NGS
4. **Safe and non-toxic:** The extraction process uses non-toxic dewaxing liquid, does not involve xylene and other organic reagents

Work Flow



Excellent DNA extraction volume



Use the AFTSpin FFPE DNA Isolation Kit to extract DNA from various types of FFPE samples,and determine the DNA concentration with a Qubit instrument. Results show high-quality extraction with a higher total DNA yield than the competitive product.

Tumor qPCR Detection Solution

PCR technology has been widely used in many fields of nucleic acid diagnosis, including gene knockout analysis, mutation and polymorphism analysis, quantitative analysis, and RNA detection. It is also increasingly used in the field of tumor diagnosis. It offers efficiency, reliability and simplicity. The market for PCR products is large and growing rapidly. Tumor biomarkers (such as ctDNA) in the blood are extremely low in the early stages of cancer and fluctuate between different stages and types of cancer. Liquid biopsy based on qPCR has advantages in detection throughput and can reduce the cost and complexity of detection. This detection protocol can be used for multiplex detection of ctDNA markers, including methylated ctDNA.

ABclonal, as a renowned domestic molecular diagnostics supplier, is dedicated to the research, development, production, and sale of molecular diagnostic products. With a diverse range of molecular diagnostic series products, ABclonal delivers high-quality, high-performance test kits and raw materials to meet the needs of its customers. Additionally, ABclonal offers precise customization services according to customer requirements, providing robust support for various tumor-related testing demands.

Recommended

qPCR Products List

Category	Cat.No.	Product Name	Description
Probe qPCR	RK21222	Entrans 2X qPCR Probe Master Mix with UDG	Master Mix with UDG
	RK21212	Entrans 2X qPCR Probe Master Mix V2	Master Mix
One-step probe RT qPCR	RK20412	ABScript III One Step RT-qPCR Probe Kit with UDG V5	Probe-based RT-qPCR
	RK20413	Fast One Step Probe RT-qPCR kit	Probe-based RT-qPCR (Rapid)
Methyl-qPCR	RK21240	MethyLight 2X qPCR Probe Master Mix	A powerful tool for MSP analysis of methylated DNA and multi-target detection

Featured Citations

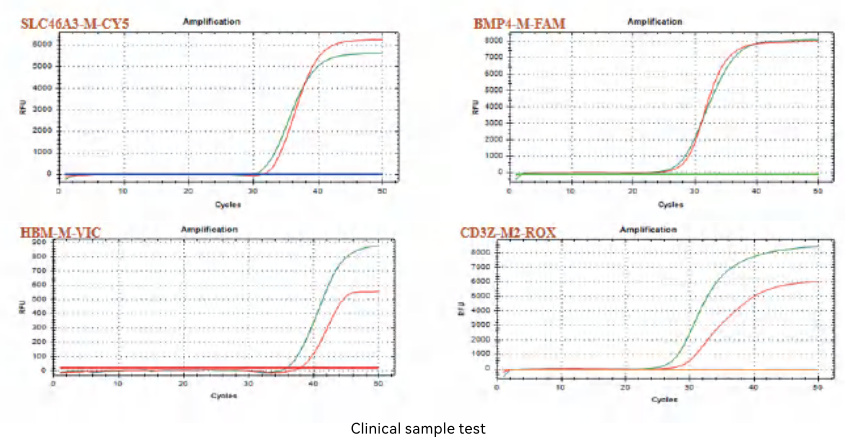
Title	Journal	Impact Factor	Product Cat.No.
Tetramethylpyrazine Protects Endothelial Injury and Antithrombosis via Antioxidant and Antiapoptosis in HUVECs and Zebrafish - PMC	Oxidative medicine and cellular longevity	7.31	RK20412
Chronic stress promotes glioma cell proliferation via the PI3K/Akt signaling pathway	Oncol Rep	4.136	RK20412

MethyLight 2X qPCR Probe Master Mix-RK21240

Product Description

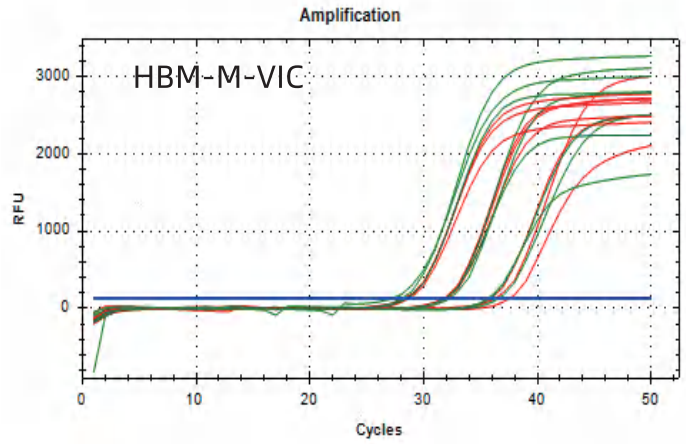
MethyLight 2X qPCR Probe Master Mix is a probe-based reagent for real time PCR reaction. It is a powerful tool for MSP analysis of methylated DNA and multi-target detection in epigenetic research.It is an optimized premix containing DNA polymerase, dNTPs, MgCl2, KCl and other stabilizers. The optimized master mixes ensure that the PCR products in a reaction with bisulfite converted DNA as starting material are amplified with high efficiency and sensitivity. This product is a 2× concentration master mix, which contains all the components required for MethyLight qPCR reactions except primers, probes and templates

Product Data



Clinical sample test

5ng ctDNA (SHYF84- sample of metastatic lung cancer) was converted by bisulfite, and qPCR detection was performed by RK21240 and its competitor, respectively, and the results showed that the RK21240 (green) was far better than that of similar competitors (red).



Template: Bisulfite-converted template Copy numbers: 2000, 200, 20 Stored reagent RK21240 at -20 °C control (red) vs 37 °C (green) for 40 days. The results demonstrated consistent performance even when RK21240 was stored at 37°C for 40 days

Entrans 2X qPCR Probe Master Mix with UDG-RK21222

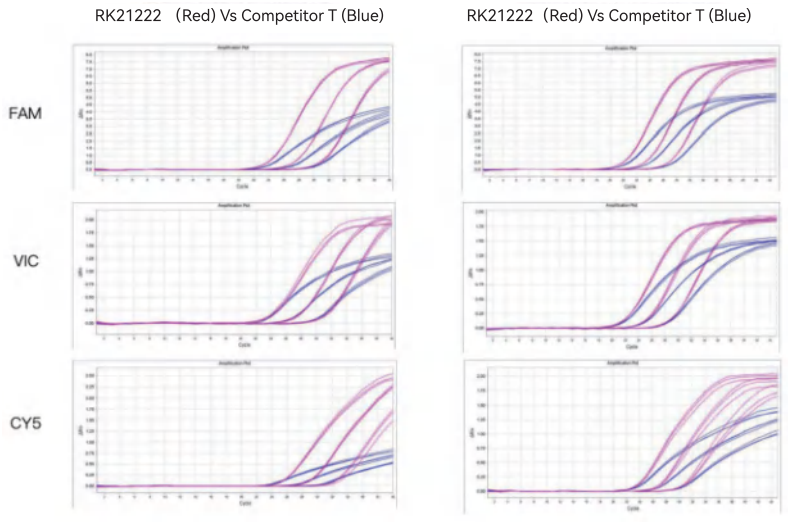
Product Description

Entrans 2X qPCR Probe Master Mix with UDG is a ready-to-use reagent for probe-based qPCR reactions, containing all components except primers, probes and templates. This master mix includes a chemically modified version of Taq polymerase with Hot-start capability to inhibit non specific amplification, while allowing high efficiency, sensitivity and reproducibility in qPCR amplification. At the same time, and has joined the UDG antipollution system. The optimization of the Buffer system allows the product to perform multiple fluorescence quantitative experiments, and It is suitable for multiple species and provides a powerful tool for multi-disciplinary experimental needs.

Product Feature

1. Containing UDG/dUTP anti-contamination system, effectively prevent aerosol contamination
2. It can be stored at room temperature for at least 10 days without significant performance change
3. Suitable for multiple probe detection (at least 4-plex)
4. Suitable for tumor genotyping screening

Product Data



Human gDNA (starting concentration of 10 ng/μL) as template,perform two 10-fold gradient dilution, then use RK21222, competitor V and competitor to amplify the template respectively.

The results showed that RK21222 had higher sensitivity and stronger fluorescence signal than the competitors' products.

ABScript III One Step RT-qPCR Probe Kit with UDG V5 -RK20412

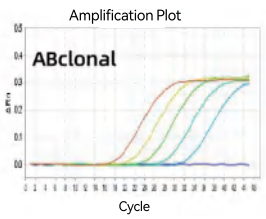
Product Description

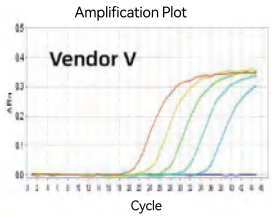
ABScript III One Step RT-qPCR Probe Kit with UDG V5 is a ready-to-use kit allowing reverse transcription and subsequent probe-based qPCR in a single tube. It contains all components for RT-qPCR except primers, probes and RNA templates. The one-step format significantly improves sensitivity and effectively prevent contamination. The heat-liable UDG in this product could degrade U-contained contamination in room temperature, and inactivated in 50℃ , which could prevent false positive results without affect the efficiency and sensitivity. The ABScript III Reverse Transcriptase in the kit provides reliable reverse transcription to a wide range of RNA template amount. After reverse transcription, the Hot-start version of Taq polymerase is activated at 95° C and the ABScript III Reverse Transcriptase is inactivated simultaneously. In the sequential PCR reaction, the 5'-3' exonuclease activity of Taq polymerase cleaves the hybridized probe, separating the reporter from the quencher and releasing fluorescent signal. The ABScript III One Step RT-qPCR Probe Kit is an ideal product for high-speed analyses of low input RNA sample.

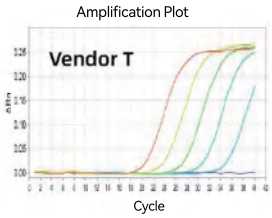
Product Features

1. RT, qPCR one-tube reaction, and operation steps are reduced
2. Contains dUTP/UDG anti-contamination system, prevents aerosol contamination effectively
3. Compatible with multiple probe systems (at least quadruple probe)
4. Suitable screening and detection of tumor biomarkers (such as lncRNA)
5. Good stability, and the activity will not be significantly affected if stored at 37℃ for a week

Product Data







log	2	1	0	-1	-2	E (%)	R2
ABclonal	21.061922	24.343271	27.594267	31.290552	35.469372	90.38	0.997
Vendor V	23.228533	26.459255	29.930073	33.623936	37.719734	89.08	0.997
Vendor T	23.345409	26.746599	30.082512	33.610199	37.866066	89.89	0.997

Using mouse RNA as the template (100 ng/μl as the initial concentration),the 5'-end TAMRA fluorescently labeled probe, five 10-fold gradient dilutions,RK21222 can detect the target gene with better performance and high detection sensitivity compared with other manufacturers' products.

Tumor NGS Detection Solution

Early Tumor Screening-DNA Methylation Detection

Compared with conventional cancer screening methods including microscopy, B-ultrasound, X-ray, CT, PET-CT diagnosis, etc., non-invasive cfDNA liquid biopsy has better safety, cost-effectiveness, and diagnostic performance. It possesses numerous cancer cell-specific genetic characteristics, making it a promising tool for early cancer screening. Abnormal DNA methylation is an important mechanism driving the formation of cancer. The inclusion of cfDNA methylation in liquid biopsy, particularly at the cytosine (C) position, holds significance for early cancer screening.

Recommended

Products Lists

Application	Cat.No.	Product Name	Description
Enzyme raw materials	RK20558	T4-BGT	Glycosyltransferase, a tool enzyme for methylation research
Enzyme raw materials	RK20559	APOBEC	Cytosine deaminase, a tool enzyme for methylation research
Methylated DNA library construction	RK20220	Scale Methyl-DNA Lib Prep Kit for Illumina	Universal, fast, efficient, used for the Ilumina platform
DNA methylase Mix/Kit	RK20722	Gloria U 2X HS Master Mix	Effectively amplifying templates containing uracil

Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
Human PSCs determine the competency of cerebral organoid differentiation via FGF signaling and epigenetic mechanisms - PMC	iScience	6.1	RK20220
Testicular histone hyperacetylation in mice by valproic acid administration affects the next generation by changes in sperm DNA methylation - PMC	PloS one	3.75	RK20220

DNA Methylation, Enzymatic Conversion Materials (T4 BGT-RK20558 APOBEC-RK20559)

Product Description

Methylation detection of ctDNA is increasingly favored by many domestic and foreign cancer early screening companies. Whole-genome bisulfite sequencing (WGBS) is the gold standard for methylation profile analysis, but the chemical reaction of bisulfite can damage and degrade DNA, leading to DNA fragmentation and loss, and is not suitable for rare samples (such as cfDNA/ctDNA).) in application. In addition, the bisulfite library showed obvious GC tropism, especially in methylated regions. To overcome these limitations, attention has shifted towards enzymatic conversion methods.

Product Features

1. Minimal DNA damage with library insert fragments being larger compared to Bisulfite treatment
2. High library yield

Product Applications

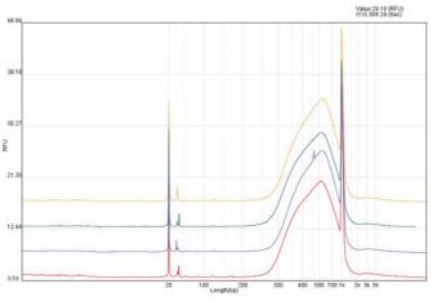
DNA methylation detection

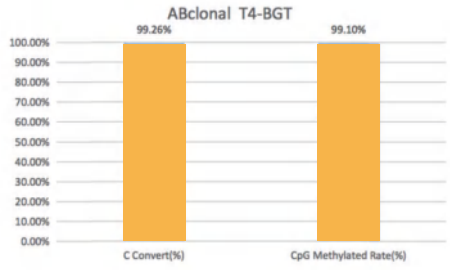
Enzymatic transformation

Product Data

Using ABclonal's enzyme raw materials and reagents, 100ng Human blood gDNA sample was added with Unmethylated Lambda DNA and pG-methvlated pUC19 to perform BS conversion and enzymatic conversion respectively, and then uniformly used RK20220 ABconal Scale Meth-DNA Li Prep Kit for lumina single-stranded library construction and sequencing method to evaluate the conversion efficiency and library quality of the methylation conversion method.

1. Functional verification of T4-BGT

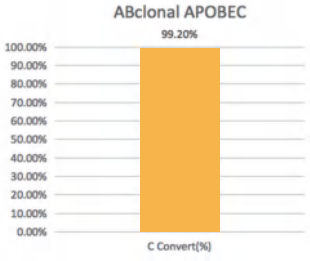




Using ABclonal T4-BGT raw material for methylation library construction, the library yield is high and the library insert is large, which is significantly better than the BS method.

The library constructed by enzymatic conversion of ABclonalT4-BGT met the expected requirements for the conversion efficiency of 1% Unmethylated Lambda DNA internal reference and 0.1% CpG methylated pUC19 internal reference.

2. Functional verification of APOBEC



The library constructed through the ABclonaL APOBEC enzyme method achieved the expected transformation efficiency with Unmethylated Lambda DNA as the internal reference.

Scale Methyl-DNA Lib Prep Kit for Illumina-RK20220

Product Description

DNA methylation refers to the methylation state of the cytosine (C) in the CpG dinucleotide on the DNA molecule. Usually, CpG in eukaryotic genomes are distributed in two forms: one is scattered among genes Region, the other is distributed in the promoter region and upstream regulatory region of genes in the form of CpG islands. DNA methylation is of great significance to tumor diagnosis and basic science research. Whole-genome bisulfite sequencing (WGBS) is considered the gold standard for DNA methylation sequencing. However, in the classic WGB5 experimental procedure, Bisulfite treatment and subsequent deamination and desulfonation treatment will degrade nearly 90% of the library molecules. Therefore, the construction of classic WGBS libraries requires a higher starting amount of template (microgram level), and the probability of the final data obtained is very low. High, causing a lot of waste of sequencing data.

Single-stranded DNA methylation library construction involves initially treating the template with Bisulfite and then using single-stranded DNA library construction technology for library preparation. Compared with classic WGBS, single-stranded DNA methylation library construction technology can effectively reduce the initial amount of templates and the amount of excess data, significantly reducing sequencing costs.

Product Features

1. Bisulfite processes the template first, and then builds the database
2. Can meet the starting amount of 5ng ~ 200 ng DNA sample library preparation
3. Use single-stranded DNA as a template to build a library, which is not affected by the integrity of double-stranded DNA.
4. Suitable for various application sample types, including Bisulfite-treated genomic gDNA, FFPE DNA, cell free DNA, ChIP DNA, etc.

Workflow for library preparation

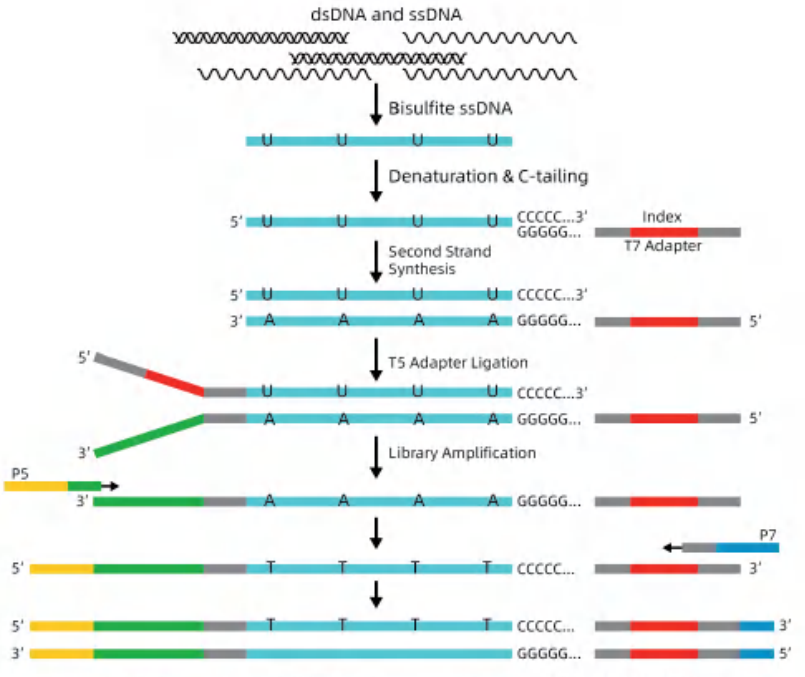
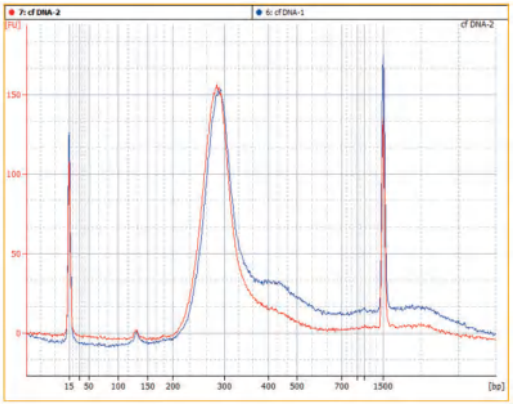


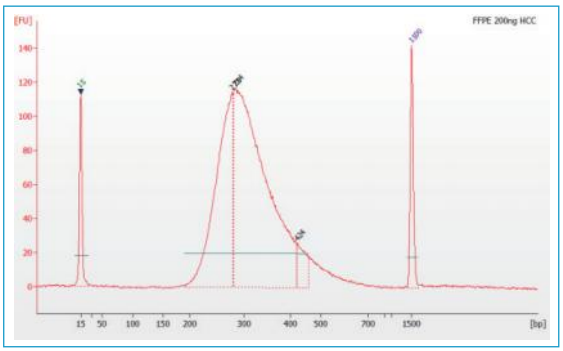
Fig 1. Scale Methyl-DNA Lib Prep Kit for illumina

cfDNA methylation library preparation



The Scale Methyl-DNA Lib Prep Kit was employed for the construction of a methylation library using 10 ng of cfDNA.The Bisulfite treatment was carried out using the ZYMO EZ DNA Methylation-Gold Kit. The number of library amplification cycles was set to 17, and 20L nuclease-free water was used for elution. The final library yields were 32/32.2 ng/μL, indicating robust performance with favorable library yield and peak characteristics.

FFPE DNA methylation library preparation



The Scale Methyl-DNA Lib Prep Kit was utilized for the construction of a methylation library using 200 ng of FFPE DNA. The Bisulfite treatment was performed using the ZYMO EZ DNA Methylation-Gold Kit.The number of library amplification cycles was set to 12, and 20L nuclease-free water was used for elution. The final library yield was 31.8ng/L,demonstrating favorable performance with both library yield and peak characteristics.

Tumor-associated Diagnosis-NGS Detection

Companion diagnosis is currently the most important application field of tumor NGS testing. Companion diagnostics are used to: determine which patients are most likely to benefit from a specific therapeutic product; determine which patients are likely to experience serious side effects from treatment; and monitor treatment response. Compared with PCR technology, which can only detect known mutations, NGS can capture capture both known and unknown targets.

DNA Library Preparation

- Rapid Series DNA Library Preparation Kit
- Scale Series Single-Stranded DNA Library Preparation Kit
- FS Series (Enzymatic Fragmentation) Library Preparation Kit

RNA Library Preparation

- mRNA general transcriptome library Preparation Kit
- mRNA Strand-Specific Transcriptome Library Preparation Kit
- Full-transcriptome library Preparation Kit
- Small RNA Library Preparation Kit
- Rapid mRNA Library Preparation Kit

DNA Library Preparation

High-throughput DNA sequencing technology is widely used in prenatal diagnosis, cancer research,genetic disease testing, microbial identification, crop genetics and breeding, and other basic research.Library preparation is a vital step in DNAhigh-throughput sequencing experiments, and a high-quality DNA library is the basis for successful sequencing. ABclonalprovides a comprehensive suite of DNA library preparation kits used on various samples such as FFPE DNA, cf/ct DNA, ChIP DNA, genomic DNA, and environmental microbial DNA.

Library Preparation Kit	Product Name	Cat.No.	Features
Rapid Series (Mechanical disruption)	Rapid Plus DNA Lib Prep Kit for Illumina V2	RK20255	Illumina
	Rapid Plus DNA Lib Prep Kit for MGI V2	RK20256	MGI
	Rapid Plus DNA Lib Prep Kit V2(No DDREs)	RK20271	Illumina or MGI,used for metagenomic
FS(Enzymatic fragmentation)	FS Pro DNA Lib Prep Kit V2	RK20275	Use for Illumina or MG, simple work flow
Scale ssDNA (Single-Stranded library Preparation)	Scale ssDNA-seq Lib Prep Kit for Illumina	RK20228	Suitable for micro-volume and difficult samples

Featured Citation

Title	Journal	Impact Factor	Product Cat.No.
Replication protein RPA2A regulates floral transition by cooperating with PRC2 in Arabidopsis	The New phytologist	10.32	RK20228
Primase promotes the competition between transcription and replication on the same template strand resulting in DNA damage-PMC	Nature communications	17.69	RK20228

Recommended

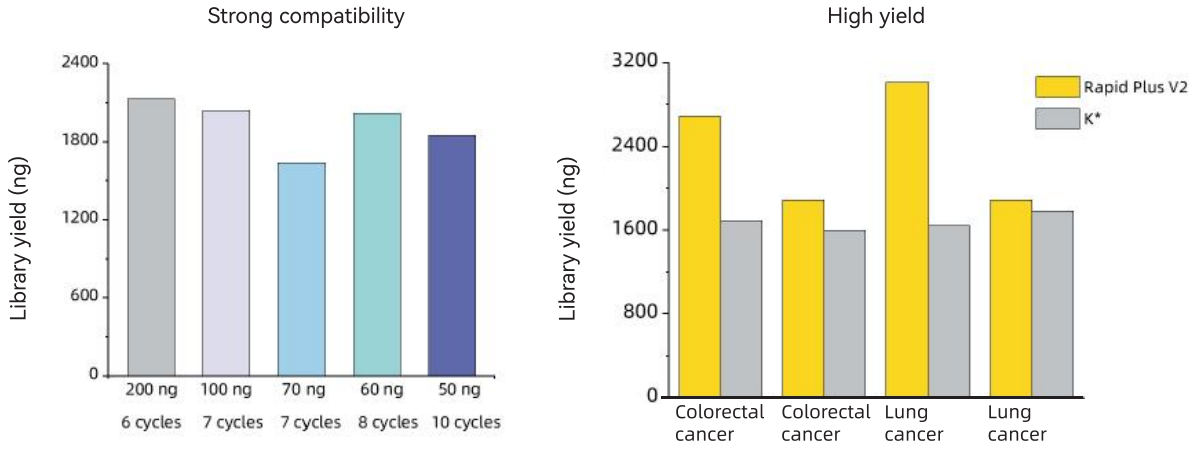
Summary Table for DNA Library Preparation kit

Category	Rapid Plus DNA Lib Prep Kit for Illumina /MGI V2	FS pro DNA Lib Prep Kit	Scale ssDNA-seq Lib Prep Kit for Illumina V2
Description	A wide range of initial amounts, rapid, high construction efficiency and superior performance.	Enzymatic fragmentation of DNA is employed to reduce dependence on fragmentation instruments, thereby enhancing library throughput and efficiency.	Minimizing the required amount of DNA for library construction with optimal library efficiency and performance.
Price	★★★★	★★★★	★★★★★
Construction duration	~4 hr (8 Samples)	~4 hr (8 Samples)	~5.5 hr (8 Samples)
Initial amount	1 ng-1 μg	100 pg-1 μg	10 pg-1 μg 1-100 ng*(BS converted)
Connecting efficiency	~60%	~60%	>90%
Features	A universal library construction approach covering cf/ctDNA, FFPE, ChIP DNA, tissue DNA, etc., supports whole genome sequencing (WGS), whole exome sequencing (WES), targeted sequencing, RNA sequencing, ChIP sequencing, and more.	A universal library construction approach is applicable for low-input library construction。	Ultra-low input DNA library construction is validated for CHIP-seq applications.

Rapid Plus DNA Lib Prep Kit for Illumina /MGI V2 (RK20255 & RK20256)

Product data

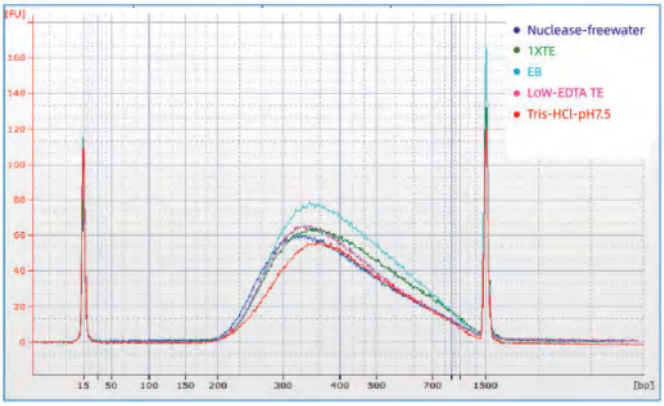
Rapid Plus DNA Lib Prep Kit V2 Library construction results for different types of samples



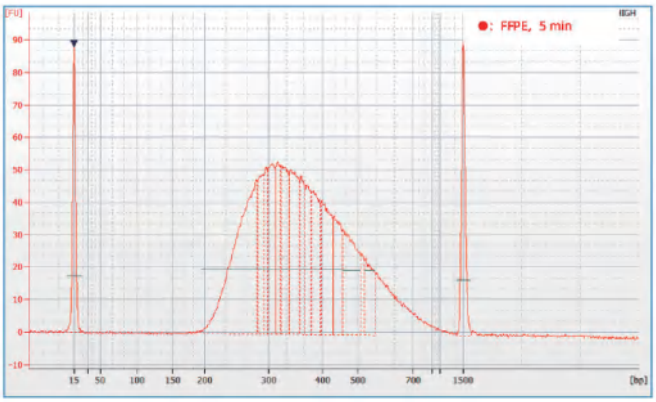
Rapid Plus DNA Lib Prep Kit V2 can meet the requirements for library preparation of different types of DNA samples, and the library yield is better than the competing products.

FS Pro DNA Lib Prep Kit V2 (RK20275)

Product Data



The DNA sample is NA12878 human genome DNA standard, and the input amount is 100 ng. Dissolved in 32 μ L Tris-HCl-pH 7.5, Nuclease-Free Water, 1X TE Buffer, EB (Elution Buffer), Low-EDTA TE Buffer, 32 ℃ fragmentation time 15 min. The constructed library uses Agilent DNA 1000 Chips for fragment size analysis.

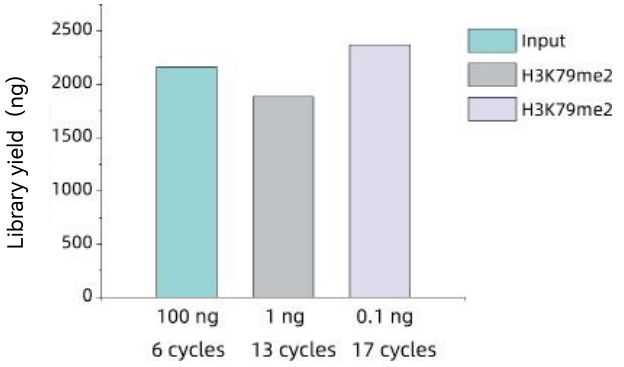


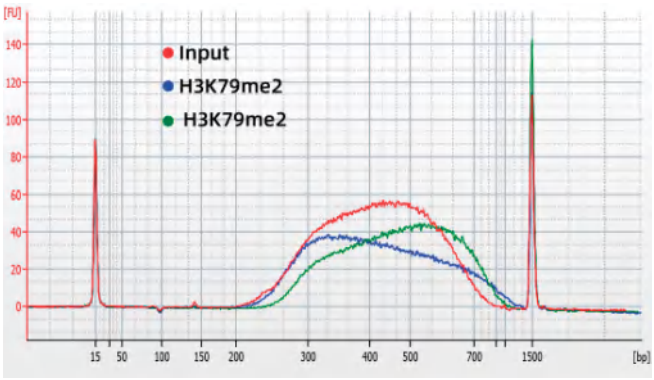
The RK20275 library construction kit was employed to construct a library from a 100 ng FFPE DNA sample. The RK20275 library construction kit was used to construct libraries for the samples respectively, and the fragmentation time was 5 minutes at 32° C. The library was finally used for fragment quality control using Agilent2100.

Scale ssDNA-seq Lib Prep Kit for Illumina V2 (RK20228)

Product Data

Scale ssDNA-seq Lib Prep Kit is suitable for ChIP-seq library preparation





Utilizing the Scale ssDNA-seq Lib Prep Kit for Illumina V2 (RK20228), sequencing libraries were constructed from ChIP DNA samples containing 1 ng and 0.1 ng. The ChIP-seq grade antibody TriMethyl-Histone H3-K79 Rabbit pAb A2369, produced by ABclonal, was employed. The resulting library had a total yield of approximately 2,000 ng. Following magnetic bead purification, the library exhibited a fragment range of 200-1,000 bp, with the main peak centered around 450-500 bp.

RNA Library Preparation

The transcriptome is a collection of all RNAs transcribed from a specific tissue or cell at a certain developmental stage orfunctional state,mainly including mRNA and non-coding RNA(non-coding RNA,ncRNA).Transcriptome sequencing (RNA-Seq)refers to the use of second-generation high-throughput sequencing technology for cDNA sequencing to comprehensively andquickly obtain almost all transcripts of a specific organ or tissue in a certain state.Transcriptome research is the basis andstarting point for the study of gene function and structure.Understanding the transcriptome is necessary for interpreting thefunctional elements of the genome and revealing the molecular composition of cells and tissues.It also plays an important rolein understanding the organism development and disease.

Recommended

Product Lists

Application	Product Name	Cat.No.	Description/Platform
Poly(A)RNA Capture	Poly(A) mRNA Capture Module	RK20340	Used for isolating poly(A)RNA from purified total RNA
rRNA Depletion Module	rRNA Depletion module (H/M/R)	RK20348	Suitable for human/rat/mouse total RNA and degraded RNA samples
Rapid RNA Library Preparation	RNA-seq Lib Prep Kit (with FS)	RK20308	Fragmentation enzyme digestion and RNA library preparation
Normal RNA Library Preparation	mRNA-seq Lib Prep Module for Illumina	RK20350	Illumina
Small RNA Library Preparation	Small RNA Lib Prep Kit for Illumina V3	RK20312	Illumina

Featured Citation

Title	Journal	Impact Factor	Product Cat.No.
INTAC endonuclease and phosphatase modules differentially regulate transcription by RNA polymerase II	Molecular Cell	16	RK20348
FAK-p38 signaling serves as a potential target for reverting matrix stiffness-modulated liver sinusoidal endothelial cell defenestration	Biomaterials	15.3	RK20350
Fusobacterium nucleatum outer membrane vesicles activate autophagy to promote oral cancer metastasis	Journal of advanced research	12.82	RK20350
Neurotoxicity of the Cu(OH)2 Nanopesticide through Perturbing Multiple Neurotransmitter Pathways in Developing Zebrafish	Environ Sci Technol	11.35	RK20350
Key enzyme in charge of ketone reabsorption of renal tubular SMCT1 may be a new target in diabetic kidney disease	Nephrol Dial Transplant	7.18	RK20350
Syringaresinol attenuates ulcerative colitis by improving intestinal epithelial barrier function and inhibiting inflammatory responses	Phytomedicine	6.65	RK20340

Recommended

NGS Product Lists

Category	Product Cat.No.	Product Name
Qubit Quantitation	RK30140	ABQubit dsDNA Quantitation Kit
	RK30141	ABQubit 1X dsDNA HS Assay Kit (Pre-Mixed)
Library Purification and magnetic beads Sorting	RK20257	AFTMag NGS DNA Clean Beads

Biomarker Antibodies

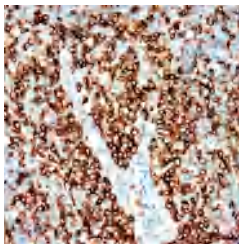
CD20 Rabbit mAb(A4893)——Citation(5)

PathoQ Validated

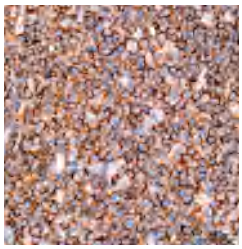
Application: IHC-P, IF/ICC, FC, WB

Reactivity: H

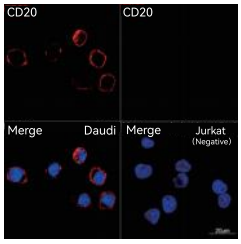
CD20 antigen is a B cell differentiation antigen that is only expressed in pre-B cells and is not expressed in hematopoietic stem cells, plasma cells and other normal tissues. It is commonly utilized in the diagnosis of B-cell malignancies.



Human tonsil



Human anaplastic large cell lymphoma



Jurkat cells

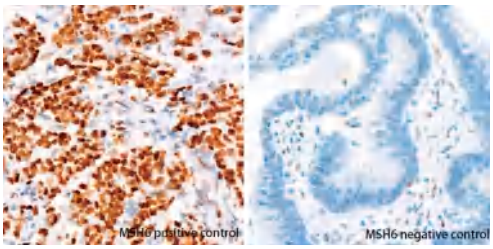
[KO Validated] MSH6 Rabbit mAb （A22652）

PathoQ Validated

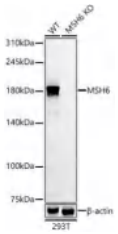
Application: IHC-P, IF/ICC, WB

Reactivity: H, M, R

MSH6 is a mismatch repair gene. It is associated with autosomal dominant hereditary diseases, called hereditary nonpolyposis colorectal cancer, and can also be seen in patients with sporadic colorectal cancer. MSH6 is often used in combination with MLH1, MSH2, and PMS2 and can be used to screen patients for this condition.



Human colon cancer

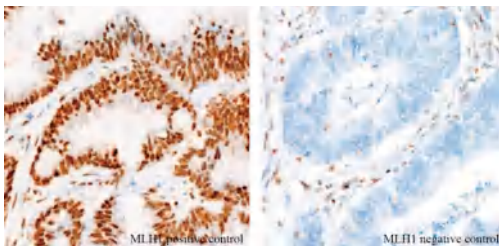


[KO Validated] MLH1 Rabbit mAb （A4858）

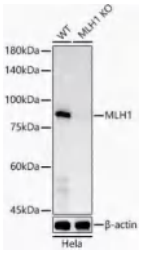
PathoQ Validated

Application: IHC-P, WB　　Reactivity: H, M

MLH1 is a mismatch repair protein involved in maintaining the integrity of genetic information, similar to MSH2, MSH6 and PMS2. MLH1 gene mutations are associated with colon cancer, breast cancer, etc., and MLH1 expression is found to be lost in acute lymphoblastic leukemia, endometrial cancer, gastric cancer, and ovarian cancer.



Human colon cancer



Recommended

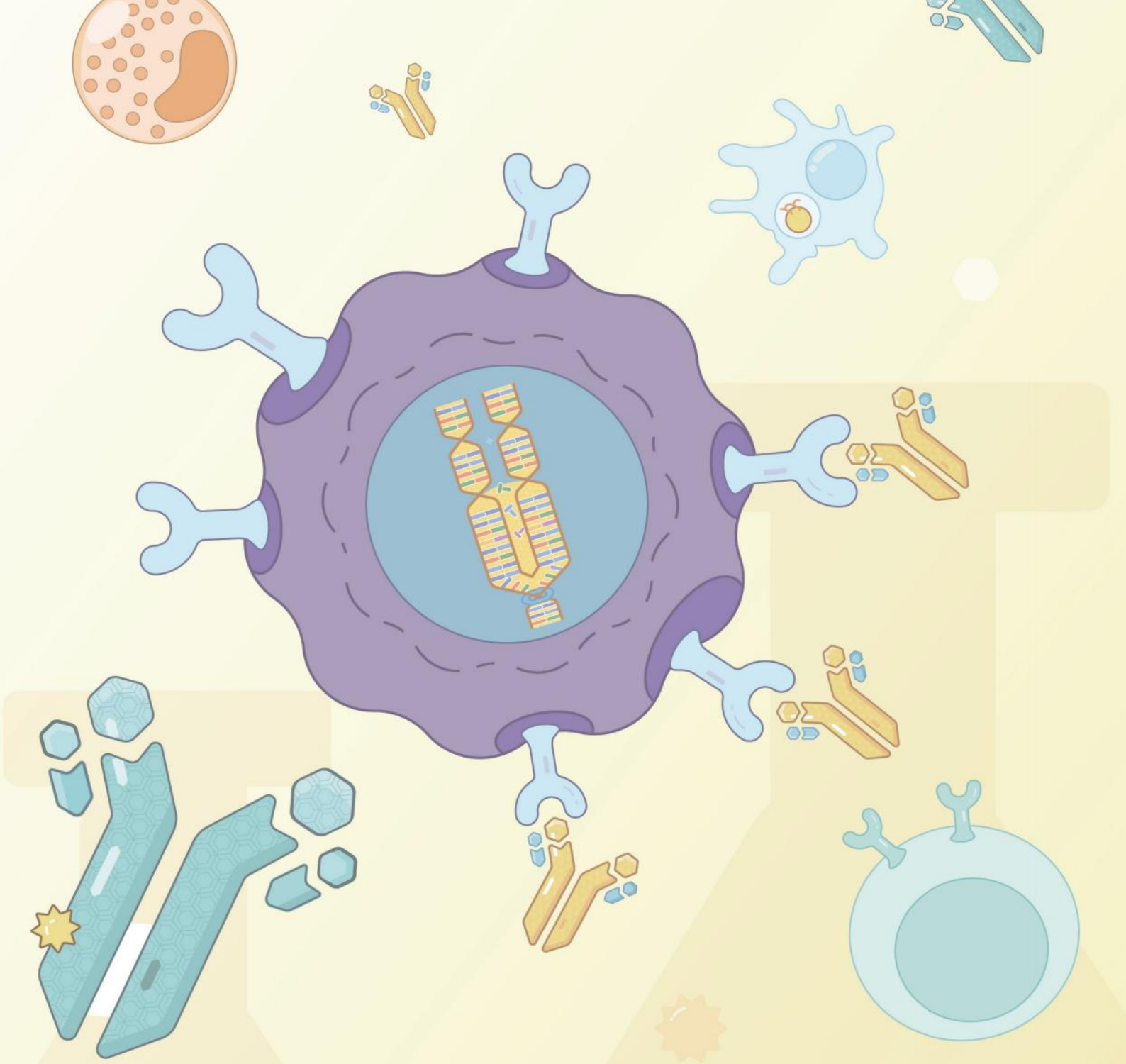
Research Tools for Tumor Markers

Category	Target	Cat.No.	Product Name	Application	Reactivity
Prostate cancer	Androgen Receptor	A19611	Androgen Receptor Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	PTEN	A19104	[KO Validated] PTEN Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
Lung cancer	CgA	A9576	Chromogranin A Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	CK5	A11396	Cytokeratin 5 (CK5) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	CK20	A19041	Cytokeratin 20 (CK20) Rabbit mAb	IHC-P, WB	H, R
Colorectal cancer	CD34	A22197	CD34 Rabbit mAb	IHC-P, WB	H
	CK20	A19041	Cytokeratin 20 (CK20) Rabbit mAb	IHC-P, WB	H, R
	CDX2	A19030	[KO Validated] CDX2 Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	β-Catenin	A19657	[KO Validated] β-Catenin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	MLH1	A4858	[KO Validated] MLH1 Rabbit mAb	IHC-P, WB	H, M
	MSH2	A22177	[KO Validated] MSH2 Rabbit mAb	IHC-P, WB	H, M, R
	MSH6	A22652	[KO Validated] MSH6 Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
Breast cancer	AR	A19611	Androgen Receptor Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	β-Catenin	A19657	[KO Validated] β-Catenin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R
	CD34	A22197	CD34 Rabbit mAb	IHC-P, WB	H
	E-Cadherin	A22850	E-Cadherin Rabbit mAb	IHC-P, IF/ICC, WB	H, M
	HER2	A21248	HER2/ErbB2 Rabbit mAb	IHC-P, IF/ICC, WB	H
	PR	A19697	Progesterone Receptor Rabbit mAb	IHC-P, WB	H
Lymphoma	CD4	A19018	CD4 Rabbit mAb	IHC-P, FC, WB	H
	CD10	A22179	CD10/MME Rabbit mAb	IHC-P, WB	H
	CD20	A4893	CD20 Rabbit mAb	IHC-P, IF/ICC, FC, WB	H
	CD30	A21230	CD30 Rabbit mAb	IHC-P, IF/ICC, FC	H
Pan-cancer markers	CK7	A4357	Cytokeratin 7 (CK7) Rabbit mAb	IHC-P, IF/ICC, WB	H, M, R
	CK19	A22427	Cytokeratin 19 (CK19) Rabbit mAb	IHC-P	H, M, R
	Ki67	A20018	Ki67 Rabbit mAb	IHC-P, IF/ICC	H, M, R
	MUC1	A19081	MUC1 Rabbit mAb	IHC-P, WB	H, M, R
	p53	A22449	[KO Validated] p53 Rabbit mAb	IHC-P, WB	H
	PCNA	A12427	PCNA Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R, MK
	PD-L1	A19135	PD-L1/CD274 Rabbit mAb	IHC-P, WB	H
	Vimentin	A19607	[KO Validated] Vimentin Rabbit mAb	IHC-P, IF/ICC, IP, WB	H, M, R

PolymAb™ : a mixture of monoclonal antibodies

Featured Citations

Title	Journal	Impact Factor	Product Cat.No.
PD-L1 methylation restricts PD-L1/PD-1 interactions to control cancer immune surveillance	Science advances	13.6	PCNA Rabbit mAb (A12427)
Ferroptosis is critical for phthalates driving the blood-testis barrier dysfunction via targeting transferrin receptor	Redox Biol	11.4	Androgen Receptor Rabbit mAb (A19611)
GOLPH3/CKAP4 promotes metastasis and tumorigenicity by enhancing the secretion of exosomal WNT3A in non-small-cell lung cancer	Cell Death Dis	9.0	MUC1 Rabbit mAb (A19081)



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