Affinity
research together

Tumor Research

- Highly cited
- Bulk stock and fast shipping
- High Affinity and Specificity

COMMITTED TO LIFE SCIENCE RESEARCH

HOT RESEARCH SELECTION ANTIBODIES

UB universal® BIOTECHNOLOGY PRIVATE LIMITED

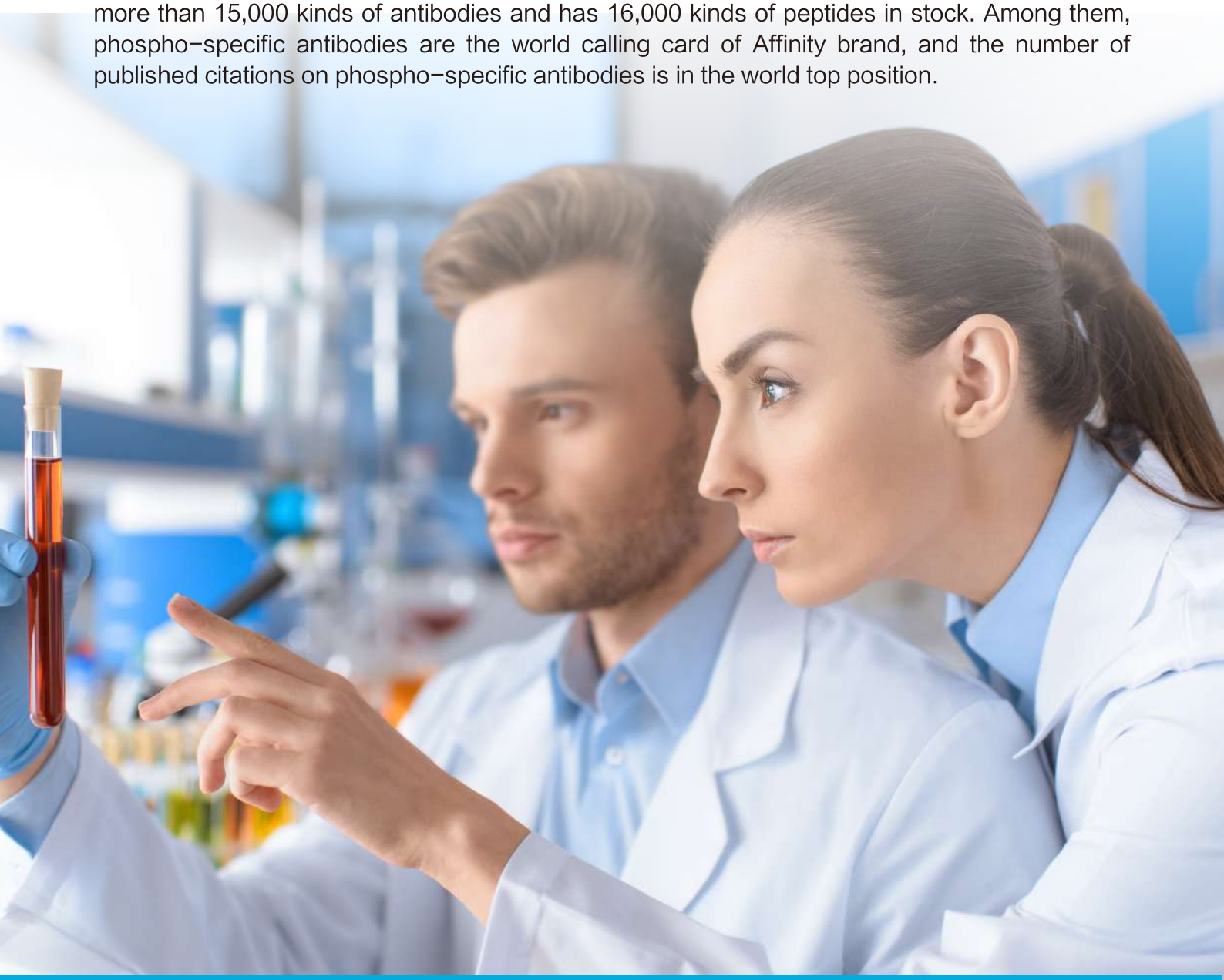
Universal Biotechnology pvt. ltd.
www.unibiotech.in
info@unibiotech.in

FOREWORD

AFFINITY BIOSCIENCES GROUP LTD is the R&D and production center of Affinity Biosciences (Affinity) brand in China. At present, the company has built a modern comprehensive laboratory, aseptic operation room, SPF animal room, and is equipped with advanced flow cytometer, laser confocal, digital scanning of pathological sections and other experimental instruments. Antibody sales channels cover the whole world, and Affinity has become an antibody service provider that integrates R&D, production, testing and sales.

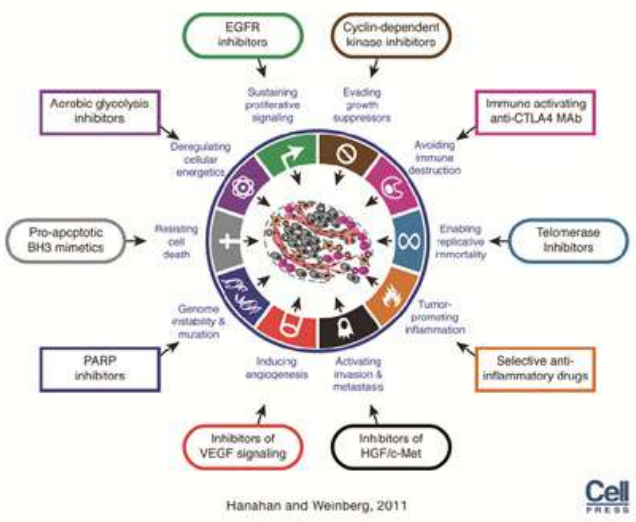
Since 2018, Affinity has consecutively won the 2019 and 2020 CiteAb Award and has become the first company to ever win CiteAb Awards 'Antibody supplier to watch' a second year in a row.

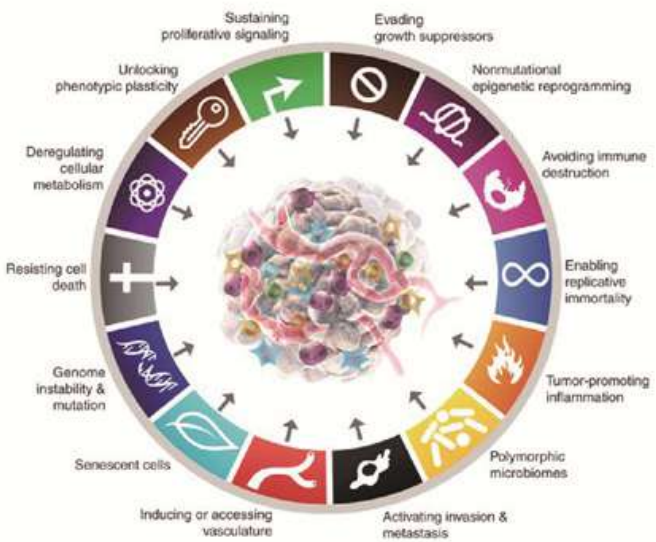
In July 2022, Affinity announced the successful development of the AFfirm technology platform, which is more than 10 times more efficient than the traditional mouse monoclonal antibody platform. Since its inception, Affinity has been committed to providing the highest quality antibody products and services to researchers around the world. Affinity has developed more than 15,000 kinds of antibodies and has 16,000 kinds of peptides in stock. Among them, phospho-specific antibodies are the world calling card of Affinity brand, and the number of published citations on phospho-specific antibodies is in the world top position.



Tumor Research

Tumor cells are not invasive foreigners, they are derived from the normal cells that make up the various organs of the human body, but unlike tumor cells, they have ten characteristics that distinguish them from normal cells and enable them to be invincible and unconquerable in the human body, which are called the 10 characteristics of tumors by Professors Robert A. Weinberg and Douglas Hanahan, i.e., 1. Self-sufficiency in growth signals:2. Insensitivity to anti-growth signals:3. Resistance to cell death:4. Unlimited replicative capacity:5. Persistent angiogenesis:6. Tissue invasion and metastasis:7. Avoidance of immune destruction:8. Tumor-promoting inflammation:9. Abnormalities in cellular energetics:10. Genomic instability and mutation.January 2022 Prof. Douglas Hanahan builds on the previous 10 characteristics Professor Douglas Hanahan added 4 more characteristics to tumor cells and published them in Cancer Discovery (IF: 39.397), which are: 1. Unlock phenotypic plasticity that can disrupt cellular differentiation. 2. Senescent cells, which are cells that are not in a state of inflammation. 3. Cellular senescence is considered to be a protective mechanism to maintain tissue homeostasis; however, increasing evidence suggests that in some cases, senescent cells may promote tumorigenesis and development in a variety of ways.3, Non-mutational epigenetic reprogramming (non-mutational epigenetic reprogramming), epigenetic, that is, DNA 3, non-mutational epigenetic reprogramming (non-mutational epigenetic reprogramming), epigenetic, that is, the DNA sequence has not changed, but the gene function has undergone heritable changes. 4, polvmorphic microbiome (polvmorphic microbiome), exists in the colon, other mucous membranes and their associated organs, or the tumor's own microbiome. The first two are "emerging features" and the last two are "given features". The study of the fourteen characteristics of neoplastic cells encompasses numerous key targets and pathways that form the basis of tumor research and biologically targeted therapies.

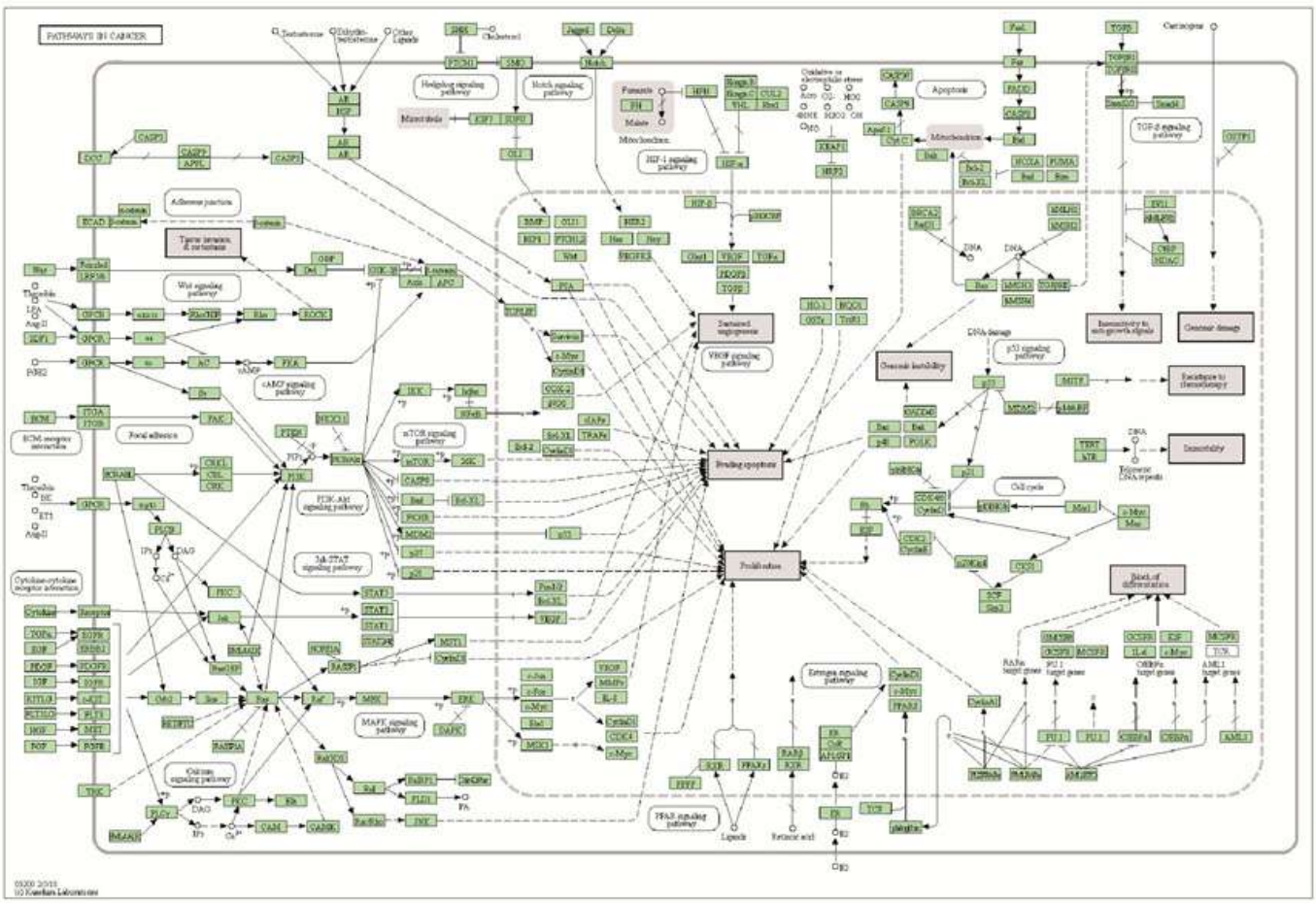




Tumor Cells Maintain Self-Proliferation

The most prominent feature of malignant tumors is abnormal cell proliferation, and the close relationship between the regulation of cell proliferation and tumorigenesis has been recognized. Tumor proliferation is associated with multiple signaling pathways, three of which are important: PI3K-Akt, MAPK/Erk, and mTOR. The PI3K-Akt pathway is an intracellular signaling pathway that responds to extracellular signals to promote metabolism, proliferation, cell survival, growth, and angiogenesis. This process is mediated by serine or threonine phosphorylation of a number of downstream substrates, and the key genes involved are phosphatidylinositol 3-kinase (PI3K) and AKT, which is why the pathway is directly named after these two genes. The PI3K/AKT pathway is closely related to human tumorigenesis and development, and is chosen for many studies of tumor mechanisms.PI3K/AKT pathway It can regulate the proliferation and survival of tumor cells, and plays an important role in tumor cell migration, adhesion, and angiogenesis.

Mitogen-activated protein kinases (MAPKs) are important signal transduction systems in eukaryotic cells that mediate extracellular signals to intracellular responses. Ser/Thr protein kinases, which are widely expressed in cells, are involved in a variety of cellular physiological activities such as cell growth, development, differentiation, apoptosis, etc., and are the most important areas of tumorigenesis, and are the major players in tumorigenesis. MAPKs are evolutionarily conserved serine-threonine kinases that can be classified into four subfamilies: extracellular-signal-regulated protein kinase (ERK), p38 mitogen-activated protein kinase (p38 MAPK), C-Jun amino-terminal kinase (JNK), and extracellular-signal-regulated kinase 5 (ERK5), which represent the four classical MAPK pathways, and the aberrant function of any of these four key factors can lead to severe tumor diseases. mTOR (mammalian target protein of rapamycin) is a protein kinase. mTOR belongs to an important eukaryotic signal whose stability affects cytokine expression in T cells, participates in immunosuppression, influences transcription and protein synthesis, and regulates cell growth, apoptosis, and autophagy, etc. On the other hand, mTOR has been identified as a new target for tumor therapy, and it plays an important role in the regulation of diseases of motility, metabolism, and neurology.



• Hot-selling antibodies recommended

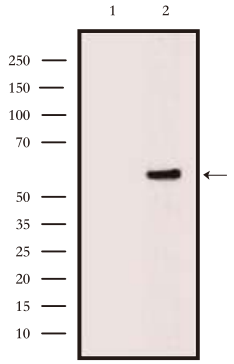
Phospho-AKT1/2/3 (Ser473) Antibody

Catalog: AF0016(PubMed 274)

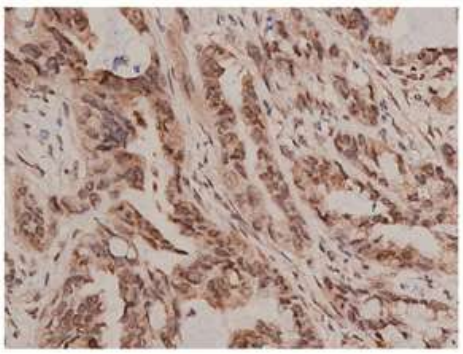
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat, Monkey

Prediction: Pig, Bovine, Horse, Sheep, Rabbit, Dog, Chicken



Western blot analysis of extracts from VERO cells(H2O2 treatment), using Phospho-pan-AKT1/2/3 (Ser473) Antibody. The lane on the left was treated with blocking peptide.



AF0016 at 1/200 staining human lung cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.

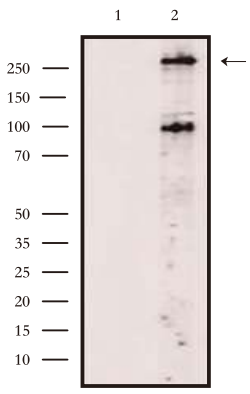
Phospho-mTOR (Ser2448) Antibody

Catalog: AF3308(PubMed 94)

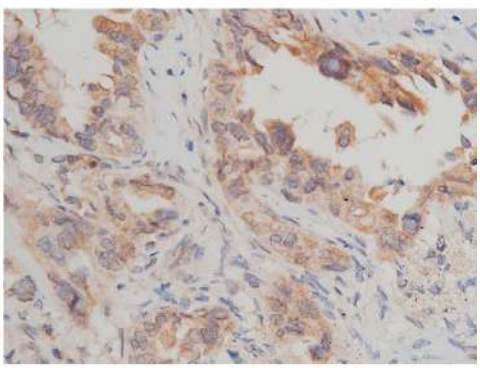
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat, Fish

Prediction: Pig, Bovine, Horse, Sheep, Rabbit, Dog, Chicken



Western blot analysis of extracts from LPS treated HepG2 cells, using Phospho-mTOR (Ser2448) Antibody. The lane on the left was treated with blocking peptide.



AF3308 at 1/50 staining human lung cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.

• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF1017	AcetyL-NF-kappaB p65(Lys310)Ab	Human,Mouse,Rat	WB,IHC,IF/ICC	♦♦
AF6423	AMPK alpha Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6361	AMPK alpha Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6008	ATF4 Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6139	Bcl-2 Ab	Human, Mouse, Rat, Chinese Mitten Crab	WB,IHC,IF/ICC	♦♦♦♦♦
AF0769	Bcl-2 Ab	Human	WB,IHCJF/ICC	♦♦
DF6387	BDNF Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6093	Bim Ab	Human.Mouse, Rat	WB	♦♦
AF6348	Caspase 9 Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6102	CDK4 Ab	Human,Mouse, Rat	WB,HC	♦♦♦
AF5240	Cleaved-Caspase 9(Asp353)Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF0358	c-Myc Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF7001	Collagen I Ab	Human,Mouse, Rat,Bovine	WB,IHC,IF/ICC	♦♦♦♦
AF0134	Collagen I Ab	Human,Mouse,Rat	WB,IHC,IF/ICC	♦♦
AF0135	Collagen II Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6188	CREB Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF0931	Cyclin D1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6386	Cyclin D1 Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0144	Cyclin E1 Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6043	EGFR Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0096	eNOS Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF0155	ERK1/2 Ab	Human,Mouse,Rat,Pig, Zebrafsh,Bovine, Horse,Sheep,Dog,Monkey,Fish	WB,IHC,IF/ICC,IP	♦♦♦♦
AF6240	ERK1/2 Ab	Human, Mouse, Rat	WB	♦♦
AF6397	FAK Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0157	Fas Ligand Ab	Human,Mouse	WB,IHC,IF/ICC	♦♦
DF6038	FGF2 Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5335	Fibronectin Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5016	GSK3 beta Ab	Human,Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦♦
DF6096	IGF1 Ab	Human,Mouse, Rat	WB,IHC	♦♦
AF6012	IKK alpha Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6014	IKK alpha/beta Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6009	IKK-beta Ab	Human,Mouse, Rat,Monkey	WB,IHC,IF/ICC	♦♦♦
DF6087	IL6 Ab	Human,Mouse,Rat	WB,IHC,IF/ICC	♦♦♦♦
AF6099	Insulin Receptor beta Ab	Human,Mouse, Rat,Monkey	WB	♦♦
AF5379	Integrin beta 1 Ab	Human,Mouse,Rat	WB,IHC,IF/ICC	♦♦
AF6273	IRS1 Ab	Human,Mouse, Rat,Monkey	WB,IHC,IF/ICC	♦♦
AF5012	JAK1 Ab	Human,Mouse, Rat,Monkey	WB,IHC,IF/ICC	♦♦
AF6022	JAK2 Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6385	MEK1/2 Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6308	mTOR Ab	Human,Mouse,Rat, Fish	WB,IHC,IF/ICC	♦♦♦♦
AF5006	NF-kB p65 Ab	Human,Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
AF0874	NF-kB p65 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6061	NGF Ab	Human,Mouse,Rat	WB,IHC	♦♦
AF0227	Osteopontin Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6290	p21 Cip1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦♦

Cat#	Des#	Reactivity	Application	Cited
AF6324	p27 Kip1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF0879	p53 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF6226	p70 56 Kinase Ab	Human, Mouse,Rat	WB,IHC,IF/ICC	♦♦♦
AF0832	P-AKT1(Thr308)Ab	Human, Mouse,Rat	WB,IHC,IF/ICC	♦♦
AF3423	P-AMPK alpha(Thr172)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF6261	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦
AF6259	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF7208	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Pig	WB,IF/ICC	♦♦
AF3189	P-CREB (Ser133) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦♦
AF3247	P-eNOS(Ser1177) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF1015	P-ERK1/2(Thr202/Tyr204) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦
AF1014	P-ERK1/2(Tyr204) Ab	Human, Mouse, Rat, Bovine	WB,IHC	♦♦
AF3398	P-FAK(Tyr397) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF2016	P-GSK3 beta (Ser9) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦
AF5112	PI3 kinase P110 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6241	PI3K p85 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6242	PI3K p85/p55 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF3013	P-IKK alpha/ beta (Ser180/Ser181)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3010	P-IKK beta(Tyr199)Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF3099	P-Insulin Receptor beta (Tyr1361)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3272	P-IRS1(Ser307)Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF2012	P-JAK1(Tyr1022/Tyr1023)[Tyr1034/Tyr1035]Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3024	P-JAK2(Tyr931)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6197	PKC-pan Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8035	P-MEK1/2(Ser218+Ser222/Ser222+Ser226)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF3308	P-mTOR(Ser2448)Ab	Human, Mouse, Rat, Fish	WB,IHC	♦♦♦♦
AF3309	P-mTOR(Ser2481)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3310	P-mTOR(Thr2446)Ab	Human, Mouse, Rat	WB	♦♦
AF3387	P-NF-kB p65(Ser276)Ab	Human, Mouse, Rat	WB,IHC,IF/ICCJIP	♦♦
AF2006	P-NF-kB p65(Ser536)Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦♦
AF3075	P-p53(Ser15)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3228	P-p70 S6 Kinase(Thr389/Thr412)Ab	Human, Mouse, Rat, Pig	WB,IHC,IF/ICC	♦♦♦
AF0016	P-pan-AKT1/2/3(Ser473)Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
AF0908	P-pan-AKT1/2/3(Ser473)Ab	Human, Mouse, Rat, Bovine	WB,IHC,IF/ICC	♦♦
AF3262	P-pan-AKT1/2/3(Thr308)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF3242	P-PI3K p85(Tyr458)/p55(Tyr199)Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF3241	P-PI3K p85 alpha(Tyr607)Ab	Human, Mouse, Rat, Pig	WB,IHC,IF/ICC	♦♦♦♦
DF6506	ProLactin/PRL Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF6351	PTEN Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF3461	P-Trk B(Tyr706)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF4387	P-ULK1(Ser757)Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF6352	RhoA Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF0263	Thrombin Receptor Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF7002	TLR2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF7017	TLR4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦

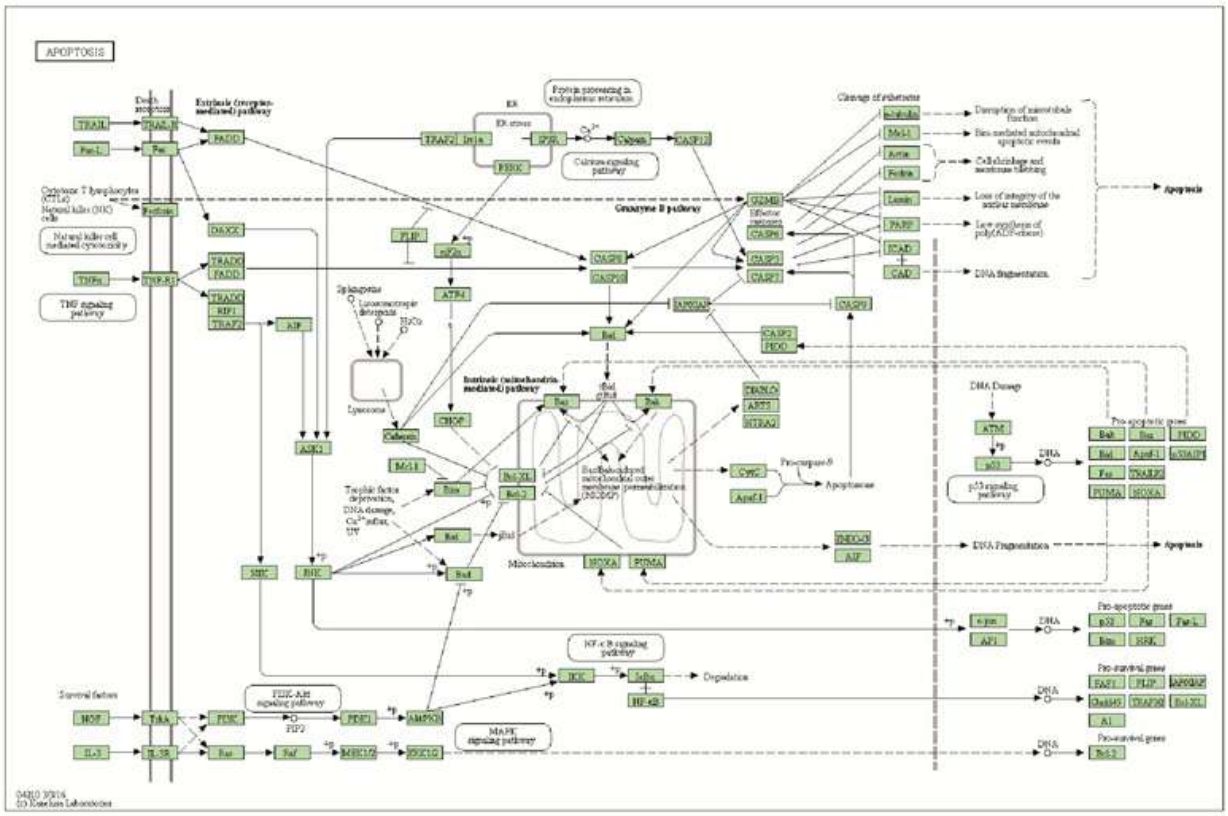
Cat#	Des#	Reactivity	Application	Cited
AF7014	TNF alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF0282	TNF Receptor I Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6461	Trk B Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF7588	ULK1 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5131	VEGFA Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF6204	VEGFR1 Ab	Human, Mouse, Rat	WB,IF/ICC,IHC-P,IHC-F	♦♦
AF6281	VEGFR2 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF5315	Wnt1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6113	WNT3A Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6856	WntSa Ab	Human, Mouse, Rat	WB,IHC	♦♦

Tumor Cells Resist Cell Death

Normally, abnormal cells can eliminate infected or damaged cells through various cell death pathways to maintain healthy growth and development of the body. Tumor cells, however, do not follow this rule, and resistance to cell death is an ability that almost all types of tumor cells possess. Studying the different pathways by which cell death can occur has been of great interest in tumor research.

• Apoptosis

Apoptosis plays an important role in tumorigenesis, tumor progression and the development of drug resistance in tumors. Apoptosis is a highly regulated form of cell death. It is a genetic program that eliminates damaged or few remaining cells by activating cysteine-specific cysteine proteases (caspases). The morphological manifestations of apoptosis are blistering of cell membranes, cell shrinkage, and the formation of apoptotic vesicles. Apoptosis can usually proceed through three different pathways, namely the exogenous pathway, the intrinsic pathway, and the endoplasmic reticulum stress-induced pathway. The exogenous pathway involves stimulation of members of the tumor necrosis factor (TNF) receptor subfamily by their specific ligands, such as TNF-alpha, FasL, or TRAIL, such as TNFRI, CD95/Fas, or TRAILR (death receptor) located on the cell surface. The intrinsic pathway is primarily activated by non-receptor stimuli such as DNA damage, endoplasmic reticulum stress, metabolic stress, UV radiation, or growth factor deprivation. The central event of the intrinsic pathway is the increase in mitochondrial outer membrane permeability (MOMP), which leads to cytochrome C release. These two pathways converge at effector caspases (e.g., caspase-3 and caspase-7). The third major pathway is initiated by cytotoxic granules (e.g., perforin and granzyme B) released by CTL (cytotoxic T cells) and NK (natural killer) cells. Similar to cysteine residues, granzyme B cleaves substrates after aspartic acid residues, suggesting that the protease has the ability to directly activate members of the cysteine family. The balance between pro- and anti-apoptotic signals ultimately determines whether a cell will undergo apoptosis, survive, or proliferate.TNF family ligands activate anti-apoptotic or cell survival signals as well as apoptotic signals.NGF and interleukin-3 promote survival, proliferation, and differentiation of neurons and hematopoietic cells, respectively. As mentioned above, the absence of these growth factors leads to cell death.



• Hot–selling antibodies recommended

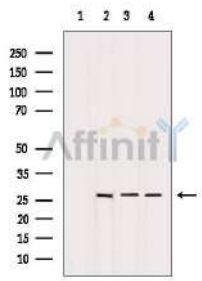
Bcl–2 Antibody (PubMed 307)

Catalog: AF6139

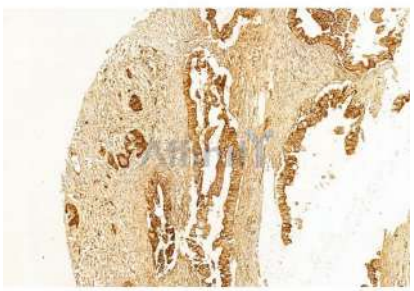
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat, Chinese Mitten Crab

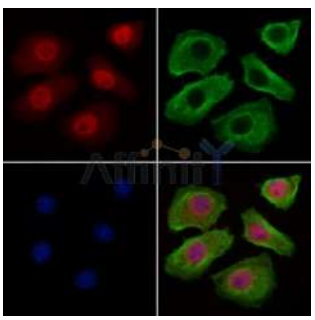
Prediction: Horse, Dog



Western blot analysis of extracts from various samples, using BCL–2 Antibody. Lane 1: 293 cells treated with the blocking peptide. Lane 2: 293 cells; Lane 3: mouse brain tissue; Lane 4: HuvEc cells.



AF6139 at 1/100 staining Human pancreatic cancer by IHC–P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti–Rabbit antibody was used as the secondary antibody.



AF6139 staining Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X–100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF6139 1:200) and mouse anti–beta tubulin Ab(T0023 1:200) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti–rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti–mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

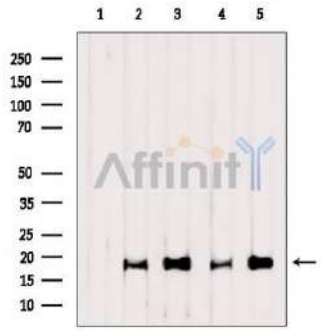
Cleaved-Caspase 3(Asp175), p17Antibody (PubMed 304)

Catalog: AF7022

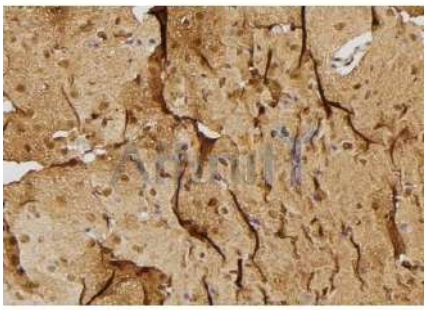
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat, Bovine

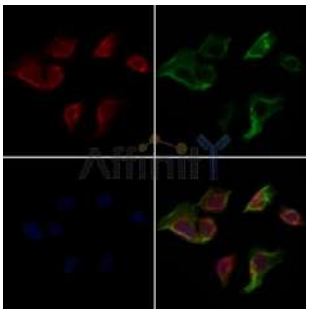
Prediction: Pig, Zebrafish, Bovine, Horse, Sheep, Rabbit, Dog, Xenopus



Western blot analysis of extracts from various samples, using Cleaved Caspase 3 Antibody. Lane 1: Hela treated with blocking peptide; Lane 2: Hela (etoposide treated, 25uM 5h); Lane 3: MCF7 (etoposide treated, 25uM 5h); Lane 4: Mouse heart; Lane 5: Mouse spleen.



AF7022 at 1/100 staining Mouse brain tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



Af7022 staining Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF7022 1:200) and mouse anti-beta tubulin Ab(T0023 1:200) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF1017	Acetyl-NF-kappaB p65(Lys310)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6477	ASK1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6008	ATF4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0120	Bax Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦
AF6139	Bdl-2 Ab	Human, Mouse, Rat, Chinese Mitten Crab	WB,IHC,IF/ICC	♦♦♦♦♦
DF6093	Bim Ab	Human, Mouse, Rat	WB	♦♦
AF6311	Caspase 3 Ab	Human, Mouse, Rat, Bovine	WB,IHC,IF/ICC	♦♦♦♦
AF6442	Caspase 8 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF6348	Caspase 9 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5199	caspase12 Ab	Human, Rat	WB,IHC	♦♦
AF0132	c-Fos Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6090	c-Jun Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF7022	Cleaved-Caspase 3(Asp175), p17 Ab	Human, Mouse, Rat, Bovine	WB,IHC,IF/ICC	♦♦♦♦♦
AF4023	Cleaved-Caspase 7(Asp198) Ab	Human, Mouse	WB	♦♦
AF5267	Cleaved-Caspase 8(Asp384), p18 Ab	Human, Rat	WB,IHC,IF/ICC	♦♦
AF5240	Cleaved-Caspase 9(Asp353) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF7023	Cleaved-PARP(Asp214) Ab	Human, Mouse, Rat	WB	♦♦♦
AF0146	Cytochrome C Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦

Cat#	Des#	Reactivity	Application	Cited
DF6025	DDIT3/CHOP Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6087	eIF2 alpha Ab	Human, Mouse, Rat, Pig	WB,IHC,IF/ICC	♦♦♦
AF0155	ERK1/2 Ab	Human,Mouse,Rat,Pig,Zebrafish,Bovine,Horse,Sheep,Dog,Monkey,Fish	WB,IHC,IF/ICC,IP	♦♦♦♦
AF5342	FAS Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF0157	Fas Ligand Ab	Human, Mouse	WB,IHC,IF/ICC	♦♦
AF5002	IKB alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6012	IKK alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6014	IKK alpha/ beta Ab	Human,Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6143	IKK gamma Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6009	IKK-beta Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
DF7709	IRE1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6318	JNK1/2/3 Ab	Human, Mouse, Rat, Pig	WB,IF/ICC	♦♦♦
AF6385	MEK1/2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5006	NF-kB p65 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
DF6061	NGF Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0879	p53 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF0832	P-AKT1 (Thr308) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6261	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦
DF7198	PARP1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3477	P-ASK1 (Ser966) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3095	P-c-Jun (Ser73) Ab	Human, Mouse, Rat, Zebrafish	WB,IHC,IF/ICC	♦♦
AF3087	P-eIF2 alpha (Ser51) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5304	PERK Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF1015	P-ERK1/2 (Thr202/Tyr204) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦
AF1014	P-ERK1/2 (Tyr204) Ab	Human, Mouse, Rat, Bovine	WB,IHC	♦♦
AF5112	PI3 kinase P110 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6241	PI3K p85 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6242	PI3K p85/p55 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF2002	P-IKB alpha (Ser32/Ser36) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦
AF3013	P-IKK alpha/ beta (Ser180/Ser181) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3010	P-IKK beta (Tyr199) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF7150	P-IRE1 (Ser724) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF3318	P-JNK1/2/3 (Thr183+Tyr185) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF8035	PMEK1/2(Ser218+5er222/Ser222+Ser226) Ab	Human, Mouse,Rat	WB,IHC,IF/ICC	♦♦♦
AF3387	P-NF-kB p65 (Ser276) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF2006	P-NF-kB p65 (Ser536) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦♦
AF3075	P-p53 (Ser15) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF0016	P-pan-AKT1/2/3 (Ser473) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
AF3262	P-pan-AKT1/2/3 (Thr308) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF7576	P-PERK (Thr982) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF3242	P-PI3K p85 (Tyr458)/p55 (Tyr199) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF3241	P-PI3K p85 alpha (Tyr607) Ab	Human, Mouse, Rat, Pig	WB,IHC,IF/ICC	♦♦♦♦
AF6017	Survivin Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7014	TNF alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF0282	TNF Receptor I Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6279	TRADD Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦

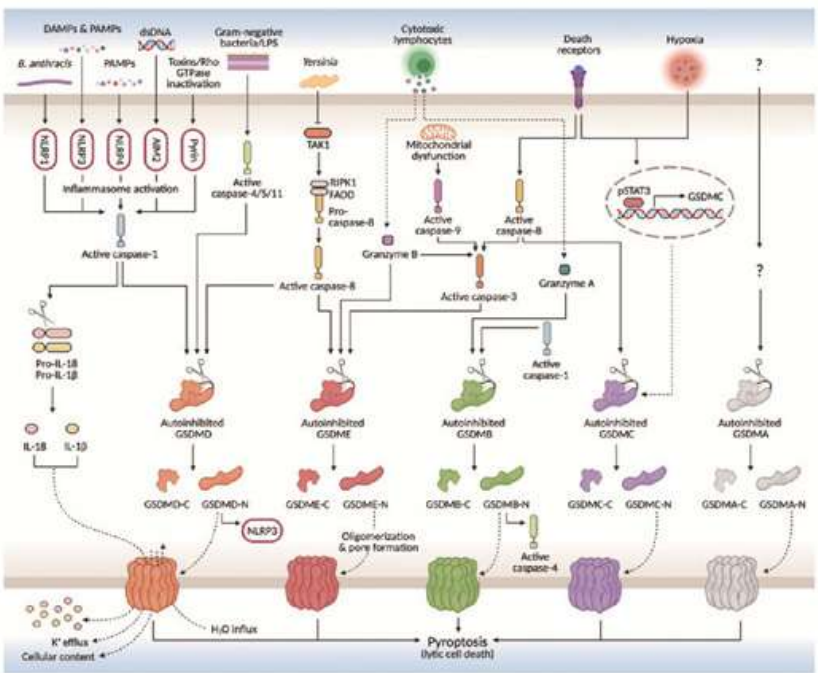
• Pyroptosis

Pyroptosis is an inflammatory programmed cell death pathway that is distinct from apoptosis. Two major pathways and several alternative pathways have been elucidated. In the major pathway, pyroptosis is induced by GSDMD and involves either inflammatory caspase-1 (classical pathway) or caspase-4/5 (non-classical pathway). Among the alternative pathways, the one that has received the most attention is GSDME-induced cellular pyroptosis via caspase-3. Cellular pyroptosis plays an important protective role in the catabolism of pathogens, while it is recognized as one of the complicating factors contributing to several human diseases, such as cardiovascular diseases, neurodegenerative diseases and AIDS. Metabolic disorders such as diabetes mellitus may also promote cellular pyroptosis through chronic inflammation and the production of insulin-disrupting cytokines. In cancer, the role of cellular death appears to be a double-edged sword. On the one hand, cellular pyroptosis can rapidly lead to tumor regression, and on the other hand, it can promote the development of the tumor microenvironment. Therefore, cancer cells may inhibit or stimulate cellular pyroptosis to support their progression. A deeper understanding of the molecular pathways of cellular pyroptosis and clarification of the complex relationships between cellular pyroptosis and cancer will help us to fully exploit cellular pyroptosis and apply it to existing or new anti-cancer strategies.

In contrast to the standard inflammasome pathway, the non-classical inflammasome pathway does not depend on caspase-1, but rather on caspase-4 and caspase-5 and, in mice, caspase-11. Activation of these cysteine proteases occurs by direct binding of LPS to the corresponding procysteine proteases, bypassing the body sensors of the inflammasome. Although these cysteine proteases do not directly activate 1L-1B and IL-18, they activate the NLRP3 inflammasome and upregulate caspase-1 by triggering cellular juxtaposition via GSDMD cleavage leading to potassium efflux.

Alternative pathways

Studies have shown that in some cases, such as chemotherapy or targeted cancer therapy, caspase-3 can induce apoptosis to pyroptosis pathways. Although caspase-3 is primarily associated with apoptotic execution and morphological changes, it can mediate cellular pyroptosis by cleaving GSDME, which also leads to the formation of GSDME-N pores and altered membrane permeability. Activation of caspase-3 rapidly induces cellular colocalization when GSDME levels are high, but apoptosis is induced when GSDME levels are low. However, this concept requires further validation. In addition, there are several other alternative cellular pyroptosis pathways, including cleavage of GSDMD by caspase-8; cleavage of GSDME by caspase-8 or granzyme B (GzmB); cleavage of GSDMB by caspase-1 or granzyme A (GzmA); cleavage of GSDMC by caspase-8 activated by programmed death ligand 1 (PD-L1) hypoxia and pSTAT3 transcriptional upregulation and other unknown mechanisms of GSDMA pore formation.



Loveless, R.,Bloomquist, R.& Teng, Y.Pyroptosis at the forefront of anticancer immunity. J Exp Clin Cancer Res 40，264 (2021).

• Hot-selling antibodies recommended

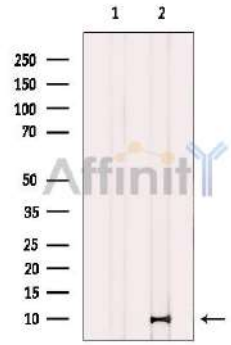
Cleaved-Caspase 1(Ala317), p10 Antibody (PubMed 67)

Catalog: AF4022

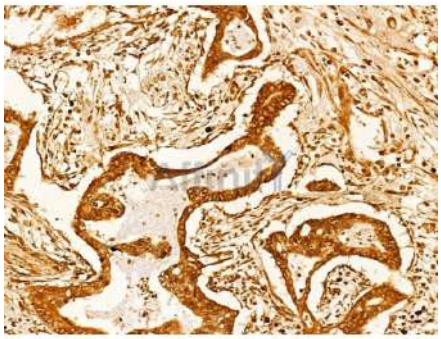
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

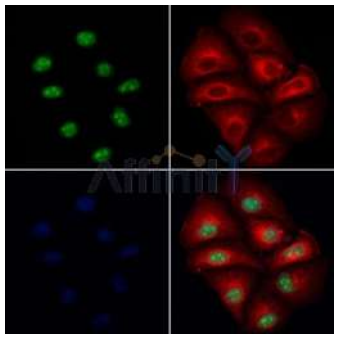
Prediction: Pig, Bovine, Horse, Rabbit, Dog



Western blot analysis of extracts from THP-1 cells lysates (treated with TPA/LPS), using Cleaved Caspase-1 (Ala317) /P10 Antibody. The lane on the left was treated with blocking peptide.



AF4022 at 1/100 staining Human normal tissues adjacent to esophageal cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



AF4022 staining Hela cells by IF/ICC.The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF4022 1:200) and mouse anti-beta tubulin Ab(T0023 1:200) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-mouse IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-rabbit IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

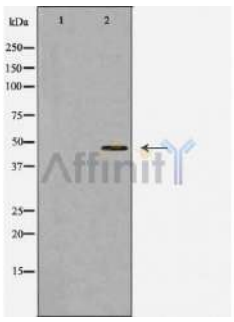
Caspase 1 Antibody (PubMed 86)

Catalog: AF5418

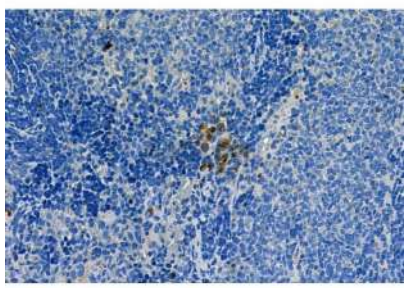
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

Prediction: Pig, Bovine, Rabbit



Western blot analysis of Caspase 1 expression in 293 cells.The lane on the left was treated with the antigen-specific peptide.



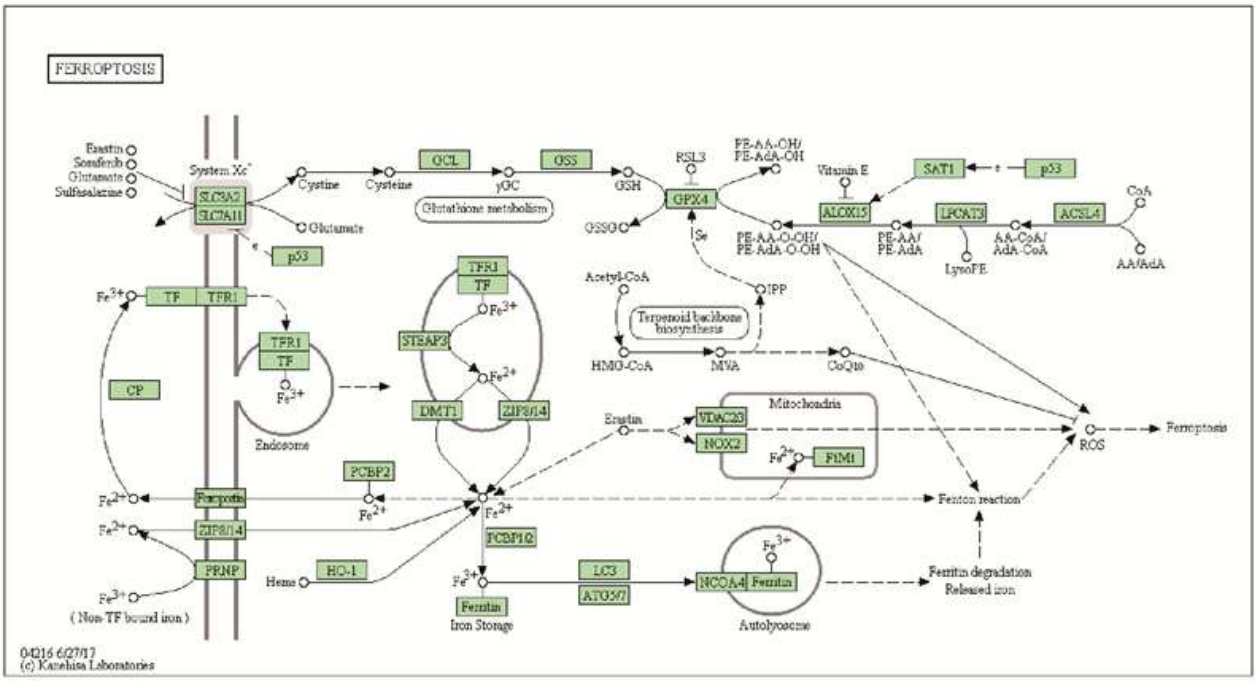
AF5418 at 1/100 staining Rat spleen tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
DF7540	ASC2 Antibody	Human,Mouse,Rat	WB,IHC,ELISA(peptide)	♦♦
AF5418	Caspase 1 Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦♦
AF5130	Caspase 4 Antibody	Human,Mouse,Rat	WB,IHC,ELISA(peptide)	♦
DF7609	Caspase 4/11 Antibody	Human,Mouse,Rat,Monkey	WB,IHC,IF/ICC,ELISA(peptide)	♦♦
DF7609	Caspase 4/11 Antibody	Human,Mouse,Rat,Monkey	WB,IHC,IF/ICC,ELISA(peptide)	♦♦
DF7664	Caspase 5 Antibody	Humark,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦
AF4022	Cleaved-Caspase 1 (Ala317),p10 Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC	♦♦♦
AF4005	Cleaved-Caspase 1 (Asp296), p20 Antibody	Human,Mouse,Rat	WB,IHC	♦♦♦
AF5373	Cleaved-Caspase 4 (Gln81),p20 Antibody	Human	WB,IHC,ELISA(peptide)	♦♦
AF4006	Cleaved-IL-1 beta (Asp116) Antibody	Human,Mouse,Rat,Zebrafish	WB,IHC,IF/ICC	♦♦♦
DF9705	DFNAS/GSDME Antibody	Human,Mouse	WB,IHC,IF/ICC,ELISA(peptide)	♦
DF7012	Granzyme B Antibody	Human	WB,IHC,ELISA(peptide)	♦♦
AF4012	GSDMD Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC	♦♦♦
DF12275	GSDMD Antibody	Human	WB,IHC,IF/ICC	♦♦
DF6893	IL1 alpha Antibody	Human,Mouse,Rat	WB,IHC,ELISA(peptide)	♦♦
AF5103	IL1 beta Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦♦♦♦
DF6252	IL18 Antibody	Human,Mouse,Rat	WB,IHC,ELISA(peptide)	♦♦♦
DF6998	IL8 Antibody	Human,Mouse,Rat	WB,IHC,ELISA(peptide)	♦♦
DF7438	NLRP3 Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦♦♦
AF3294	Phospho-STAT3 (Ser727) Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,IP,ELISA(peptide)	♦♦
AF7300	Phospho-STAT3 (Tyr539) Antibody	Human,Mouse,Rat	WB,ELISA(peptide)	♦
AF3293	Phospho-STAT3 (Tyr705) Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,IP,ELISA(peptide)	♦♦♦
DF6304	PYCARD Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦♦
DF13708	Pyrin Antibody	Human	WB,ELISA(peptide)	♦
AF6294	STAT3 Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦♦

• Ferroptosis

The term ferroptosis was coined in 2012 to describe iron-dependent regulatory cell death caused by unrestrained lipid peroxidation and subsequent plasma membrane rupture. Ferroptosis can be induced by either exogenous or endogenous pathways. The exogenous pathway is initiated by inhibition of cell membrane transporter proteins such as the cystine/glutamate transporter proteins (also known as system xc) or activation of the iron transporter proteins, transferrin and lactotransferrin. The endogenous pathway is activated by blocking intracellular antioxidant enzymes (e.g. glutathione peroxidase GPX4). During tumorigenesis, iron death has both tumor-promoting and tumor-suppressing effects that depend on the release of damage-associated molecular patterns (DAMPs) in the tumor microenvironment and the activation of immune responses triggered by iron death injury. Since iron death impairs the efficacy of chemotherapy, radiation therapy and immunotherapy, the combination of drugs targeting iron death signaling may improve the efficacy of these treatments.



• Hot-selling antibodies recommended

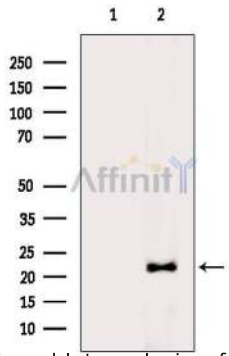
GPX4 Antibody （PubMed 43)

Catalog: DF6701

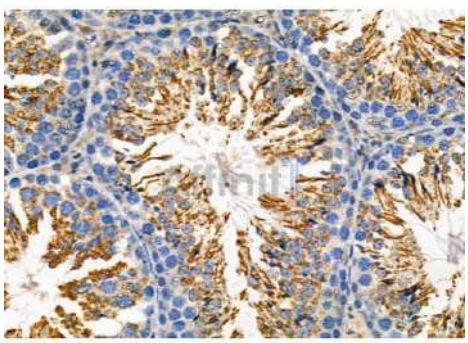
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

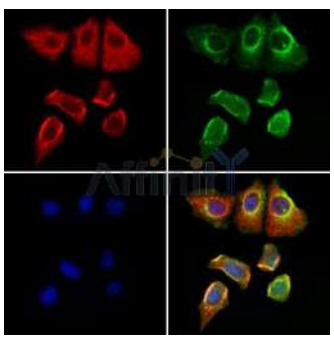
Prediction: Pig, Bovine, Chicken



Western blot analysis of extracts from 293 cells(heat-shock treatment), using GPX4 Antibody. The lane on the left was treated with blocking peptide.



DF6701 at 1/100 staining Mouse testis tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



DF6701 staining Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(DF6701 1:200) and mouse anti-beta tubulin Ab(T0023 1:200) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

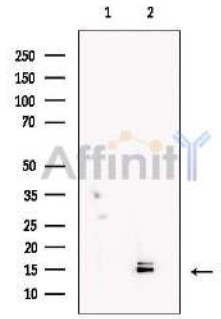
LC3A/B Antibody (PubMed 84)

Catalog: AF5402

Application: WB IHC IF/ICC

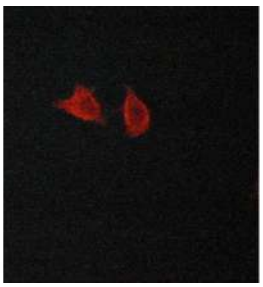
Reactivity: Human, Mouse, Rat

Prediction: Pig, Zebrafish, Bovine, Sheep, Dog, Xenopus



Western blot analysis of extracts from PC12(LPS treatment), using lc3 A/B Antibody. The lane on the left was treated with blocking peptide.

AF5402 at 1/100 staining Human lung cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



AF5402 staining lovo cells by ICC/IF. Cells were fixed with PFA and permeabilized in 0.1% saponin prior to blocking in 10% serum for 45 minutes at 37° C. The primary antibody was diluted 1/400 and incubated with the sample for 1 hour at 37° C. A Alexa Fluor 594 conjugated goat polyclonal to rabbit IgG (H+L), diluted 1/600 was used as secondary antibody.

Cat#	Des#	Reactivity	Application	Cited
AF3744	Acetyl-P53 (Lys382) Ab	Human, Mouse, Rat	ELISA(peptide)	♦♦
DF12141	ACSL4/FACL4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6010	APGSL/ATG5 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF6130	ATG7 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF6278	Ferritin Heavy Chain Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6604	Ferritin Light Chain Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF8550	GCLC Ab	Human, Mouse, Rat, Pig	WB,IHC,IF/ICC	♦♦
DF7268	GCLM Ab	Human, Mouse, Rat, Pig	WB,IHC	♦♦
DF6701	GPX4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6214	GSS Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF5393	HO-1 Ab	Human, Mouse, Rat	WB,IHC	♦♦♦
AF4007	LC3A Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5402	LC3A/B Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF4650	LC3B Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF4255	NCOA4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6520	NOX2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0879	p53 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
BF8013	p53 mAb	Human, Mouse	WB,IF/ICC	♦♦
AF3075	P-p53 (Ser15) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3073	P-p53 (Ser20) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3078	P-p53 (Ser366) Ab	Human, Mouse	WB,IHC,IF/ICC	♦
AF3074	P-p53 (Ser392) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
DF13561	SLC40A1 Ab	Human, Mouse, Rat	WB,IHC	♦
AF5343	Transferrin Receptor Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF12509	xCT Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦

• Different kinds of ferroptosis comparison

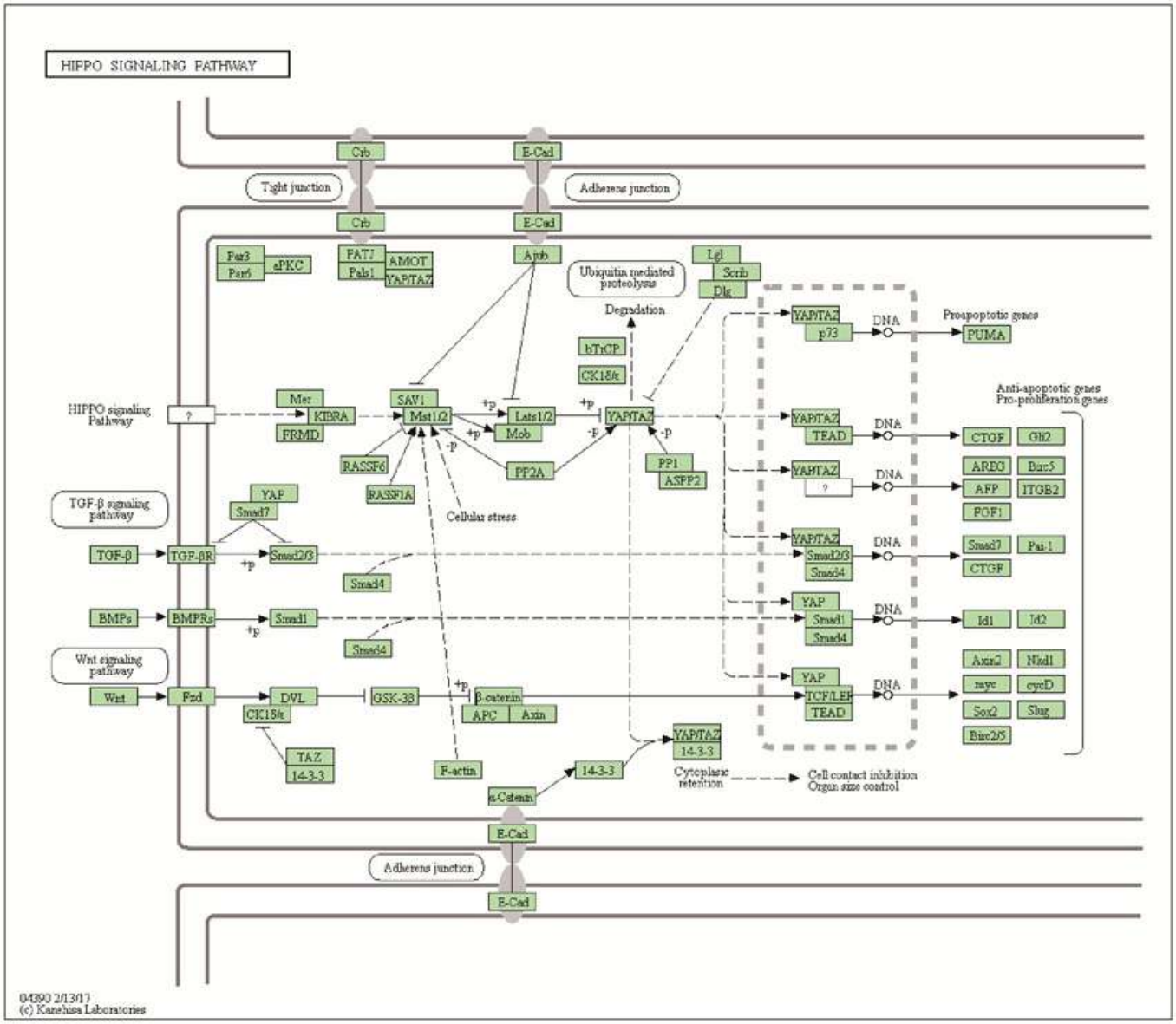
	Mutagen	Key factors	Features	Cellular release	Immunological characteristics
Apoptosis (PCD)	TNF-α, FasL. TRAIL, hypoxia, irradiation. Heat shock	Bcl-2 protein family, P53. Caspase-2/3/6/7/8/9/10. HSPs	Plasma membrane vesicles, cell volume decreases decrease in cell volume, nucleus lysis, chromatinsolidification	In some cases: DAMPS (e.g., dsDNA, HMGB1, ATP, calreticulin)	It is primarily anti-inflammatory. Part of the situation involves pro-inflammatory production of DAMPs release
Pyroptosis (PCD)	DAMPs,PAMPs, micro- bioinfection	GSDM protein family. Caspase-1/3/4/5/8/11, inflammatory vesicles	Plasma membrane rupture and pore formation, fine cytoplasmic swelling, chromatin condensation	Cellular inclusions, DAMPs (e.g., IL-18, IL-1β, dsDNA, ATP, HMGB1)	pro-inflammatory
Necroptosis (PCD)	TNF-α,TRAIL, Fas ligand, micro Bioinfection	MLKL, RIPK1/3(Necrosome), TRADD	Plasma membrane rupture, cytoplasm and cell Swelling of organelles, moderate chromatin condensation	Cellular inclusions, DAMPs (e.g., IL-1α, IL-33, IL-6HSPs)	Primarily pro-inflammatory. Anti-inflammatory in some cases
Ferroptosis (PCD)	Iron accumulation and lipid peroxidation sources of ROS	GPX4, System XC-,GSH, ACSL4	No vesicles or ruptures of the plasma membrane, small nematocyte outer membrane ruptured, nucleus normal	DAMPs (e.g., HMGB1 DAMPs (e.g., HMGB1, pro-inflammatory dsDNA) lipid oxidization products (e.g., 4-HNE, LTB4) e.g., 4-HNE, LTB4).	pro-inflammatory
Necrosis (Accidental)	Microbial infections, toxins Trauma, ischemia, heat stress	n/a	Plasma membrane rupture, cytoplasmic and cellular organelles swell and DNA is randomly degraded	Cellular inclusions, DAMPs (e.g., IL-1α, IL-33, dsDNA, ATP, HMGB1)	pro-inflammatory

Tumor cells have unlimited replication potential

Tumor cells are able to survive under unfavorable conditions by undergoing uninhibited cell division. This phenomenon involves multiple signaling pathways, two of which are critical: the Hippo pathway and the Wnt pathway.

The Hippo pathway is also known as the Salvadori-Warts/Hipp (SWH) pathway. A large body of experimental evidence suggests that it plays an important role in organ size regulation, cancer development, tissue regeneration, and stem cell function.Abnormal activation of YAP (Yes-associated protein), the major effector molecule of the Hippo pathway, has been closely associated with the development of many types of tumors.A cascade of kinases at the core of the Hippo pathway, including STK3/4 (MST1/2), LATS1/2, YAP, and TAZ.

The Wnt/B-coupled protein signaling pathway is another evolutionarily conserved mechanism that contributes to the ability of cancer to replicate indefinitely. This pathway regulates the pluripotency of stem cells and determines cell fate during development. There is also evidence that Wnt signaling promotes the aggregation of cancer-associated transcriptional regulatory molecules in the nucleus, such as the TAZ. Key regulatory molecules include:B-linked protein is a key downstream effector molecule in the Wnt signaling pathway. It is involved in two important biological processes in vertebrates: early embryonic development and tumorigenesis. LEF1 and TCF bind to Wnt-responsive elements to provide anchoring sites for B-associates, which translocate to the nucleus when Wnt signaling is activated to promote target gene transcription.


HIPPO SIGNALING PATHWAY
Crb
E-Cad
Tight junction
Adherens junction
Crb
E-Cad
Fat3
Pat6
aPKC
FAT1
Pals1
AMOT
YAP/TAZ
Ajub
Ubiquitin mediated proteolysis
Degradation
Lgl
Scrib
Dlg
bTrCP
CK1δ/ε
YAP/TAZ
p73
DNA
Proapoptotic genes
PUMA
Anti-apoptotic genes
Pro-proliferation genes
HIPPO signaling Pathway
?
Mer
KIBRA
FRMD
SAV1
Mst1/2
Lats1/2
Mob
YAP/TAZ
YAP/TAZ
TEAD
DNA
CTGF
Gli2
RASSF6
RASSF1A
PP2A
PP1
ASPP2
YAP/TAZ
?
DNA
AREG
Bmp5
AFP
ITGB2
FGF1
Cellular stress
TGF-β signaling pathway
YAP
Smad7
TGF-β
TGF-βR
Smad2/3
Smad4
YAP/TAZ
Smad2/3
Smad4
DNA
Smad7
Pai-1
CTGF
BMPs
BMPRs
Smad1
Smad4
YAP
Smad1
Smad4
DNA
Id1
Id2
Wnt signaling pathway
Wnt
Fzd
DVL
CK1δ/ε
GSK-3β
β-catenin
APC
Axin
YAP
TCF/LEF
TEAD
DNA
Axin2
Nkd1
myc
cycD
Sox2
Slug
Bmp2/5
TAZ
14-3-3
F-actin
α-Catenin
14-3-3
YAP/TAZ
14-3-3
Cytoplasic retention
Cell contact inhibition
Organ size control
E-Cad
Adherens junction
E-Cad
04390 2/13/17
(c) Kanehisa Laboratories

• Hot-selling antibodies recommended

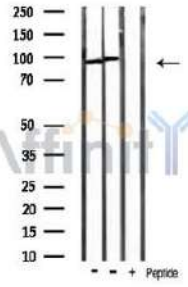
beta Catenin Antibody (PubMed 44)

Catalog: AF6266

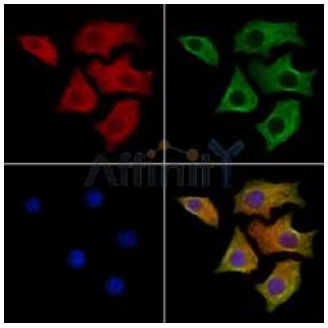
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

Prediction: Pig, Zebrafish, Bovine, Horse, Sheep, Rabbit, Dog, Chicken, Xenopus



Western blot analysis of extracts from various sample,using Catenin-β antibody. Lane1:rat spleen tissue lysates, Lane2:rat liver tissue lysates, Lane3:rat liver tissue treated with blocking peptide.



AF6266 staining HepG2 cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF6266) and mouse anti-beta tubulin Ab(T0023) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

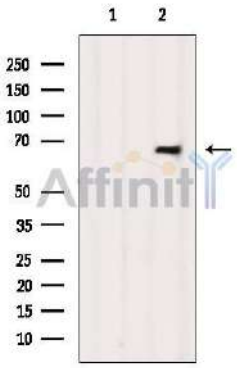
YAP Antibody (PubMed 4)

Catalog: AF6328

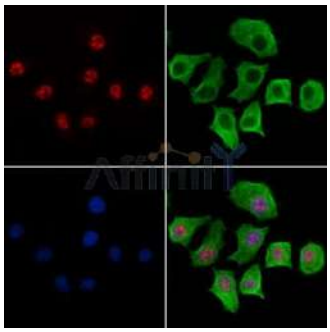
Application: WB IF/ICC

Reactivity: Human, Mouse, Rat, Monkey

Prediction: Pig, Zebrafish, Horse, Sheep, Rabbit, Chicken, Xenopus



Western blot analysis of extracts from Mouse brain, using YAP Antibody. The lane on the left was treated with blocking peptide.



AF6328 staining HepG2 cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF6328) and mouse anti-beta tubulin Ab(T0023) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF5134	AFP Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0547	APC Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6266	beta Catenin Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6794	beta Catenin Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5163	BMP2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5196	BMP6 Ab	Human	WB,IHC	♦♦
AF5383	BMPR2 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF2907	CaMKII Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6493	CaMKII alpha/delta Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6090	C-Jun Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF0358	c-Myc Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF7091	CTGF Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0931	Cyclin D1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6386	Cyclin D1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5410	Cyclin D2 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF0131	E-cadherin Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
DF3096	FRA1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5016	GSK3 beta Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦♦
AF7814	GSK3 beta Ab	Human, Mouse, Rat	WB	♦♦
BF0695	GSK3B Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,ELISA,FACS	♦♦
AF6318	JNK1/2/3 Ab	Human, Mouse, Rat, Pig	WB,IF/ICC	♦♦♦
AF6319	JNK1/2/3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5360	KAT3B/p300 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0674	KAT3B / p300 Ab	Human	WB,IHC	♦♦
AF7669	LATS1 Ab	Human, Mouse	WB	♦♦
DF7570	LEF1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF2995	LRP6 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0218	MMP7 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF7189	NFAT1 Ab	Human, Mouse, Rat	WB	♦♦
DF6446	NFAT2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0879	p53 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF0865	p53 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6073	p53 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
BF8013	p53 mAb	Human, Mouse	WB,IF/ICC	♦♦
AF5176	PAI 1 Ab	Human	WB,IHC,IF/ICC	♦♦
DF2989	P-beta Catenin (Ser33/Ser37/Thr41) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3266	P-beta Catenin (Ser37) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7378	P-CaMKII (Ser235) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3493	P-CaMKII alpha/delta (Thr286) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3434	P-CaMKII beta/ gamma/ delta (Thr287) Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF3090	P-c-Jun (Ser243) Ab	Human, Mouse, Rat	WB,IHC,IP	♦♦
AF3089	P-c-Jun (Ser63) Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF3095	P-c-Jun (Ser73) Ab	Human, Mouse, Rat, Zebrafish	WB,IHC,IF/ICC	♦♦
AF3091	P-c-Jun (Thr239) Ab	Human, Mouse, Rat	WB,IHC,IP	♦♦
AF3054	P-c-Myc (Ser62) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦

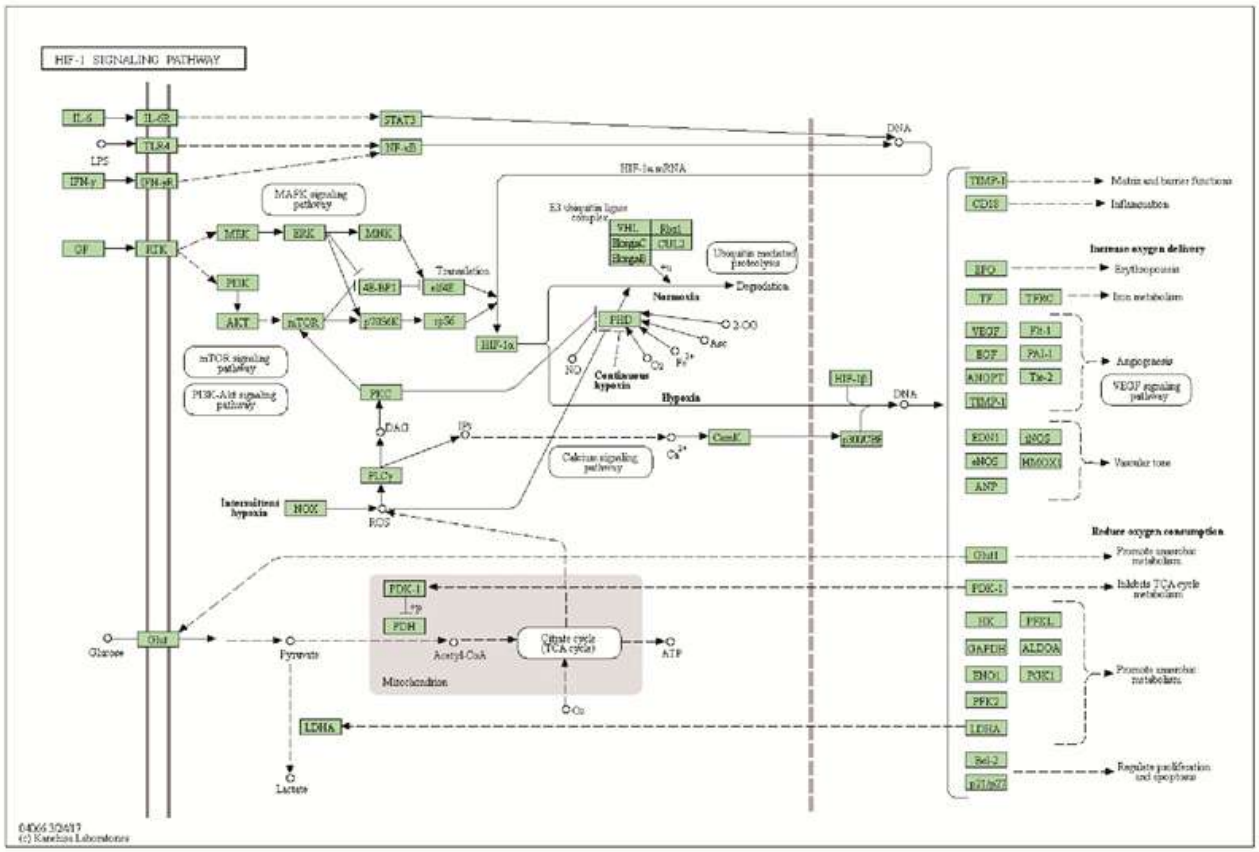
Cat#	Des#	Reactivity	Application	Cited
AF3055	P-c-Myc (Thr58) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3234	P-Cyclin D1 (Ser90) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3335	P-GSK3 alpha/ beta (Tyr216/Tyr279) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF2016	P-GSK3 beta (Ser9) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦
AF3319	P-JNK1/2/3 (Thr183) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3318	P-JNK1/2/3 (Thr183+Tyr185) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦
AF3320	P-JNK1/2/3(Tyr185)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5450	PKA alpha CAT Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7746	PKA alpha/beta/gamma CAT Ab	Human, Mouse, Rat, Monkey	WB,IHC	♦♦
AF6196	PKC alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6096	PKC beta 1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF6197	PKC-pan Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8163	P-LATS1/2 (Ser909/Ser872) Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF8344	P-LRP6 (Ser1490) Ab	Human, Mouse	WB	♦♦
AF8343	P-LRP6 (Thr1479) Ab	Human, Mouse	WB,IHC	♦♦
AF2367	P-MST1 (Thr183/Thr180) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8293	P-NFAT2 (Ser172) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8012	P-NFAT2 (Ser294) Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF3075	P-p53 (Ser15) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3073	P-p53 (Ser20) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7246	P-PKA alpha/beta/gamma CAT (Thr198) Ab	Human, Mouse, Rat	WB.IHC	♦♦
AF8396	P-PKC alpha (Ser657) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3196	P-PKC alpha (Thr638) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8028	P-PKC beta 1 (Ser661) Ab	Human, Mouse	WB,IHC	♦♦
AF8347	P-PKC gamma (Thr514) Ab	Human, Rat	WB	♦♦
AF3197	P-PKC-pan (Thr497) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3352	P-RhoA (Ser188) Ab	Human, Mouse, Rat, Monkey	WB	♦♦
AF5283	PSD95 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF8313	P-Smad1/5/9 (Ser463+Ser465) Ab	Human, Rat, Monkey	WB,IHC	♦♦
AF3450	P-Smad2 (Ser250) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF8314	P-Smad2 (Ser465+Ser467) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3449	P-Smad2 (Ser467) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3367	P-Smad2/3 (Thr8) Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF8315	P-Smad3 (Ser423+Ser425) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3362	P-Smad3 (Ser425) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF8316	P-Smad4 (Thr276) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF4379	P-TAK1 (Thr184/Thr187) Ab	Human, Mouse, Rat	WB	♦♦
AF4315	P-TAZ (Ser89) Ab	Human, Mouse, Rat	WB	♦♦
AF8080	P-TGFBR1 (Ser165) Ab	Human, Mouse, Rat	WB	♦♦
AF8191	P-TGFBR2 (Tyr284) Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF3328	P-YAP (Ser127) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF6352	RhoA Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF0614	Smad1/5/9 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6449	Smad2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6367	Smad2/3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦

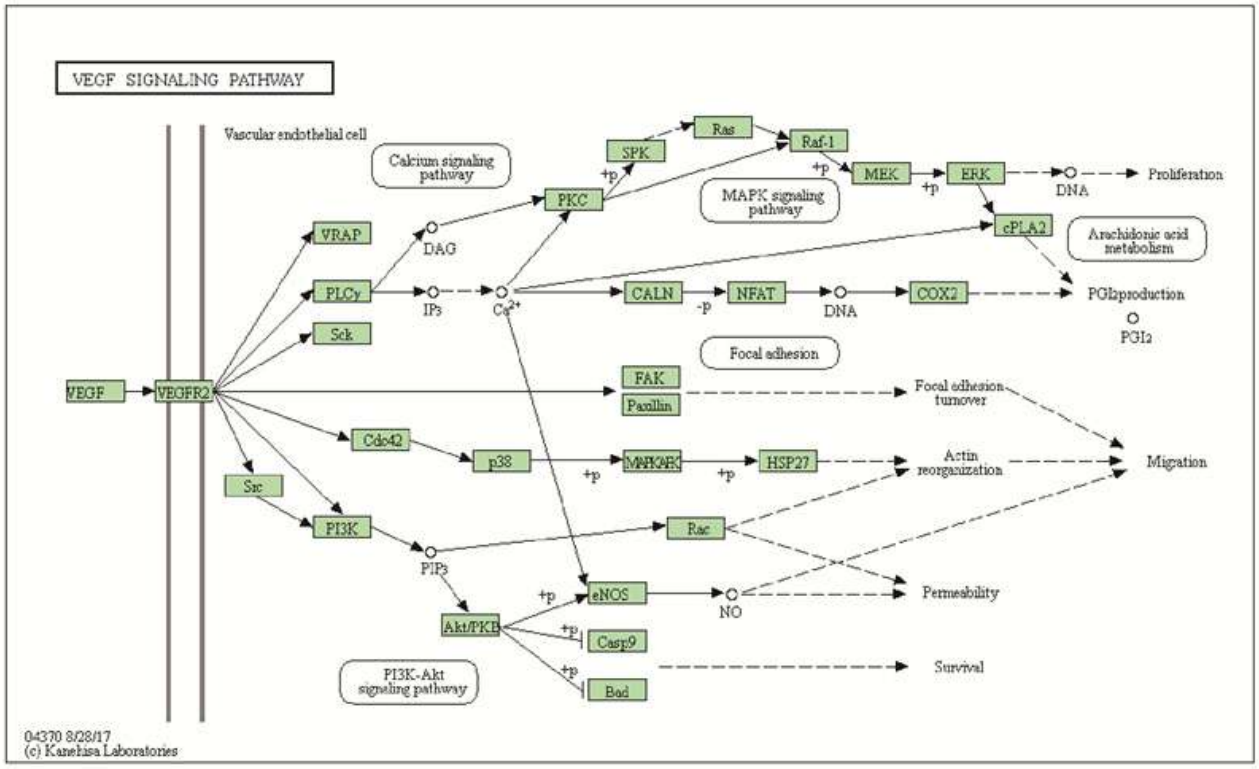
Cat#	Des#	Reactivity	Application	Cited
AF6362	Smad3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5247	Smad4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5147	Smad7 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF4002	SNAI2 Ab	Human, Mouse, Rat	WB	♦♦
DF6202	SNAI2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF8720	SOX8/9/17/18 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6017	Survivin Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7616	TAK1 Ab	Human, Mouse, Rat	WB	♦♦
AF4679	TAK1 Ab	Human, Mouse, Rat	WB	♦♦
AF1027	TGF beta1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5347	TGFBR1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5449	TGFBR2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5315	Wnt1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6113	WNT3A Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6856	WntSa Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF9042	WNT7B Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6328	YAP Ab	Human, Mouse, Rat, Monkey	WB,IF/ICC	♦♦

Ongoing angiogenesis in tumors

The occurrence of malignant tumors is associated with excessive cell proliferation, and tumor proliferation requires large amounts of oxygen consumption, so tumor tissue hypoxia is an important biological feature of malignant tumors. Many genes in tumor cells that make stress response to hypoxic conditions are regulated by HIF-1a, and studies have shown that HIF-1a is closely related to tumor growth and proliferation, invasion and metastasis, neoangiogenesis, apoptosis, drug resistance and other characteristics.

VEGF plays a key role in tumor angiogenesis, and in the signaling pathway that regulates VEGF during hypoxia, HIF-1a plays a central role, and its function not only increases the mRNA stability of VEGF, but also increases the transcriptional activity of VEGF. The VEGF family consists of five structurally related factors, VEGFA (also known as VEGFA165 and the best studied), VEGFB, VEGFC, VEGFD, and placental growth factor (PIGF), and members of the VEGF family exist predominantly as homodimeric polysomes, although the natural heterodimeric VEGFA and PIGF have also been reported. The major VEGF receptor on endothelial cells is VEGFR2.VEGFR2 is an important target for the study of endothelial cell biology during development and in the adult, in physiology and pathology. Current studies on VEGF receptors are still more focused on VEGFR2 signaling.


HIF-1 SIGNALING PATHWAY
IL6
IL6R
JAK2
STAT3
DNA
LPS
TLR4
NF-κB
IFN-γ
IFNγR
HIF-1α mRNA
MAPK signaling pathway
GF
RTK
MEK
ERK
MNK
PI3K
AKT
mTOR
4E-BP1
eIF4E
p70S6K
rpS6
Translation
mTOR signaling pathway
PI3K-Akt signaling pathway
PKC
DAG
IP3
PLCγ
Intermittent hypoxia
HOX
ROS
Calcium signaling pathway
CamK
HIF-1α
PHD
Normoxia
Degradation
Ubiquitin mediated proteolysis
Continuous hypoxia
Hypoxia
HIF-1β
DNA
Glucose
Glut
Pyruvate
PDK-1
PDH
Acetyl-CoA
Citrate cycle (TCA cycle)
ATP
Mitochondrion
LDHA
Lactate
TIMP-1
CD18
Matrix and barrier functions
Inflammation
Increase oxygen delivery
EPO
Erythropoiesis
TF
TFRC
Iron metabolism
VEGF
Flt-1
BDF
PAI-1
ANGPT
Tie-2
TIMP2-1
Angiogenesis
VEGF signaling pathway
EDN1
iNOS
eNOS
HMOX1
ANP
Vascular tone
Reduce oxygen consumption
Promote anaerobic metabolism
Inhibits TCA cycle metabolism
HK
PFKL
GAPDH
ALDOA
ENO1
PGK1
PFK2
Promote anaerobic metabolism
Bcl-2
p21/p27
Regulate proliferation and apoptosis
04066 3/24/17
(c) Kanehisa Laboratories


VEGF SIGNALING PATHWAY
Vascular endothelial cell
Calcium signaling pathway
SPK
Ras
Raf-1
MEK
ERK
Proliferation
DNA
PKC
MAPK signaling pathway
VRAP
DAG
cPLA2
Arachidonic acid metabolism
PLCγ
IPs
Ca2+
CALN
NFAT
COX2
PGI2production
PGI2
Sck
Focal adhesion
VEGF
VEGFR2
FAK
Paxillin
Focal adhesion turnover
Cdc42
p38
MAPKAPK
HSP27
Actin reorganization
Migration
Src
PI3K
Rac
PIP3
eNOS
NO
Permeability
Akt/PKB
Casp9
Bad
PI3K-Akt signaling pathway
Survival
04370 8/28/17
(c) Kanehisa Laboratories

• Hot-selling antibodies recommended

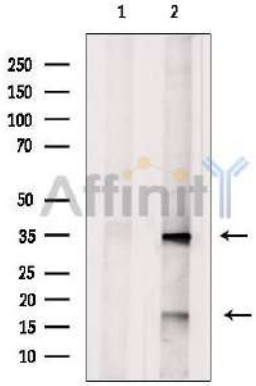
VEGFA Antibody (PubMed 83)

Catalog: AF5131

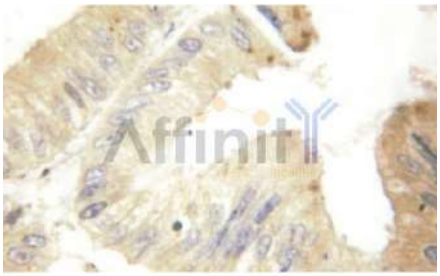
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

Prediction: Pig, Bovine, Horse, Sheep, Rabbit, Dog



Western blot analysis of extracts from Hybridoma cells, using VEGF Antibody. The lane on the left was treated with blocking peptide.



AF5131 at 1/100 staining human colon tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.

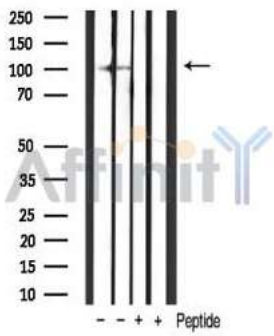
HIF1A Antibody (PubMed 65)

Catalog: AF1009

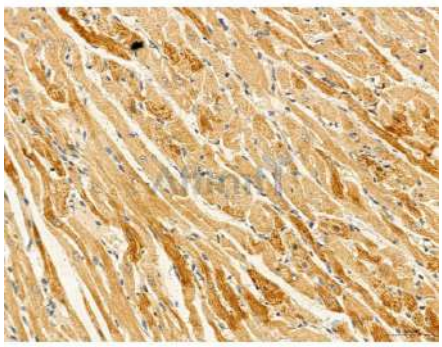
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

Prediction: Pig, Bovine, Horse, Rabbit



Western blot analysis of extracts from various sample,using hif1a antibody. lane1:mouse muscle, lane2:mouse brain, lane3:mouse muscle with blocking peptide, lane4:mouse brain with blocking peptide,



AF1009 at 1/100 staining Rat heart tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

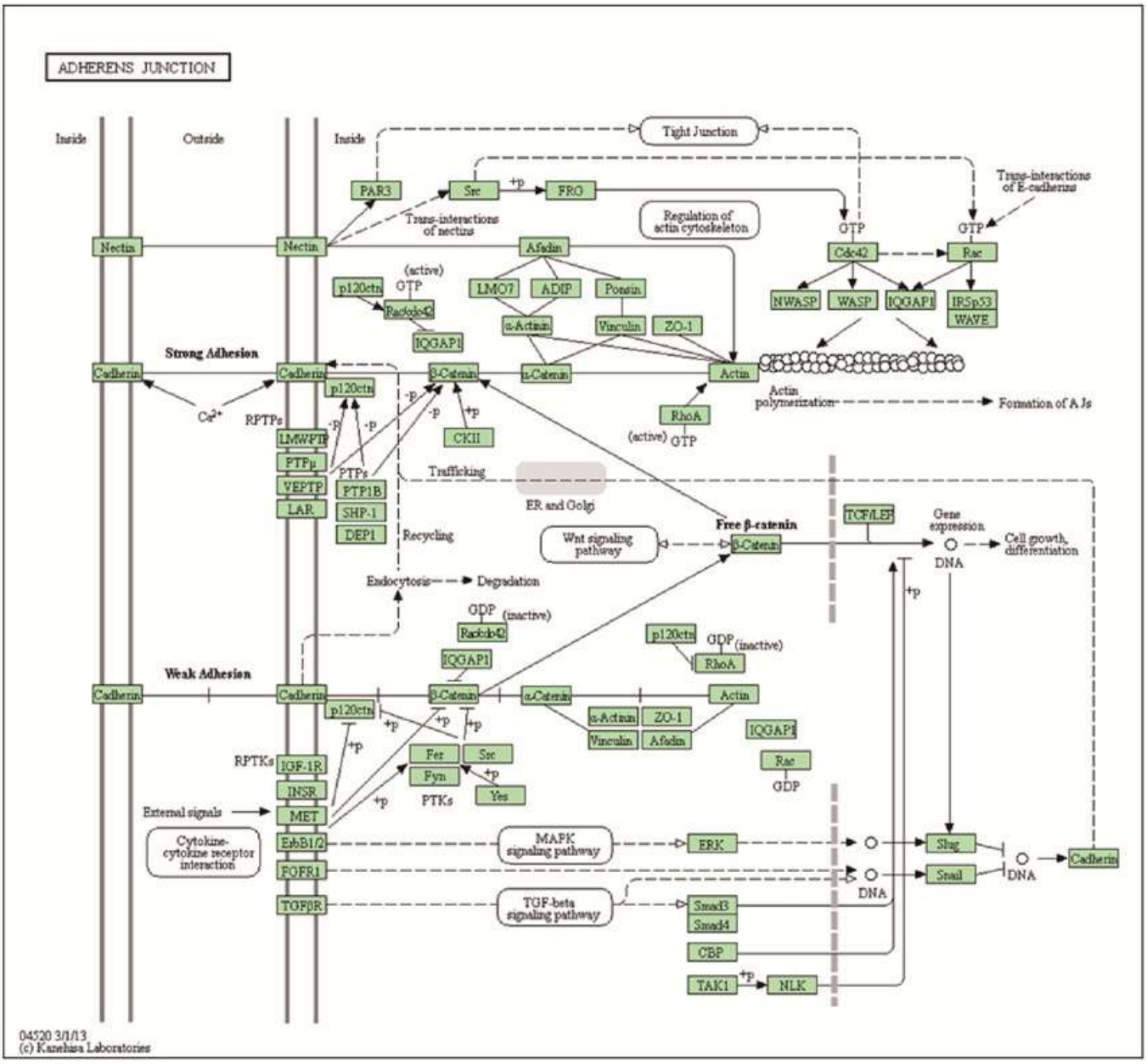
• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF6432	4E-BP1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF1017	Acetyl-NF-kappaB p65 (Lys310) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5124	Angiopoietin 2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF6139	Bcl-2 Ab	Human, Mouse, Rat, Chinese Mitten Crab	WB,IHC,IF/ICC	♦♦♦♦♦
AF0769	Bcl-2 Ab	Human	WB,IHC,IF/ICC	♦♦
BF9103	Bcl-2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,ELISA	♦♦
AF6493	CaMKII alpha/delta Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6043	EGFR Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0096	eNOS Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF0155	ERK1/2 Ab	Human, Mouse, Rat, Pig, Zebrafish, Bovine, Horse, Sheep, Dog, Monkey, Fish	WB,IHC,IF/ICC,IP	♦♦♦♦
AF6240	ERK1/2 Ab	Human, Mouse, Rat	WB	♦♦
AF0173	GLUT1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6176	Hexokinase II Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
BF8002	HIF1 alpha mAb	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF1009	HIF1A Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
BF0593	HIF1A Ab	Human, Mouse, Monkey	WB,IHC,IF/ICC,ELISA	♦♦
AF5393	HO-1 Ab	Human, Mouse, Rat	WB,IHC	♦♦♦
DF6096	IGF1 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF6087	IL6 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF0199	iNOS Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6099	Insulin Receptor beta Ab	Human, Mouse, Rat, Monkey	WB	♦♦
DF6045	Interferon gamma Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5360	KAT3B/ p300 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6280	LDHA Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6385	MEK1/2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6308	mTOR Ab	Human, Mouse, Rat, Fish	WB,IHC,IF/ICC	♦♦♦♦
AF5006	NF-kB p65 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
AF0874	NF-kB p65 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF7003	NF-kB p65 Ab	Human, Mouse, Rat, Fish	WB,IHC,IF/ICC	♦♦
AF6290	p21 Cip1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦♦
DF6423	p21 Cip1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6324	p27 Kip1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3431	P-4E-BP1 (Thr36) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3432	P-4E-BP1 (Thr45) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6226	p70 S6 Kinase Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5176	PAI 1 Ab	Human	WB,IHC,IF/ICC	♦♦
AF0832	P-AKT1 (Thr308) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6261	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦♦
AF6259	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF7208	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Pig	WB,IF/ICC	♦♦
AF3493	P-CaMKII alpha/delta (Thr286) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3044	P-EGFR (Ser1070) Ab	Human, Mouse, Rat	/B,IHC,IF/ICC	♦♦
AF3247	P-eNOS (Ser1177) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF1015	P-ERK1/2 (Thr202/Tyr204) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦
AF1014	P-ERK1/2 (Tyr204) Ab	Human, Mouse, Rat, Bovine	WB,IHC	♦♦

Cat#	Des#	Reactivity	Application	Cited
AF5112	Pi3 kinase P110 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6241	P13K p85 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6242	PI3K p85/p55 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF3099	P-Insulin Receptor beta (Tyr1361) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6196	PKC alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6197	PKC-pan Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8035	P-MEK1/2 (Ser218+Ser222/Ser222+Ser226) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF3308	P-mTOR (Ser2448) Ab	Human, Mouse, Rat, Fish	WB,IHC	♦♦♦♦
AF3309	P-mTOR (Ser2481) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3310	P-mTOR (Thr2446) Ab	Human, Mouse, Rat	WB	♦♦
AF3219	P-NF kappaB p105/p50 (Ser337) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3387	P-NF-kB p65 (Ser276) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF2006	P-NF-kB p65 (Ser536)Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦♦
AF3325	P-p27 Kip1 (Thr198) Ab	Human	WB,IF/ICC	♦♦
AF3228	P-p70 S6 Kinase (Thr389/Thr412) Ab	Human, Mouse, Rat,Pig	WB,IHC,IF/ICC	♦♦♦
AF0016	P-pan-AKT1/2/3 (Ser473) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
AF0908	P-pan-AKT1/2/3 (Ser473) Ab	Human, Mouse, Rat, Bovine	WB,IHC,IF/ICC	♦♦
AF3263	P-pan-AKT1/2/3 (Ser473) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3262	P-pan-AKT1/2/3 (Thr308) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF3242	P-PI3K p85 (Tyr458)/p55 (Tyr199) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF3241	P-PI3K p85 alpha (Tyr607) Ab	Humar,Mouse,Rat,Pig	WB,IHC,IF/ICC	♦♦♦♦
AF3197	P-PKC-pan (Thr497) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3354	P-RPS6 (Ser235) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3294	P-STAT3 (Ser727) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3293	P-STAT3 (Tyr705) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦♦
AF3295	P-STAT3 (Tyr705) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF6354	RPS6 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF6294	STAT3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6293	STAT3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7007	TIMP1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7017	TLR4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF5343	Transferrin Receptor Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF5131	VEGFA Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
DF7470	VEGFA Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF6204	VEGFR1 Ab	Human, Mouse, Rat	WB,IF/ICC,IHC-P,IHC-F	♦♦

Tumor Tissue Invasion and Metastasis

The primary factors affecting the prognosis of tumor patients are local recurrence and distant metastasis. Research has shown that epithelial-mesenchymal transition (EMT) is an important link in tumorigenesis. Tumor cells undergo EMT, acquire invasive properties, infiltrate the surrounding stroma, and form a microenvironment that promotes tumor growth and metastasis. EMT involves multiple signaling pathways and complex molecular mechanisms, and is closely related to tumor invasion and metastasis. EMT is regulated by a number of factors, such as E-cadherin, transforming growth factor B (TGF-B), Wnt signaling pathway, microRNAs and transcription factors, etc. EMT in epithelial cells is manifested by a variety of factors such as E-cadherin, TGF-B, microRNAs and transcription factors. Epithelial cell EMT is manifested as follows:0 morphological changes a cell morphology from cobblestone-like to spindle-like, loss of cell polarity, skeleton changes, infiltration and migration ability to increase:2 molecular markers change a epithelialization molecular markers, such as E-cadherin (E-cadherin) and other molecules, the expression level of the decrease of mesenchymalization molecular markers, such as the expression of vimentin (vimentin) and so on. increased.


ADHERENS JUNCTION
Inside
Outside
Inside
Tight Junction
PAR3
Src
+p
FRG
Trans-interactions of nectins
Regulation of actin cytoskeleton
Trans-interactions of E-cadherins
GTP
GTP
Nectin
Nectin
Afadin
Cdc42
Rac
(active)
p120ctn
GTP
LMO7
ADIP
Ponsin
NWASP
WASP
IQGAP1
IRSp53
WAVE
Racfodo42
α-Actinin
Vinculin
ZO-1
IQGAP1
Strong Adhesion
Cadherin
Cadherin
β-Catenin
α-Catenin
Actin
p120ctn
Actin polymerization
Formation of A Js
Ca2+
RPTPs
-p
-p
-p
+p
CKII
RhoA
(active)
GTP
LMWPTP
PTPμ
VEPTP
LAR
PTPs
PTP1B
SHP-1
DEP1
Trafficking
ER and Golgi
Recycling
Wnt signaling pathway
Free β-catenin
TCF/LEF
Gene expression
Cell growth, differentiation
DNA
Endocytosis
Degradation
GDP
(inactive)
Racfodo42
IQGAP1
p120ctn
GDP
(inactive)
RhoA
Weak Adhesion
Cadherin
Cadherin
β-Catenin
α-Catenin
Actin
p120ctn
+p
+p
+p
+p
α-Actinin
ZO-1
Vinculin
Afadin
IQGAP1
Rac
GDP
RPTKs
IGF-1R
INSR
MET
Fer
Src
Fyn
Yes
+p
PTKs
External signals
Cytokine-cytokine receptor interaction
ErbB1/2
FGFR1
TGFβR
MAPK signaling pathway
ERK
TGF-beta signaling pathway
Smad3
Smad4
CBP
TAK1
+p
NLK
Slug
Snail
DNA
DNA
Cadherin
04520 3/1/13
(c) Kanehisa Laboratories

• Hot-selling antibodies recommended

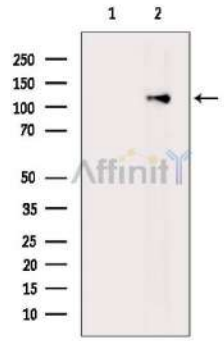
E-Cadherin Antibody (PubMed 112)

Catalog: AF0131

Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat, Monkey

Prediction: Pig, Zebrafish, Bovine, Horse, Sheep, Rabbit, Dog, Chicken, Xenopus



Western blot analysis of extracts from VERO cells(H2O2 treatment), using E-cadherin Antibody. The lane on the left was treated with blocking peptide.

AF0131 at 1/100 staining rat kidney tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.

AF0131 staining HepG2 cells(30min of 4uM Forskolin treatment) by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF0131) and mouse anti-beta tubulin Ab(T0023) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

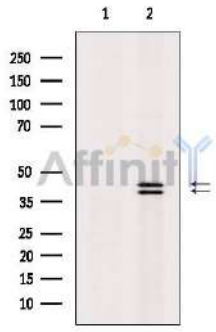
Phospho-ERK1/2 (Thr202/Tyr204) Antibody (PubMed 208)

Catalog: AF1015

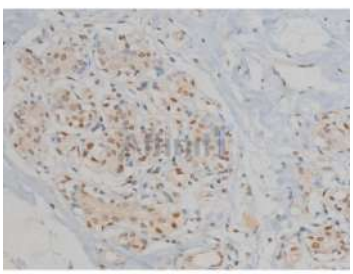
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

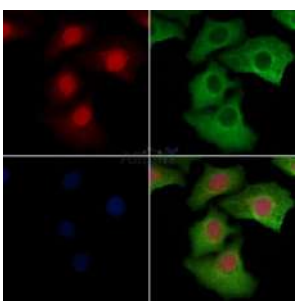
Prediction: Pig, Zebrafish, Bovine, Horse, Sheep, Rabbit



Western blot analysis of extracts from K562, using Phospho-ERK1/2 (Thr202/Tyr204) Antibody. The lane on the left was treated with blocking peptide.



AF1015 at 1/200 staining Human heart tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



AF1015 staining Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(#AF1015) and mouse anti-beta tubulin Ab(#T0023) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI (blue).

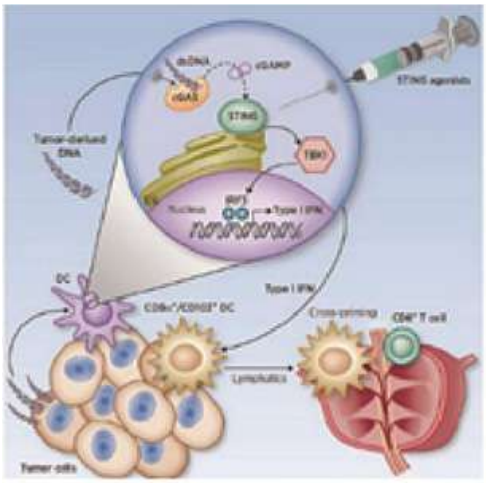
• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF6266	beta Catenin Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6794	beta Catenin Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6679	beta Catenin Ab	Human, Mouse, Rat	WB	♦♦
BF8016	beta Catenin mAb	Human, Mouse, Rat	WB,IF/ICC	♦
AF4684	Catenin-1 Ab	Human, Mouse, Rat	WB	♦♦
BF0319	Catenin-beta Ab	Human	WB,IHC,IF/ICC,ELISA,FACS	♦♦
AF6191	CD31 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6128	c-Met Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0139	CREB-BP Ab	Human, Mouse	WB,IHC,IF/ICC	♦
DF6524	CTNND1 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF0131	E-cadherin Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦
AF7718	E-cadherin Ab	Human, Mouse, Rat	WB	♦♦
BF0219	E-cadherin Ab	Human, Mouse, Monkey	WB,IHC,IF/ICC,ELISA	♦♦
DF7157	E-cadherin Ab	Human, Mouse, Rat	WB,IHC	♦
AF6043	EGFR Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6042	EGFR Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
AF0155	ERK1/2 Ab	Human, Mouse, Rat, Pig Zebrafish, Bovine, Horse, Sheep, Dog, Monkey, Fish	WB,IHC,IF/ICC,IP	♦♦♦♦
AF6240	ERK1/2 Ab	Human, Mouse, Rat	WB	♦♦
AF6156	FGFR1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7681	HER2/ErbB2 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF6069	HER2/ErbB2 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦
AF6123	IGF1 Receptor Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF6124	IGF1 Receptor Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
AF6125	IGF1R/Insulin Receptor Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6088	Insulin Receptor alpha Ab	Human	WB	♦
AF6099	Insulin Receptor beta Ab	Human, Mouse, Rat, Monkey	WB	♦♦
DF4388	IQGAP1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF5360	KAT3B / p300 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0674	KAT3B / p300 Ab	Human	WB,IHC	♦♦
DF7570	LEF1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
BF8004	p44/42 MAPK (Erk1/2) mAb	Human, Mouse, Rat	WB,IHC,ELISA	♦♦
DF2942	pan Cadherin Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
DF3368	PARD3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3267	P-beta Catenin (Ser33) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
DF2989	P-beta Catenin (Ser33/Ser37/Thr41) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3266	P-beta Catenin (Ser37) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8340	P-beta Catenin (Ser552)Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3268	P-beta Catenin (Thr41/Ser45) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3128	P-c-Met (Tyr1003) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8365	P-E-cadherin (Ser844) Ab	Human, Mouse, Rat, Monkey	WB,IHC	♦
AF3044	P-EGFR (Ser1070) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3047	P-EGFR (Tyr1048) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3048	P-EGFR (Tyr1173) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3240	P-ERK1/2(Thr202) Ab	Human, Mouse, Rat	WB	♦♦
AF1015	P-ERK1/2(Thr202/Tyr204)Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦

Cat#	Des#	Reactivity	Application	Cited
AF8208	P-ERK1/2 (Thr202+Tyr204/Thr185+Tyr187)Ab	Human, Mouse, Rat, Monkey	WB,IHC	♦♦
AF1014	P-ERK1/2 (Tyr204) Ab	Human, Mouse, Rat, Bovine	WB,IHC	♦♦
AF3157	P-FGFR1(Tyr654) Ab	Human, Mouse, Rat, Monkey	WB,IF/ICC	♦♦
AF8210	P-FGFR1/2/3/4(Tyr653+Tyr654) Ab	Human, Mouse, Rat, Monkey	WB,IHC	♦♦
AF3069	P-HER2/ErbB2 (Tyr1248) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3123	P-IGF1 Receptor (Tyr1165/Tyr1166) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3125	P-IGF1R/Insulin Receptor (Tyr1161) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3099	P-Insulin Receptor beta (Tyr1361) Ab	Human, Mouse4.Rat	WB,IHC,IF/ICC	♦♦
AF3352	P-RhoA (Ser188) Ab	Human, Mouse, Rat, Monkey	WB	♦♦
AF3244	P-SHP1 (Tyr536) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3450	P-Smad2 (Ser250) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF8314	P-Smad2 (Ser465+Ser467) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3449	P-Smad2 (Ser467) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3367	P-Smad2/3 (Thr8) Ab	Human, Mouse, Rat	WB,IHC	♦♦
Af8315	P-Smad3 (Ser423+Ser425) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3362	P-Smad3 (Ser425) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF8316	P-Smad4 (Thr276) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3162	P-Src (Tyr419) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3161	P-Src(Tyr527) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦
AF4379	P-TAK1 (Thr184/Thr187) Ab	Human, Mouse, Rat	WB	♦♦
AF3019	P-TAK1 (Thr187) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
AF8080	P-TGFBR1 (Ser165) Ab	Human, Mouse, Rat	WB	♦♦
AF8456	P-TGFBR1 (Thr204) Ab	Human, Mouse, Rat	WB,IHC	♦
AF8191	P-TGFBR2 (Tyr284) Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF6322	Rac1/cdc42 Ab	Human, Mouse, Rat	WR.IHC	♦♦
AF4200	Rac1/cdc42 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
AF6352	RhoA Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF6449	Smad2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6367	Smad2/3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6362	Smad3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
BF0378	SMAD3 Ab	Human, Mouse	WB,IF/ICC,ELISA	♦♦
AF5247	Smad4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF4002	SNAI2 Ab	Human, Mouse, Rat	WB	♦♦
DF6202	SNAI2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF6032	SNAIL Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6161	Src Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF7616	TAK1 Ab	Human, Mouse, Rat	WB	♦♦
AF4679	TAK1 Ab	Human, Mouse, Rat	WB	♦♦
DF4573	TCF7L1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
DF7622	TCF7L2 Ab	Human, Mouse, Rat, Monkey	WB	♦♦
AF5347	TGFBR1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5449	TGFBR2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0259	TGFBR2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF7514	VE-cadherin Ab	Human, Mouse, Rat	WB,IHC	♦
AF5145	ZO 1 Ab	Human, Mouse, Rat, Pig, Monkey	WB,IHC,IF/ICC	♦♦♦♦
DF2250	ZO 1 Ab	Human, Mouse	WB	♦

Tumor Cells Maintain Self-Propagation

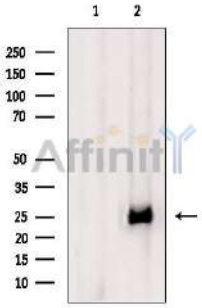
Tumor cells use various adaptive mechanisms to evade surveillance by the host immune system. Among them, immune checkpoints have been a hot topic of research in recent years, such as PD-1/PD-L1, CTLA-4, LAG3TIM3 are typical representatives. Immune checkpoint molecules are overexpressed or overfunctional, and immune function is suppressed. In addition, stimulator of interferon genes (STING), an important target molecule capable of regulating intrinsic immune function, has been discovered in recent years. Cyclic guanosine monophosphate adenoic acid (CGAMP) synthase (CGAS) recognizes exogenous DNA, and the CGAS-CGAMP-STING signaling pathway involving both plays an important role in the production of type I interferons and inflammatory cytokines and the activation of antigen-presenting cells, thereby promoting the induction and recruitment of tumor-specific CD8+ T cells, which in turn attack tumor cells. Thus, STING agonists appear to be promising as a new class of immunotherapy or in combination with immune checkpoint inhibitors against tumors.



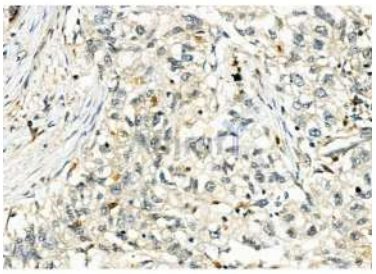
- **Hot-selling antibodies recommended**

CTLA4 Antibody (PubMed 3)

Catalog: DF6793
Application: WB IHC
Reactivity: Human, Mouse
Prediction: Pig, Horse, Rabbit, Dog, Chicken



Western blot analysis of extracts from Mouse brain, using CTLA4 Antibody. The lane on the left was treated with blocking peptide.



DF6793 at 1/100 staining Human pancreatic cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

Pd1 Antibody (PubMed 3)

Catalog: DF2943
Application: WB
Reactivity: Human, Mouse, Rat
Prediction: Pig, Bovine, Horse, Rabbit, Dog

Western blot analysis of extracts from Hela, using PD1 Antibody. Lane 1 was treated with the blocking peptide.

• Related antibodies recommended

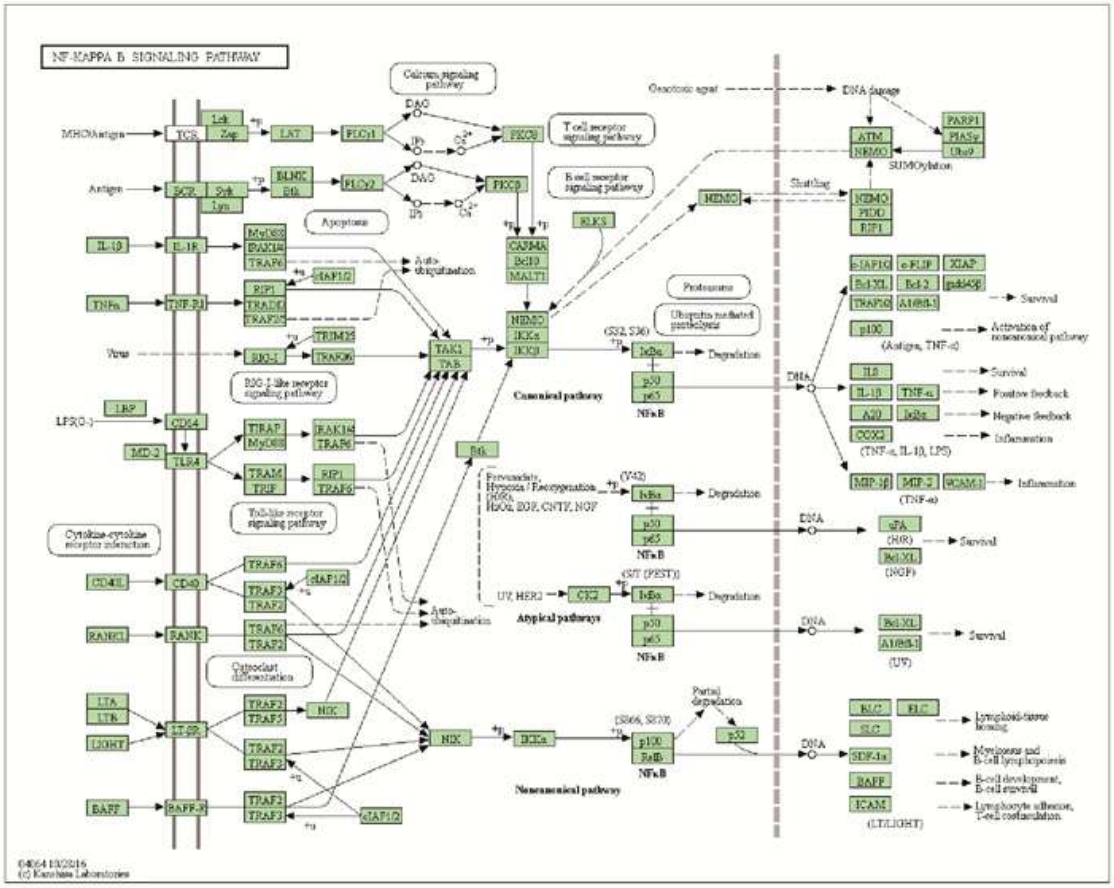
Cat#	Des#	Reactivity	Application	Cited
DF6526	Cd274 (PD-L1) Antibody	Human,Mouse,Rat	WB,ELISA(peptide)	♦♦
DF6451	CD4 Ab	Human, Mouse	WB	♦♦
DF6839	CD45 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5126	CD8 Antibody	Human,Mouse,Rat	WB,IHC,ELISA(peptide)	♦♦
DF6895	IRF3 Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦
DF2943	PD1 Antibody	Human,Mouse,Rat	WB,ELISA(peptide)	♦♦
AF7387	Phospho-IRF3 (Ser14) Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦
AF3910	Phospho-IRF3 (Ser385) Antibody	Human,Mouse,Rat	IF/ICC,ELISA(peptide)	♦
AF3438	Phospho-IRF3 (Ser386) Antibody	Human,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦
AF2436	Phospho-IRF3 (Ser396) Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC	♦
AF8190	Phospho-TBK1 (Ser172) Antibody	Human,Mouse,Rat	WB,IHC,ELISA(peptide)	♦♦
AF7416	Phospho-TMEM173/STING (Ser366) Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦
DF7026	TBK1 Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC,ELISA(peptide)	♦♦
DF12090	TMEM173/STING Antibody	Human,Mouse,Rat	WB,IHC,IF/ICC	♦

Tumor-Promoting Inflammation

Normal cells exist in a relatively stable internal environment (homeostasis) and undergo proliferation, differentiation, apoptosis, and secretion and expression of related factors according to normal processes. The process of tumorigenesis and development, however, constantly disturbs this balance. The infinite proliferation of tumor cells requires the continuous shaping of an external microenvironment suitable for tumor growth, i.e. tissue hypoxia and acidosis, mesenchymal hyperpressure formation, production of a large number of growth factors and protein hydrolyzing enzymes, and immune-inflammatory reactions. Inflammatory factors in the tumor microenvironment play an important role in the invasion and metastasis of swollen dense cells. Important molecules and pathways that mediate immune responses to the tumor microenvironment include NF-k B, inflammatory vesicle signaling, tumor-infiltrating immune cells, and immune checkpoints.

The transcription factor NF-k B plays an important "orchestrator" role in the innate immune and inflammatory response. In unstimulated cells, NF-KB forms a complex with the cytoplasmic repressor protein 1KB. Upon activation, the IkB protein is phosphorylated and then rapidly degraded by the ubiquitin-proteasome system. Removal of the IkB protein releases isolated NF-kB into the nucleus to regulate gene expression.

NF-k B signaling in tumor cells and immune cells in the tumor microenvironment is closely associated with epithelial-mesenchymal transition (EMT) in tumor border cells, which allows tumor detachment and migration. Thus, the phase and communication between NF-K B signaling in immune-infiltrating cells and cancer cells creates an environment that promotes tumor growth, invasion, and malignancy in a circular feed-forward manner.



• Hot-selling antibodies recommended

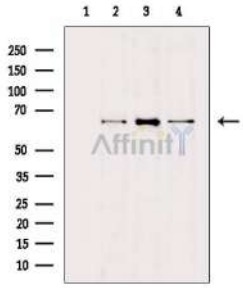
NF-kB p65 Antibody (PubMed 285)

Catalog: AF5006

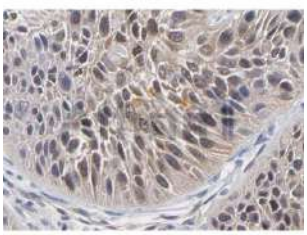
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat, Monkey

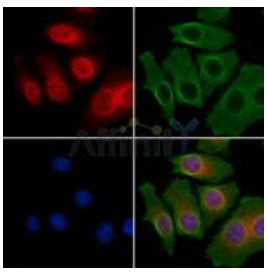
Prediction: Pig, Bovine, Horse, Sheep, Dog



Western blot analysis of extracts from various samples, using NF-kB p65 Antibody. Lane 1: Rat liver, blocked with antigen-specific peptides, Lane 2: Rat liver, Lane 3: HepG2 cells(serum starvation treatment), Lane 4: K562 cells(UV treatment).



AF5006 at 1/100 staining Human Breast Cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



AF5006 staining HepG2 cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF5006) and mouse anti-beta tubulin Ab(T0023) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

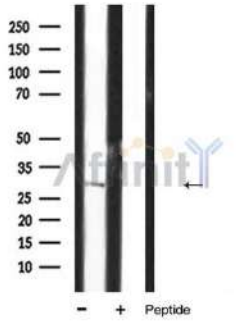
Il1 beta Antibody (PubMed 205)

Catalog: AF5103

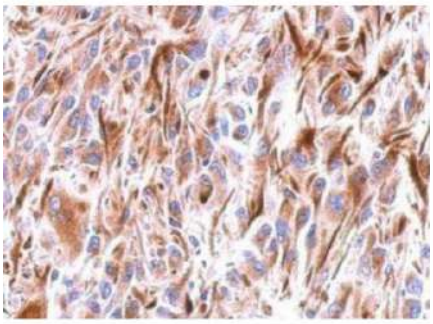
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

Prediction: Horse, Rabbit



Western blot analysis of Interleukin 1β expression in HUVEC lysates. Lane2 was treated with blockging peptide.



AF5103 at 1/100 staining rat endometrial tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.

AF5103 staining murine bone marrow-derived macrophages by ICC/IF. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37° C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600 was used as secondary antibody.

• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF1017	Acetyl-NF-kappaB p65 (Lys310) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6139	Bcl-2 Ab	Human, Mouse, Rat, Chinese Mitten Crab	WB,IHC,IF/ICC	♦♦♦♦♦
AF0769	Bcl-2 Ab	Human	WB.IHC.IF/ICC	♦♦
BF9103	Bcl-2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,ELISA	♦♦
AF6414	BCL-XL Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF13319	CD20 Ab	Human	WB.IHCIF/ICC	♦♦
DF6594	CD3 epsilon Ab	Human, Mouse, Rat	WB.IHC.IF/ICC	♦♦
AF5149	CD34 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
DF6451	CD4 Ab	Human, Mouse	WB	♦♦
DF7456	CD41 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF6392	CD44 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6186	CD44 Ab	Human, Mouse, Rat	WB.IF/ICC	♦♦
DF6360	CDS5 Ab	Human, Mouse	WB,IHC,IF/ICC	♦♦
DF6557	CD59 Ab	Human	WB,IHC	♦♦
AF5126	CD8 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5139	CD9 Ab	Human, Mouse, Rat	WB.IHC,IF/ICC	♦♦
AF6153	c-Kit Ab	Human, Mouse, Rat	WB.IHC.IF/ICC	♦♦
AF4006	Cleaved-IL-1 beta (Asp116) Ab	Human, Mouse, Rat, Zebrafish	WB.IHC.IF/ICC	♦♦♦
AF4006	Cleaved-IL-1 beta (Asp116) Ab	Human, Mouse, Rat, Zebrafish	WB,IHC,IF/ICC	♦♦♦
AF7023	Cleaved-PARP (Asp214) Ab	Human, Mouse, Rat	WB	♦♦♦
AF7003	Cox2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦

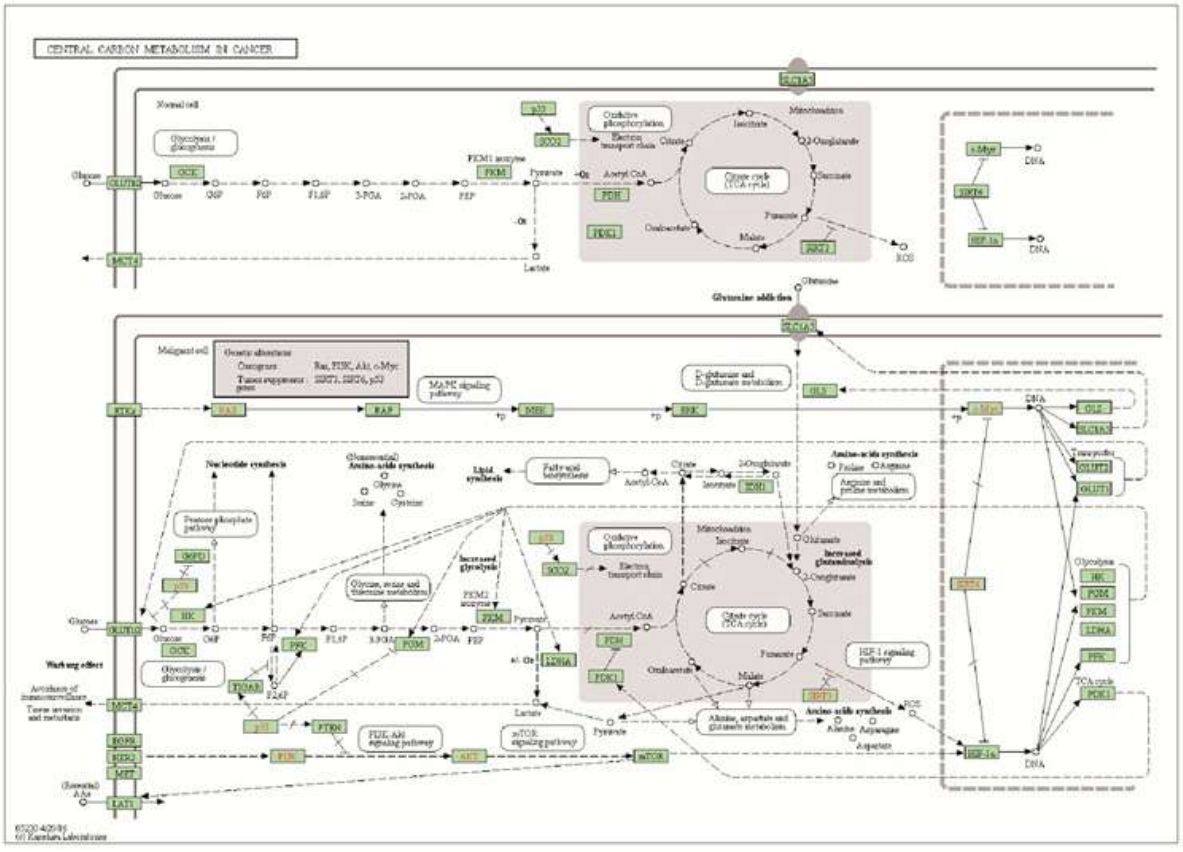
Cat#	Des#	Reactivity	Application	Cited
AF6211	Epo-R Ab	Human, Mouse, Rat, Monkey	WB.IF/ICC	♦♦
DF6330	FCGR1A Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6088	ICAM1 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF7413	ICAM1 Ab	Human	WB,IHC.IF/ICC	♦♦
AF5002	IKB alpha Ab	Human, Mouse, Rat	WB.IHC,IF/ICC	♦♦♦
AF6012	IKK alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6014	IKK alpha/ beta Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6143	IKK gamma Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6009	IKK-beta Ab	Human, Mouse, Rat, Monkey	WB,.IHC,IF/ICC	♦♦♦
DF6893	IL1 alpha Ab	Human, Mouse, Rat	WB.IHC	♦♦
AF5103	IL1 beta Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF5103	IL1 beta Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
DF6251	IL1 beta Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF6251	IL1 beta Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5142	IL4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6087	IL6 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
DF6466	IL6R Ab	Human, Mouse	WB.IHC	♦♦
DF6998	Il8 Ab	Human	WB,IHC	♦♦♦
AF6086	Integrin beta3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF2667	IRAK4 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF2538	ITGA1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
DF2540	ITGA2 Ab	Human, Rat	WB,IHC,IF/ICC	♦♦
DF2911	ITGAM Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6476	ITGAM Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5195	MyD88 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
DF6162	MyD88 Ab	Human, Mouse, Rat	WB,IHC	♦♦♦
AF6217	NF kappaB p105/p50 Ab	Hukan, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5006	NF-kB p65 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
AF0874	NF-kB p65 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF7003	NF-kB p65 Ab	Human, Mouse, Rat, Fish	WB,IHC,IF/ICC	♦♦
AF6387	NF-kB p65 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
BF8005	p65 mAb	Human, Mouse, Rat	WB,ELISA	♦
BF0719	PARP Ab	Human	WB,IHC	♦♦
DF7198	PARP1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF4120	P-ATM (Ser1981) Ab	Human	WB,IHC	♦♦
AF7354	P-BTK(Tyr223/Tyr225) Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF3153	P-c-Kit (Tyr721) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8152	P-Flt3 / CD135 (Tyr591) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF2002	P-IKB alpha (Ser32/Ser36) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦
AF3012	P-IKK alpha (Thr23) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3014	P-IKK alphp/ beta (Ser176/Ser177) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3013	P-IKK alpha/ beta (Ser180/Ser181) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3009	P-IKK beta (Tyr188) Ab	Human, Mouke, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF3010	P-IKK beta (Tyr199) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF8009	P-IRAK1 (Thr387) Ab	Human, Mouse, Rat	WB,IHC	♦♦

Cat#	Des#	Reactivity	Application	Cited
AF6197	PKC-pan Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3219	P-NF kappaB p105/p50 (Ser337) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3387	P-NF-kB p65 (Ser276) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3389	P-NF-kB p65 (Ser311) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF2006	P-NF-kB p65 (Ser536) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦♦
AF3197	P-PKC-pan (Thr497) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7377	P-RIPK1 (Ser161) Ab	Humas Mouse	WB,IHC,IF/ICC	♦♦
AF2398	P-RIPK1 (Ser166) Ab	Human, Mouse	WB,IHC,IF/ICC	♦♦
AF0313	RANKL Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7877	RIPK1 Ab	Human, Mouse, Rat	WB	♦♦
AF5166	SDF 1 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF7616	TAK1 Ab	Human, Mouse, Rat	WB	♦♦
DF6289	TICAM1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF7017	TLR4 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF7014	TNF alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF7014	TNF alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦
AF0282	TNF Receptor I Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6279	TRADD Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF7181	TRAF3 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5380	TRAF3 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF5376	TRAF6 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5343	Transferrin Receptor Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF6082	VCAM1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6368	XIAP Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦

Abnormal Metabolism in Tumors

Most mammalian cells use glucose as their energy source. Glucose is metabolized by the multistep metabolic reaction of glycolysis to produce pyruvate. At normoxic levels, pyruvate enters the mitochondria to be oxidized to produce ATP to meet the energy needs of the cell. In tumor cells, however, most of the pyruvate produced during glycolysis is released from the mitochondria by the action of lactate dehydrogenase to produce lactate, a process that normally occurs under low oxygen conditions. In contrast to mitochondrial glycolysis, glycolysis of lactate under aerobic conditions is called "aerobic glycolysis" or the Warburg effect. Some signaling pathways contribute to the Warburg effect, such as aberrant growth regulatory signals (e.g., PI3K/Akt pathway) that promote glucose uptake and utilization by regulating glucose transport proteins (e.g., GLUT) and metabolic enzymes (e.g., hexokinase phosphofructokinase, etc.). Meanwhile, tumor cell hypoxia can induce the Warburg effect through the accumulation of hypoxia-inducible factor (HIF).

In addition to glucose, tumor cells also have a high demand for glutamine. Glutamine enters the cell via the transporter protein ASCT2/SLC1A5 and is catalyzed in the mitochondria by the enzyme glutaminase (GLS) to glutamate, which is subsequently converted to &-ketoglutarate (&-KG), the intermediate product of the triacontanate cycle. Through the glutathione pathway, cancer cells can recycle the relevant intermediates back into the tritiated acid cycle, thereby supplementing the cellular energy demand under the Warburg effect. Glutamine itself promotes proliferation. The inward flow of glutathione (via ASCT2/SLC1A5) is often accompanied by its outward flow (via SLC7A5/LAT1), which is accompanied by the inward flow of leucine, which activates the mTOR pathway and promotes tumor growth.



• Hot-selling antibodies recommended

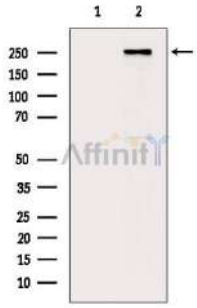
mTOR Antibody (PubMed 78)

Catalog: AF6308

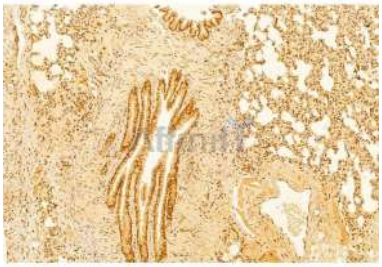
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat, Fish

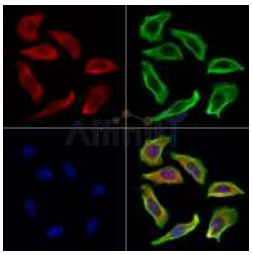
Prediction: Pig, Bovine, Horse, Sheep, Rabbit, Dog, Chicken



Western blot analysis of extracts from RAW264.7 cells(serum starvation treatment), using mTOR Antibody. The lane on the left was treated with blocking peptide.



AF6308 at 1/100 staining Rat lung tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4° C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



AF6308 staining Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF6308 1:200) and mouse anti-beta tubulin Ab(T0023 1:200) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

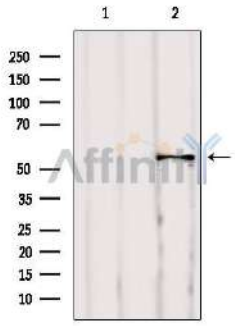
pan-AKT1/2/3 Antibody (PubMed 185)

Catalog: AF6261

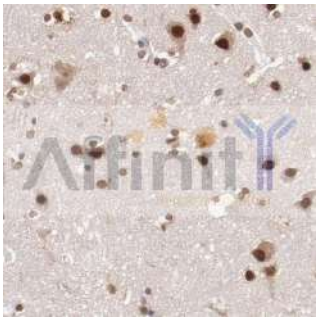
Application: WB IHC IF/ICC IP

Reactivity: Human, Mouse, Rat, Monkey

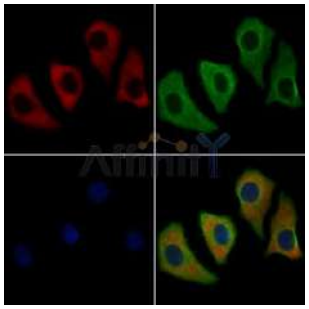
Prediction: Pig, Horse, Dog, Chicken, Xenopus



Western blot analysis of extracts from Hela, using Akt Antibody. Lane 1 was treated with the blocking peptide.



AF6261 at 1/100 staining human brain cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



AF6261 staining Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF6261 1:200) and mouse anti-beta tubulin Ab(T0023 1:200) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF0836	AKT1 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF4718	AKT1 Ab	Human, Mouse, Rat	WB	♦♦
AF6264	AKT2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6153	c-Kit Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6128	c-Met Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0358	c-Myc Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6065	C-RAF Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF0837	C-RAF Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF6043	EGFR Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0155	ERK1/2 Ab	Human, Mouse, Rat, Pig, Zebrafish, Bovine, Horse, Sheep, Dog, Monkey, Fish	WB,IHC,IF/ICC,IP	♦♦ ♦♦
AF6240	ERK1/2 Ab	Human, Mouse, Rat	WB	♦♦
AF6156	FGFR1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0159	FGFR2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0160	FGFR3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6444	G6PD Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0173	GLUT1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF7510	GLUT2 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF6176	Hexokinase II Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
BF8002	HIF1 alpha mAb	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF1009	HIF1A Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
BF0593	HIF1A Ab	Human, Mouse, Monkey	WB,IHC,IF/ICC,ELISA	♦♦

Cat#	Des#	Reactivity	Application	Cited
DF6280	LDHA Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6385	MEK1/2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6384	MEK1/2 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF6308	mTOR Ab	Human, Mouse, Rat, Fish	WB,IHC,IF/ICC	♦♦♦♦
AF7803	mTOR Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
BF8004	p44/42 MAPK (Erk1/2) mAb	Human, Mouse, Rat	WB,IHC,ELISA	♦♦
AF0879	p53 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF0865	p53 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6073	p53 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
BF8013	p53 mAb	Human, Mouse	WB,IF/ICC	♦♦
AF8355	P-AKT1 (Ser473) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF0832	P-AKT1 (Thr308) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3264	P-AKT2 (Ser474) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6261	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC,IP	♦♦♦♦
AF6259	pan-AKT1/2/3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF7208	pan-AKT1/2/3 Ab	Human, Mouse,Rat,Pig	WB,IF/ICC	♦♦
AF3153	P-c-Kit (Tyr721) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3128	P-c-Met (Tyr1003) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3054	P-c-Myc (Ser62) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3055	P-c-Myc (Thr58) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3064	P-C-RAF (Ser259) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0047	P-C-RAF (Ser301) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3065	P-C-RAF (Ser338) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
DF4365	PDHK1 Ab	Ruman,Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3044	P-EGFR (Ser1070) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3047	P-EGFR (Tyr1048) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF3048	P-EGFR (Tyr1173) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3240	P-ERK1/2 (Thr202) Ab	Human, Mouse, Rat	WB	♦♦
AF1015	P-ERK1/2 (Thr202/Tyr204) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦
AF8208	P-ERK1/2 (Thr202+Tyr204/Thr185+Tyr187) Ab	Human, Mouse, Rat, Monkey	WB,IHC	♦♦
AF1014	P-ERK1/2 (Tyr204) Ab	Human, Mouse, Rat, Bovine	WB,IHC	♦♦
AF3157	P-FGFR1 (Tyr654) Ab	Human, Mouse, Rat, Monkey	WB,IF/ICC	♦♦
AF8210	P-FGFR1/2/3/4 (Tyr653+Tyr654) Ab	Human, Mouse, Rat, Monkey	WB,IHC	♦♦
AF8148	P-FGFR2 (Tyr769) Ab	Human, Mouse, Rat, Monkey	WB,IHC	♦♦
AF8439	P-FGFR3 (Tyr724) Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF7362	PFKM Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF8152	P-Flt3 / CD135 (Tyr591) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF3069	P-HER2/ErbB2 (Tyr1248) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5112	PI3 kinase P110 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6241	PI3K p85 alpha Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF5121	P13K p85 alpha Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF6242	PI3K p85/p55 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
DF6164	PIK3CB Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5234	PKM2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF8035	P-MEK1/2 (Ser218+Ser222/Ser222+Ser226) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦

Cat#	Des#	Reactivity	Application	Cited
AF3308	P-mTOR(Ser2448) Ab	Human, Mouse, Rat, Fish	WB,IHC	♦♦♦♦
AF3309	P-mTOR(Ser2481) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3310	P-mTOR (Thr2446) Ab	Human, Mouse, Rat	WB	♦♦
AF3075	P-p53 (Ser15) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC,IP	♦♦
AF3073	P-p53 (Ser20) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0016	P-pan-AKT1/2/3 (Ser473) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦♦♦
AF0908	P-pan-AKT1/2/3 (Ser473) Ab	Human, Mouse, Rat, Bovine	WB,IHC,IF/ICC	♦♦
AF3263	F-pan-AKT1/2/3 (Ser473) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3262	P-pan-AKT1/2/3 (Thr308) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF8502	P-PDHA1/2 (Ser293/Ser291) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF3242	P-PI3K p85 (Tyr458)/p55 (Tyr199) Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF3241	P-P13K p85 alpha (Tyr607) Ab	Human, Mouse, Rat, Pig	WB,IHC,IF/ICC	♦♦♦♦
DF7771	P-PKM2 (Tyr105) Ab	Human, Mouse, Rat	WB	♦♦
AF3120	P-Ret (Tyr1062) Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF8055	P-Ret (Tyr905) Ab	Human, Mouse, Rat, Monkey	WB,IF/ICC	♦♦
AF6351	PTEN Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF5447	PTEN Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF3072	P TrkA(Tyr680+Tyr681)Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF7184	P-TrkA (Tyr791) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0247	RASH/RASK/RASN Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6120	Ret Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF5135	SIRT3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF8065	SLC7A5 Ab	Human, Mouse	WB,IHC,IF/ICC	♦♦
DF6822	TrkA Ab	Human, Mouse, Rat	WB,IHC	♦♦

Senescence and tumors

Cellular senescence is a phenomenon and process that occurs when a cell permanently exits the cell cycle as a result of an internal or external stimulus. Therefore, the pathways of cellular senescence and the pathways of cell cycle inhibition have a very high degree of similarity. One of the typical characteristics of tumors is the ability to continue dividing and proliferating. The process of cellular senescence, on the other hand, causes cells to exit the cell cycle permanently. Researchers consider cellular senescence to be a third defense against the development of cancerous cells. However, it has been shown that senescent cells can indirectly cause cell damage and even induce malignant cell proliferation through the senescence-associated secretory phenotype (SASP) mechanism. There are several key targets in the study of tumors and senescence: p53 and phospho-p53 (a key regulator of the cell cycle, phosphorylated p53 will activate cyclin-dependent kinase inhibitors (CDKs) and ultimately lead to cell cycle arrest), p21 (Howe senescence marker 21 is a CDKI downstream of phospho-D53), P16 (a member of the CDKIINK4 family that interacts with CDK4 and CDK6), and P16 (a member of the CDKIINK4 family that interacts with CDK4 and CDK6). CDK4 and CDK6 to arrest the cell cycle at G1. p16 expression is thought to contribute to cellular senescence), retinoblastoma (Rb), and acidified Rb (Rb phosphorylation is required to deregulate transcriptional targets and promote cell cycle progression), among others.

• Hot–selling antibodies recommended

p53 Antibody (PubMed 61)

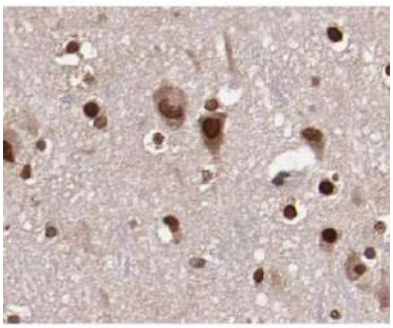
Catalog: AF0879

Application: WB IHC IF/ICC

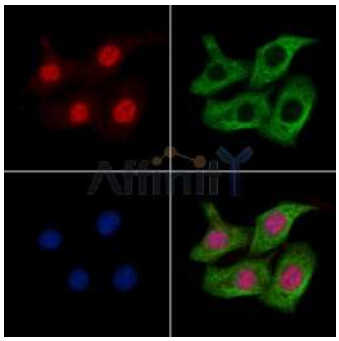
Reactivity: Human, Mouse, Rat, Monkey

Prediction: Pig, Bovine, Sheep, Rabbit

Western blot analysis of p53 using various lysates Lanes 1 – 2: Merged signal (red and green). Green – AF0879 observed at 53kDa. Red – loading control, T0004, observed at 36 kDa. Blots were developed with Goat Anti–Rabbit IgG(H+L) FITC–conjugated (S0008) and Goat Anti–Mouse IgG(H+L) Alexa Fluor 594–conjugated (S0005) secondary antibodies



AF0879 at 1/100 staining rat brain by IHC–P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti–rabbit antibody was used as the secondary antibody.



AF0879 staining H2O2 treated Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X–100,then blocked in 10% serum for 45 minutes at 25° C. Samples were then incubated with primary Ab(AF0879) and mouse anti–beta tubulin Ab(T0023) for 1 hour at 37° C. An AlexaFluor594 conjugated goat anti–rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti–mouse IgG(H+L) Ab(Green) were used as the secondary antibody. The nuclear counter stain is DAPI(blue).

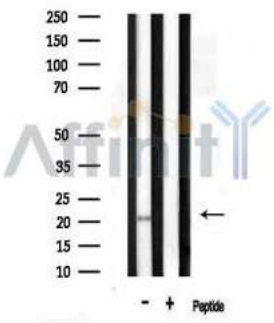
Bax Antibody (PubMed 235)

Catalog: AF0120

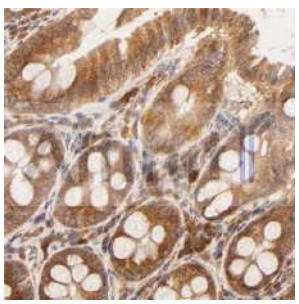
Application: WB IHC IF/ICC

Reactivity: Human, Mouse, Rat

Prediction: Pig, Bovine, Horse, Rabbit, Dog



Western blot analysis on rat liver tissue lysates using Bax Antibody



AF0120 at 1/100 staining mouse gastric tissue sections by IHC–P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22° C. An HRP conjugated goat anti–rabbit antibody was used as the secondary antibody.

AF0120 staining lovo cells by ICC/IF. Cells were fixed with PFA and permeabilized in 0.1% saponin prior to blocking in 10% serum for 45 minutes at 37° C. The primary antibody was diluted 1/400 and incubated with the sample for 1 hour at 37° C. A Alexa Fluor 594 conjugated goat polyclonal to rabbit IgG (H+L), diluted 1/600 was used as secondary antibody.

• Related antibodies recommended

Cat#	Des#	Reactivity	Application	Cited
AF3744	Acetyl-P53 (Lys382) Ab	Human, Mouse, Rat	ELISA(peptide)	♦♦
AF0117	APAF1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF2272	APAF1 Ab	Human, Mouse, Rat	WB	♦
AF4119	ATM Ab	Human, Mouse, Rat, Monkey	WB,IF/ICC	♦♦
AF0120	Bax Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦♦♦
AF0083	Bax Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF5173	BBC3 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
DF6016	BID Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6311	Caspase 3 Ab	Human, Mouse, Rat, Bovine	WB,IHC,IF/ICC	♦♦♦♦♦
DF6879	Caspase 3 Ab	Human, Mouse, Rat	WB,IF/ICC,IP	♦♦
DF6020	Caspase 3 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦
AF6442	Caspase 8 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF6348	Caspase 9 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF7048	Caspase 9 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
DF2284	CCNG2 Ab	Human, Mouse	WB,IF/ICC	♦♦
DF6024	CDK1/CDC2 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF6108	CDK1/CDC2 Ab	Human, Mouse, Rat	WB.IF/ICC	♦♦
AF7774	CDK1/CDC2 Ab	Human, Mouse, Rat	WB	♦♦
AF6237	CDK2 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
BF0053	CDK2.Ab	Hum à n, Mouse	WB,IHC,IF/ICC,ELISA,FACS	♦♦
DF6102	CDK4 Ab	Human, Mouse, Rat	WB,IHC	♦♦♦
AF4034	CDK4 Ab	Human	WB	♦♦
DF6448	CDK6 Ab	Human, Mouse, Rat	WB,IHC	♦♦
DF7222	CDK6 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF0228	CDKN2A/p16INK4a Ab	Human, Mouse	WB,IHC,IF/ICC	♦♦
AF5484	CDKN2A/p16INK4a Ab	Human, Mouse	WB,IF/ICC	♦♦
AF6007	Chk1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5014	Chk1 Ab	Human	WB,IF/ICC	♦♦
AF7022	Cleaved-Caspase 3 (Asp175), p17 Ab	Human, Mouse, Rat, Bovine	WB,IHC,IF/ICC	♦♦♦♦♦
BF0711	Cleaved-Caspase 3 (Asp175), p17 Ab	Human, Mouse, Rat	WB,IHC	♦♦
AF5267	Cleaved-Caspase 8 (Asp384), p18 Ab	Human,Rat	WB,IHC,IF/ICC	♦♦
AF4000	Cleaved-Caspase 9 (Asp315) Ab	Human	WB,IF/ICC	♦♦
AF5244	Cleaved-Caspase 9 (Asp330) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5240	Cleaved-Caspase 9 (Asp353) Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
AF6168	Cyclin B1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
DF6786	Cyclin B1 Ab	Humen, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF0931	Cyclin D1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦♦
DF6386	Cyclin D1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5410	Cyclin D2 Ab	Human, Mouse, Rat	WB,IF/ICC	♦♦
AF6251	Cyclin D3 Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
AF0144	Cyclin E1 Ab	Human, Mouse, Rat	WB,IHC,IF/ICC	♦♦
AF5454	Cyclin E2 Ab	Human, Mouse	WB,IHC,IF/ICC	♦♦
AF0146	Cytochrome C Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦♦
AF7004	Cytochrome C Ab	Human, Mouse, Rat, Monkey	WB,IHC,IF/ICC	♦♦
BF0714	Cytochrome C Ab	Human, Mouse, Rat, Rabbit	WB,IHC	♦♦

The Path of Research

Universal Biotechnology pvt. ltd.
www.unibiotech.in
info@unibiotech.in