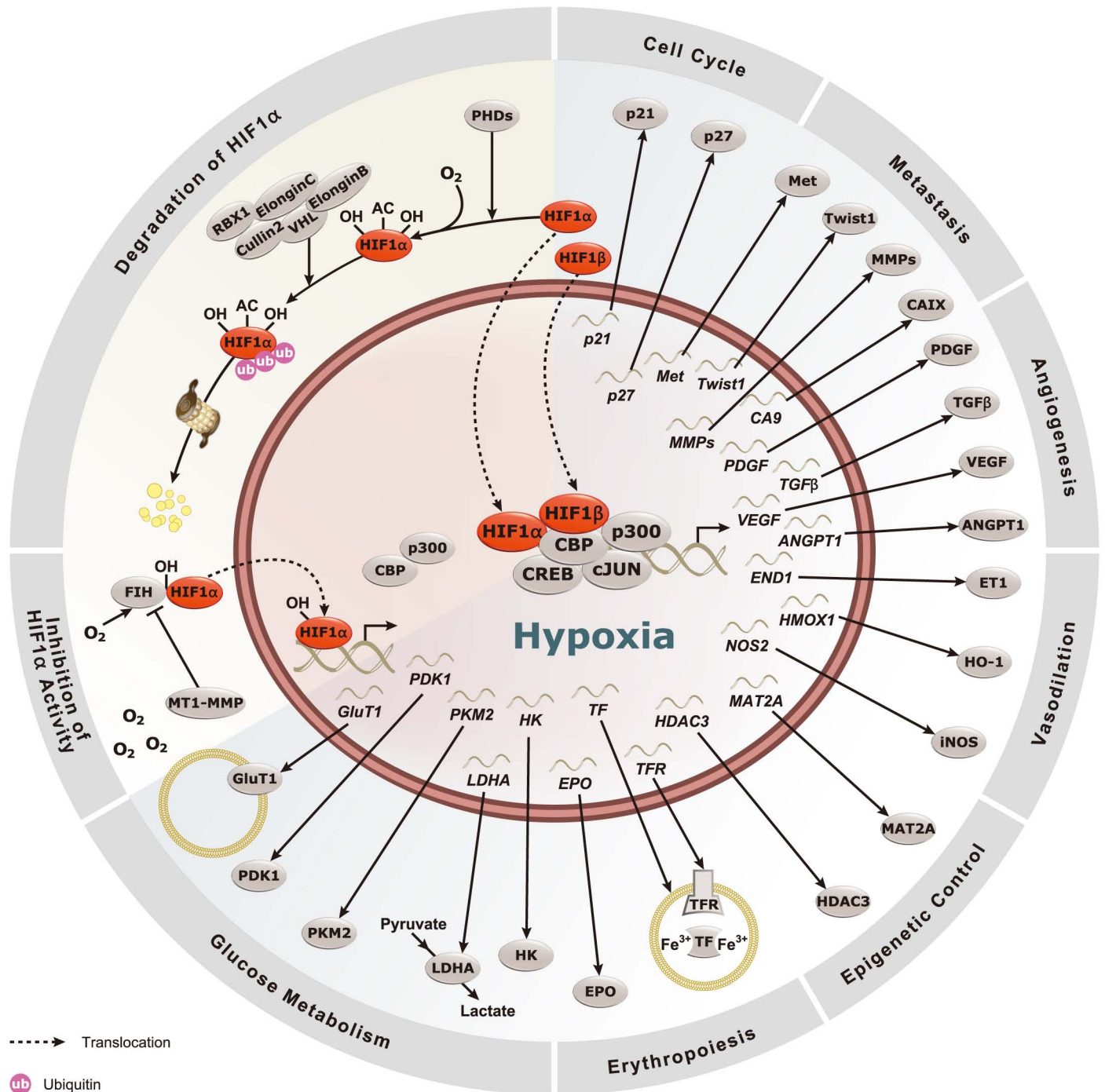




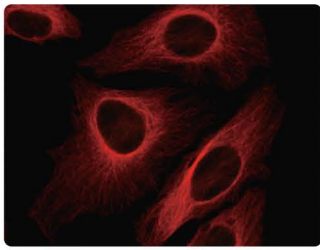
# Hypoxia Markers



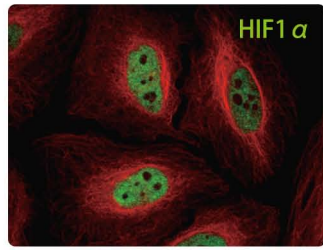
The development of complex anatomical and physiological systems to maintain oxygen homeostasis was an essential process in the evolution of metazoans. Hypoxia, defined as an insufficient oxygen supply to tissues, elicits a cellular response that hinges on the stabilization of hypoxia-inducible factors (HIFs). These transcription factors are subsequently able to accumulate in the nucleus and bind to DNA at “hypoxia response elements” (HREs) and subsequently drive either the expression (or, perhaps indirectly, the repression) of hundreds of genes. The cellular and physiological effects resulting from this hypoxia-dependent network have been clearly shown to impact a number of human pathological states, including ischemic disease, diabetes, pulmonary disease and, perhaps most notably, cancer. Thus, further research into the biomedical effects of hypoxia could lead to novel therapeutic approaches for these diseases.

## HIF1 $\alpha$ (GTX127309)

Normoxia



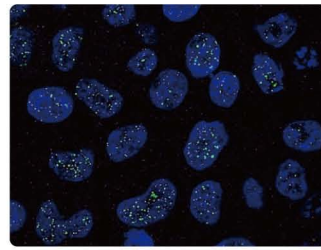
Hypoxia



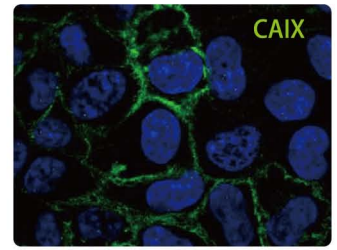
Confocal IF analysis of HeLa cells, untreated (left) or CoCl<sub>2</sub>-treated (right), using HIF1 $\alpha$  (green) and tubulin (red) antibodies.

## CAIX (GTX70020)

Normoxia



Hypoxia

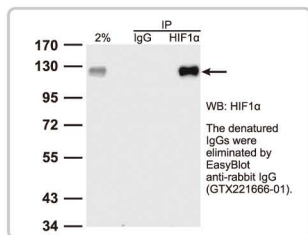


Confocal IF analysis of A431 cells, untreated (left) or CoCl<sub>2</sub>-treated (right), using CAIX antibody [GT12].

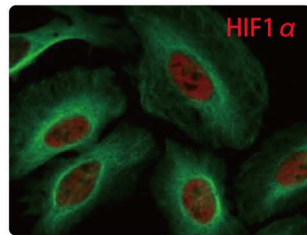
## Representative Publications

Cat. No.	Product name	Publication
GTX127309	HIF1 alpha antibody	<i>EMBO J</i> 2014; (Epub ahead of print)
GTX61608	HIF1 alpha antibody [EP1215Y], C-term	<i>PNAS</i> 2013; 110(30): 12331-6
GTX30114	HIF2 alpha antibody	<i>Nature</i> 2001; 414(6863): 550-4

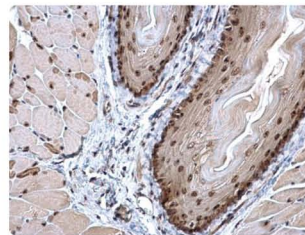
Cat. No.	Product name	Publication
GTX70020	CAIX antibody [GT12]	<i>PNAS</i> 2013; 110(30): 12331-6
GTX101087	VHL antibody	<i>Br J Pharmacol</i> 2013; 168(4): 920-31
GTX101135	c-Jun antibody [C1C3]	<i>Nucleic Acids Res</i> 2013; 41(3): 1533-43



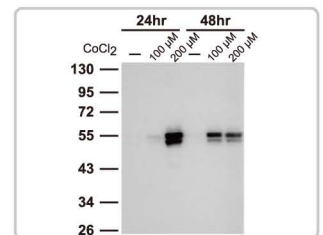
**HIF1 $\alpha$  antibody (GTX127309)**  
IP analysis of HIF1 $\alpha$  protein in HIF1 $\alpha$ -expressing HeLa cells. The precipitated HIF1 $\alpha$  was detected by the same HIF1 $\alpha$  antibody.



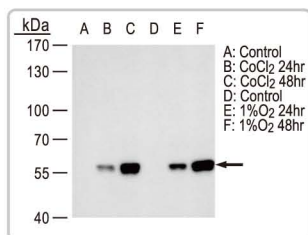
**HIF1 $\alpha$  antibody [GT10211] (GTX628480)**  
ICC/IF analysis of HIF1 $\alpha$  protein in HeLa cells treated with 500uM CoCl<sub>2</sub> for 24hr.



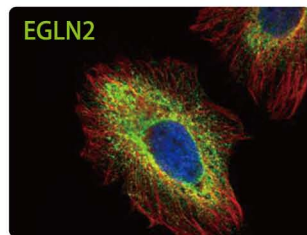
**HIF1 $\beta$  antibody (GTX128795)**  
IHC analysis of HIF1 $\beta$  in mouse esophagus.



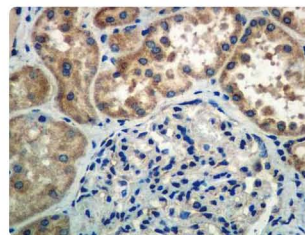
**CAIX antibody [GT12] (GTX70020)**  
WB analysis of CA9 expression in HeLa cells treated with CoCl<sub>2</sub>.



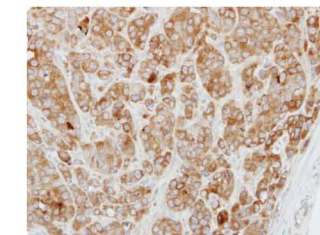
**CAIX antibody [GT14212] (GTX629747)**  
WB analysis of CAIX protein in HeLa whole cell lysate with indicated conditions.



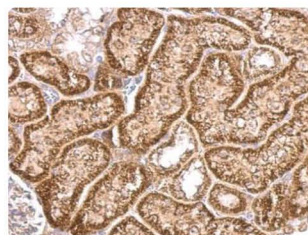
**EGLN2 (PHD1) antibody (GTX123033)**  
ICC/IF analysis of EGLN2 protein in HeLa cells.



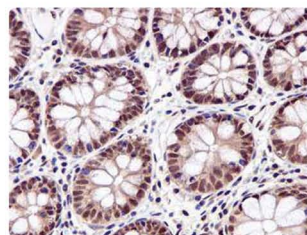
**PHD2 antibody [EPR3661] (GTX62885)**  
IHC analysis of PHD2 expression in human kidney tissue.



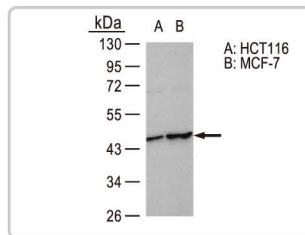
**PHD4 antibody (GTX116582)**  
IHC analysis of PHD4 expression in MCF7 xenograft.



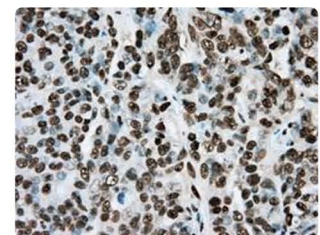
**VHL antibody (GTX101087)**  
IHC analysis of VHL expression in mouse kidney.



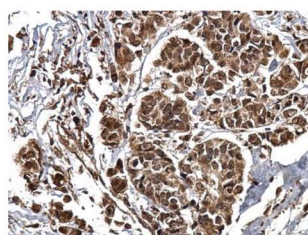
**RBX1 antibody (GTX63590)**  
IHC analysis of RBX1 expression in colon tissue.



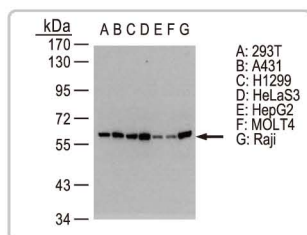
**FIH1 antibody (GTX116251)**  
WB analysis of FIH1 expression in HCT116 and MCF-7 cells.



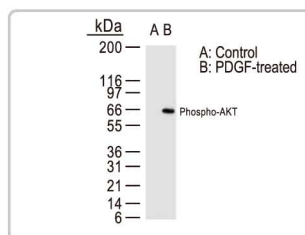
**ARNT antibody [1A1] (GTX84858)**  
IHC analysis of ARNT expression in human ovary tissue.



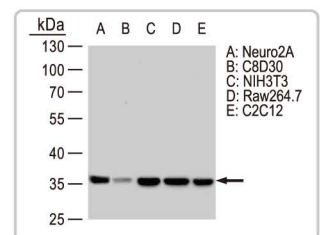
**CBP antibody [C3], C-term (GTX101249)**  
IHC analysis of CBP expression in human breast carcinoma.



**PKM2 antibody (GTX107681)**  
WB analysis of PKM2 protein in whole cell lysate.



**p-AKT1 (pSer473) antibody [104A282] (GTX11901)**  
WB analysis of phospho-Akt protein in NIH3T3 whole cell lysate.



**LDHA antibody (GTX101416)**  
WB analysis of LDHA protein in whole cell lysate.

## Hypoxia-inducible

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
Citation	GTX127309	HIF1 alpha antibody	Rb pAb	Hu, Ms	ICC/IF, IP, WB, ChIP assay
	GTX628480	HIF1 alpha antibody [GT10211]	Ms mAb	Hu	ICC/IF, IP, WB
Citation	GTX30105	HIF1 alpha antibody [H1alpha67]	Ms mAb	Hu, Ms, Mk, Pig, Rat, Frt, Rb, Shp	ICC/IF, IHC, IHC-Fr, IHC-P, IP, WB, ChIP assay
Citation	GTX30115	HIF1 alpha antibody [H1alpha67]	Ms mAb	Hu, Ms, Rat, Frt, Shp	ICC/IF, IHC, IHC-P, IP, WB
Citation	GTX30647	HIF1 alpha antibody	Rb pAb	Hu, Ms, Rat, NHuPm	ICC/IF, IHC, IHC-P, WB
	GTX128795	HIF1 beta antibody	Rb pAb	Hu, Ms	WB, IHC-P
	GTX30116	HIF1 beta antibody [H1beta234]	Ms mAb	Hu, Ms, Rat, Frt, Shp	IHC-P, WB
Citation	GTX103707	HIF2 alpha antibody [N1N3]	Rb pAb	Hu, Zfsh	WB, ChIP assay
	GTX128193	HIF2 alpha antibody	Rb pAb	Hu	IP, WB
Citation	GTX30114	HIF2 alpha antibody	Rb pAb	Hu, Ms, Rat, Fsh	ICC/IF, IHC, WB
Citation	GTX30123	HIF2 alpha antibody [ep190b]	Ms mAb	Hu, Ms, Rat	FACS, IHC, IHC-P, WB
	GTX85702	HIF3A antibody	Rb pAb	Hu, Ms, Rat	ELISA, ICC/IF, IHC-P, WB

## HIF Degradation

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
	GTX123033	PHD1 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX62409	PHD1 antibody [EPR2745]	Rb mAb	Hu, Ms, Rat	FACS, ICC/IF, IHC-P, WB
	GTX62319	PHD1 antibody [EPR2746]	Rb mAb	Hu, Ms, Rat	ICC/IF, IHC-P, IP, WB
	GTX39273	PHD1 antibody [PHD112/G7]	Ms mAb	Hu	IHC-P, WB
	GTX62885	PHD2 antibody [EPR3661], C-term	Rb mAb	Hu, Ms	FACS, ICC/IF, IHC-P, IP, WB
	GTX50009	PHD2 antibody [AT21E9]	Ms mAb	Hu	ELISA, ICC/IF, WB
	GTX88678	PHD3 antibody, Internal	Gt pAb	Hu	ELISA, WB
	GTX116582	PHD4 antibody	Rb pAb	Hu	IHC-P, WB
	GTX116581	PHD4 antibody [N2C2], Internal	Rb pAb	Hu	IHC-P, WB
	GTX62713	PHD4 antibody [EPR3664(2)]	Rb mAb	Hu	IHC-P, WB
	GTX116251	FIH1 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX62213	FIH1 antibody [EPR3658]	Rb mAb	Hu	FACS, ICC/IF, IHC-P, WB
Citation	GTX101087	VHL antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-P, IP, WB
Citation	GTX11189	VHL antibody [3F391]	Ms mAb	Hu	IHC, IHC-P, WB
	GTX110507	RBX1 antibody	Rb pAb	Hu, Ms	ICC/IF, WB
	GTX63590	RBX1 antibody [EPR6850(B)]	Rb mAb	Hu, Ms, Rat	FACS, ICC/IF, IHC, IHC-P, IP, WB
	GTX41325	Elongin C antibody	Chk pAb	Hu	WB
	GTX15194	Cullin 2 antibody (ready-to-use)	Rb pAb	Hu, Ms	IHC, IHC-P
	GTX21870	Cullin 2 antibody	Rb pAb	Ms	IHC-Fr, IHC-P, IP, WB

## HIF-related Transcription Factors

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
	GTX101249	CBP antibody [C3], C-term	Rb pAb	Hu, Ms, Mk	ICC/IF, IHC, IHC-P, IP, WB, ChIP assay
	GTX30619	p300 antibody [RW109]	Ms mAb	Hu, Ms, Mk, Rat, Mink	ICC/IF, IP, WB, ChIP assay
	GTX30614	EP300 antibody [RW128]	Ms mAb	Hu, Ms, Mk, Rat, Mink	ICC/IF, IP, WB
	GTX84858	ARNT antibody [1A1]	Ms mAb	Hu	FACS, ICC/IF, IHC, IHC-P, WB
Citation	GTX101135	c-Jun antibody [C1C3]	Rb pAb	Hu	WB
	GTX50408	CREB antibody	Rb pAb	Hu, Ms, Rat	IHC, IHC-P, WB
	GTX50296	CREB (phospho Ser129) antibody	Rb pAb	Hu, Ms, Rat	IHC, IHC-P, WB

## HIF Target Genes

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
	GTX113124	AHR antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX101073	AKT1 antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, WB
Citation	GTX110613	AKT1 antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, IP, WB
Citation	GTX11901	AKT1 (pSer473) antibody [104A282]	Ms mAb	Hu, Ms	ICC/IF, IP, WB
Citation	GTX61798	AKT1 (pThr308) antibody [EP2107Y]	Rb mAb	Hu, Ms	WB
	GTX52472	Angiopoietin-1 antibody [26B10]	Ms mAb	Hu	IHC, WB
Citation	GTX100927	Angiopoietin 2 antibody	Rb pAb	Hu	WB
	GTX100928	Angiopoietin 2 antibody	Rb pAb	Hu, Ms	IHC-P, WB
	GTX100991	Angiopoietin 2 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX100993	Angiopoietin 4 antibody	Rb pAb	Hu	IHC-P, WB
Citation	GTX109242	Arginase 1 antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, WB
	GTX111902	BNIP3 antibody [N1C1]	Rb pAb	Hu	WB
	GTX111876	BNIP3L antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, WB
Citation	GTX113039	Beclin 1 antibody	Rb pAb	Hu, Ms	IHC-P, WB

## HIF Target Genes

	<b>Cat. No.</b>	<b>Product name</b>	<b>Host &amp; Clonality</b>	<b>Reactivity</b>	<b>Application</b>
Citation	GTX70020	CAIX antibody [GT12]	Ms mAb	Hu	FACS, ICC/IF, IHC, IHC-P, IP, WB
	GTX629747	CAIX antibody [GT14212]	Ms mAb	Hu	ICC/IF, WB
	GTX102596	CD71 antibody [N2C1], Internal	Rb pAb	Hu, Ms	IHC-P, WB
	GTX41325	Elongin C antibody	Chicken pAb	Hu	WB
Citation	GTX116033	Endothelin 1 antibody [C1C3]	Rb pAb	Hu	ICC/IF, IHC, WB
	GTX10652	EPO antibody	Rb pAb	Hu	I-ELISA, IHC-P, WB
	GTX82784	EPO antibody [4F11]	Ms mAb	Hu	ELISA, ICC/IF, WB
	GTX15309	GLUT1 antibody	Rb pAb	Hu, Rat	ICC/IF, IHC-P, WB
Citation	GTX100684	GLUT1 antibody [C3], C-term	Rb pAb	Hu	ICC/IF, WB
	GTX101147	Heme Oxygenase 1 antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, WB
	GTX12220	Heme Oxygenase 1 antibody [GTS-1]	Ms mAb	Hu, Ms, Rat	ELISA, IHC-Fr, IHC-P, Inhib, WB
	GTX111525	Hexokinase II antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, WB
Citation	GTX31048	iNOS antibody	Rb pAb	Hu, Ms	ELISA, ICC/IF, IHC, IHC-P, WB
	GTX74171	iNOS antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-Fr, WB
	GTX113682	IRE1 alpha antibody [N1N2], N-term	Rb pAb	Hu	WB
	GTX101416	Lactate Dehydrogenase antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-P, WB
	GTX50001	LDHA antibody [AT1A4]	Ms mAb	Hu	ELISA, ICC/IF, WB
	GTX122936	LOX 1 antibody [N1C2]	Rb pAb	Hu	WB
Citation	GTX100637	MET antibody [C3], C-term	Rb pAb	Hu	ICC/IF, IHC-P, WB
Citation	GTX61603	MT1-MMP antibody [EP1264Y]	Rb mAb	Hu, Ms, Rat	FACS, ICC/IF, IHC-P, IP, WB
Citation	GTX121929	NOX4 antibody [N3C3]	Rb pAb	Hu	ICC/IF, IHC-P, WB
Citation	GTX100444	p21 antibody	Rb pAb	Hu	ICC/IF, WB
Citation	GTX112898	p21 antibody	Rb pAb	Hu, Chk	ICC/IF, IHC-P, WB
	GTX629627	p21 antibody [GT8611]	Ms mAb	Hu	ICC/IF, WB
	GTX629543	p21 antibody [GT1032]	Ms mAb	Hu	ICC/IF, IP, WB
Citation	GTX100446	p27 Kip1 antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, WB
Citation	GTX27961	p27 KIP1 antibody	Rb pAb	Hu, Ms, Rat	IHC, IHC-P, IP, WB
	GTX41234	PDGF beta antibody	Rb pAb	Hu, Ms, Cow, Dog, Rat, Cat, Hm, Shp	IHC, IHC-P
	GTX100683	PDGFB antibody	Rb pAb	Hu	IHC-P, WB
	GTX107405	PDK1 antibody	Rb pAb	Hu, Ms	ICC/IF, WB
Citation	GTX107614	PGK1 antibody	Rb pAb	Hu, Ms, Rat, Yeast	ELISA, ICC/IF, IHC-P, WB
	GTX107977	PKM2 antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-P, WB
	GTX107681	PKM2 antibody	Rb pAb	Hu, Ms, Rat	IHC-P, WB
	GTX124407	Pkm2a antibody	Rb pAb	Zfsh	IHC-P, WB, IHC-Wm
	GTX111209	STEP / PTPN5 antibody [C1C3]	Rb pAb	Hu, Ms	IHC-P, WB
Citation	GTX110630	TGF beta 1 antibody	Rb pAb	Hu, Ms, Rat	IHC-P, WB
	GTX15539	TGF beta 2 antibody	Rb pAb	Hu, Ms, Rat	IHC, IHC-P, IP, WB
	GTX129091	TGF beta 3 antibody	Rb pAb	Hu, Ms	IHC-P, WB
Citation	GTX76527	TGF beta antibody [TB21]	Ms mAb	Hu, Rat, Shp	IHC, IHC-Fr, IHC-P
Citation	GTX21279	TGF beta antibody [TB21]	Ms mAb	Hu	ELISA, ICC/IF, IHC, IHC-Fr, IHC-P, Neut, WB
Citation	GTX21223	Transferrin antibody	Rb pAb	Hu	ELISA, IP, WB
	GTX101035	Transferrin antibody [N3C3]	Rb pAb	Hu	WB
Citation	GTX29179	Transferrin receptor antibody [MEM-75]	Ms mAb	Hu	FACS, ICC/IF, IP
	GTX38901	Transferrin Receptor antibody [R17217.1.4]	Rat mAb	Ms	FACS, IHC, IP
	GTX29570	VEGF antibody	Rb pAb	Hu	ELISA, Neut, WB
	GTX61510	VEGF antibody [EP1176Y], C-term	Rb mAb	Hu, Ms	FACS, ICC/IF, IHC, IHC-P, IP, WB
	GTX21316	VEGF antibody [VG1]	Ms mAb	Hu	IHC, IHC-P
	GTX102643	VEGFA antibody	Rb pAb	Hu	IHC-P, WB



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