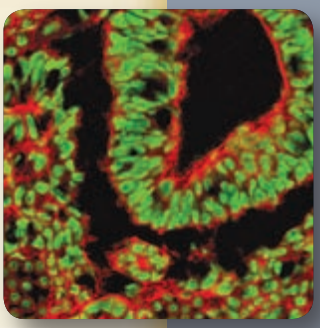
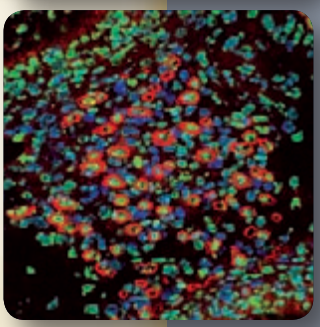
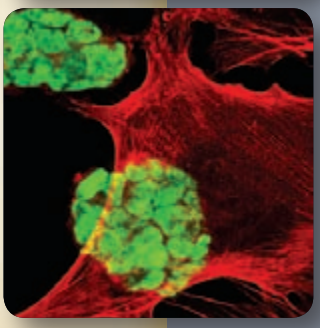
Antibodies and Kits for the Study of

Stem Cells







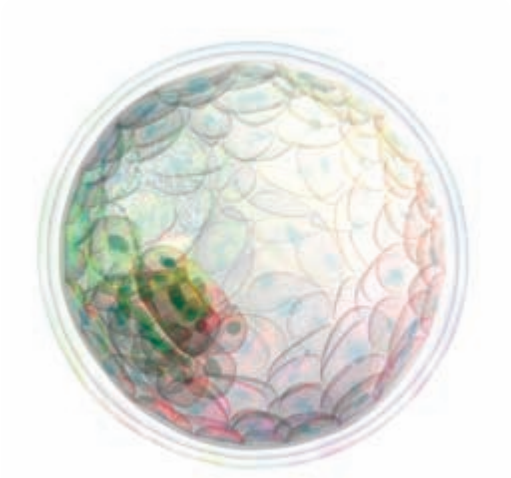
Cell Signaling TECHNOLOGY®

Antibodies and Kits for the Study of

Stem Cells

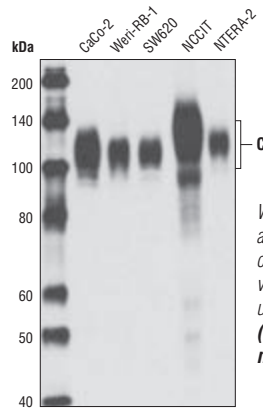
As a company driven by science, Cell Signaling Technology®'s (CST's) goal is to accelerate biomedical research by developing research tools that will lead to your experimental success. CST provides the highest quality antibodies available for the study of signaling pathways. CST's antibodies have been extensively validated by our in-house clinical applications group for applications including immunohistochemistry, immunofluorescence, ELISA, flow cytometry and drug discovery technologies. Furthermore, technical support is provided by the same scientists who produce and validate our products and know them best. CST's phosphorylation-specific antibodies are the most highly cited and serve as core reagents found in multiple drug discovery platforms.

We are continuously expanding our development of stem cell related products. In addition to stem cell markers and epigenetic marks, we also offer hundreds of additional products which are directed against components of critical pathways involved in stem cell regulation including: FGF Receptor, TGF-β, Wnt, Jak/Stat, and Hedgehog Signaling. For a complete product listing please visit **www.cellsignal.com**.

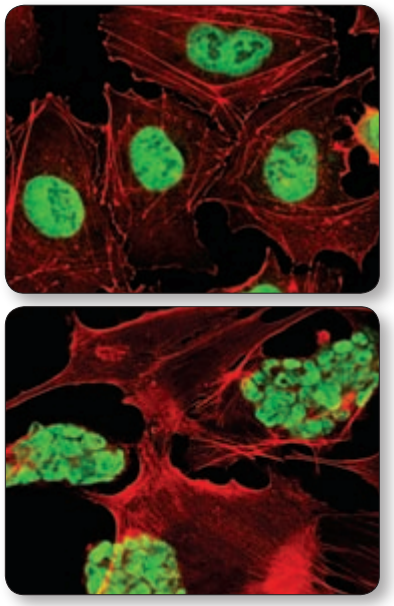


About the Cover:

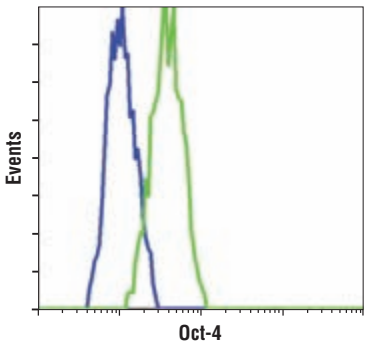
A blastocyst-stage embryo displaying the inner cell mass - a key source of pluripotent embryonic stem cells.



*Western blot analysis of total cell lysates from various cell types using **CD133 (C24B9) Rabbit mAb #3663**.*



*Confocal immunofluorescent analysis of NTERA-2 (upper) and mouse embryonic stem cells growing on mouse embryonic fibroblast (MEF) feeder cells (lower) using **Oct-4 (C30A3) Rabbit mAb #2840** (green). Actin filaments have been labeled with DY-554 phalloidin (red).*



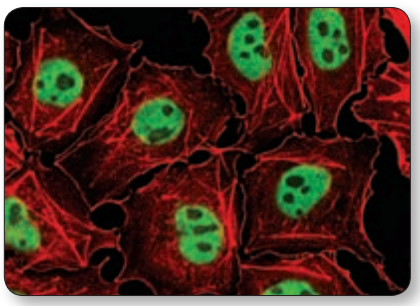
*Flow cytometric analysis of HeLa cells (blue) and NCCIT cells (green) using **Oct-4 (C30A3) Rabbit mAb #2840**.*

APPLICATIONS: **W** Western / **IP** Immunoprecipitation / **IHC** Immunohistochemistry (**IHC-P** Paraffin, **IHC-F** Frozen) / **IC** Immunocytochemistry
IF Immunofluorescence (**IF-IC** Immunocytochemistry, **IF-P** Paraffin, **IF-F** Frozen) / **F** Flow Cytometry / **E-P** Peptide ELISA / **D** DELFIA

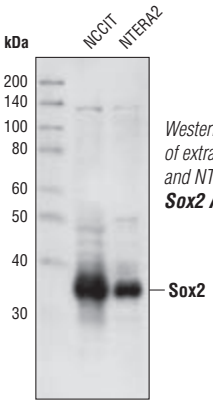
REACTIVITY: **H** human / **M** mouse / **R** rat / **Hm** hamster / **Mk** monkey / **C** chicken / **Dr** Drosophila / **X** Xenopus / **B** bovine / **All** all species expected / **( )** 100% sequence homology

Stem Cell Markers

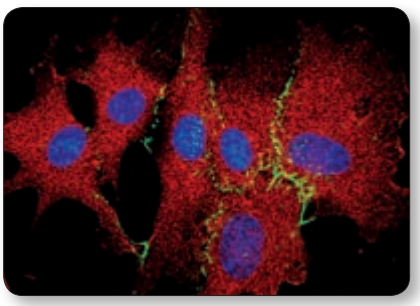
	No.	Antibody	Application	Reactivity	Lineage	Stage	Description
	3663	CD133 (C24B9) Rabbit mAb *-featured*	W, IP, IHC-P, F	H	early embryo, mesoderm, ectoderm	blastocyst, hematopoietic stem cells, neuronal stem cells	Five-transmembrane glycosylated cell-surface protein initially described as a hematopoietic stem cell marker. Also expressed in and used to identify neuronal, cancer and embryonic stem (ES) cells.
NEW	2840	Oct-4 (C30A3) Rabbit mAb *-featured*	W, IF-IC, F	H, M	early embryo	blastocyst	Transcription factor expressed in undifferentiated pluripotent ES cells and germ cells during normal development. Together with Sox2 and Nanog, is necessary for the maintenance of pluripotent potential.
NEW	2890	Oct-4 (C52G3) Rabbit mAb *-featured*	W, IHC-P, IF-IC, F	H			
	2750	Oct-4 Antibody	W, IHC-P, IF-IC, F	H			
NEW	2788	Oct-4 (V41) Antibody	W	H, M, (Mk)			
NEW	2093	SCF (C19H6) Rabbit mAb	IP, IF	H, M, Mk	early embryo	blastocyst	Mediates biological effects by binding to and activating c-kit. Promotes proliferaton of ES cells and hematopoetic stem cells. Essential for hematopoiesis, melanogenesis and fertility.
	2273	SCF Antibody	W	H			
	2748	Sox2 Antibody *-featured*	W, IP	H, M	early embryo	blastocyst	Transcription factor expressed in undifferentiated pluripotent ES cells and germ cells during development. Together with Oct-4 and Nanog, is necessary for the maintenance of pluripotent potential.
	3670	GFAP (GA5) Mouse mAb	W, IP, IHC-P, IF-F	H, M, R	ectoderm	neural stem cell/ ectodermal progenitor	Marker protein specifically expressed in astrocytes.
	4706	Integrin β1 Antibody	W	H, M, R, Mk, Hm	ectoderm	bulge stem cell/ mesenchymal stem cell	Cell adhesion molecule important in cell adhesion and migration. Marker expressed in mesenchymal stem cells, bulge stem cells and during liver development.
	2274	MELK Antibody	W, IP	H, M, Dr	ectoderm	neural stem cell	Implicated in stem cell renewal, cell cycle progression and pre-mRNA splicing. Marker for neural progenitors.
	2154	Musashi Antibody	W, IF-F	H, M, R	ectoderm	neural stem cell	RNA-binding protein that regulates the translation of target mRNA during asymmetric cell division of ectodermal precursor cells. Marker for proliferating neural precursor cells. Expressed in epithelial stem cells including intestinal and mammary gland stem cells.
	9402	c-Myc Antibody	W, IP	H, M, R	ectoderm	neural stem cells	Oncogene which is a key regulator of stem cell renewal, has been found sufficient to reprogram human and mouse fibroblasts to pluripotent phenotype equivalent to ES cells, potential cancer stem call marker.
	2421	Cleaved Notch1 (Val1744) Antibody	W, IP	H, M, R, Mk	ectoderm	neural stem cells	Notch1 is a transmembrane protein functioning in development and the determination of cell-fate. During maturation, the notch molecule is cleaved by a furin-like convertase at its extracellular domain. Upon binding to a ligand such as Delta1, or upon extracellular calcium depletion, the carboxy-terminal notch1 fragment is released and further cleaved between Gly1743 and Val1744. The resulting activated cytosolic fragment translocates to the nucleus where it activates transcription.
	2495	Notch1 (65A1) Rabbit mAb	W	H, M, (R, Mk)			



*Confocal immunofluorescent analysis of NTERA2 cells using **Oct-4 (C52G3) Rabbit mAb #2890** (green). Actin filaments have been labeled with DY-554 phalloidin (red).*



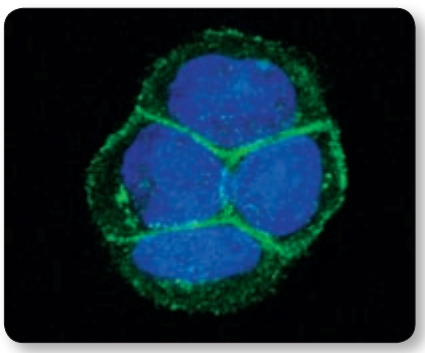
*Western blot analysis of extracts from NCCIT and NTERA-2 cells using **Sox2 Antibody #2748**.*



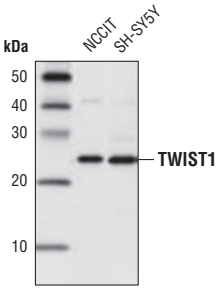
*Confocal IF analysis of HUVEC cells using **VE-Cadherin Antibody #2158** (green) and MEK1/2 (L38C12) Mouse mAb #4694 (red). Blue pseudocolor = DRAQ5™ (fluorescent DNA dye).*

Stem Cell Markers

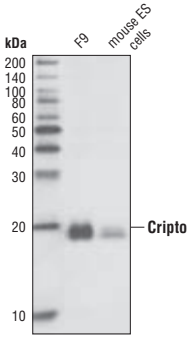
	No.	Antibody	Application	Reactivity	Lineage	Stage	Description
	2137	AFP Antibody	W, IP	H, M	endoderm	oval and crypt stem cells	Glycoprotein found in serum of mammalian fetal liver, yolk sac and GI tract. Expressed during development of the primitive endoderm. Marker for endodermal differentiation from pluripotent stem cells.
	3195	E-Cadherin (24E10) Rabbit mAb	W, IHC-P, IHC-F, IF-IC	H, M	mesoderm	mesenchymal stem cells	Cadherins mediate calcium-dependent cell-cell adhesion and play critical roles in normal tissue development.
	3199	E-Cadherin (24E10) Rabbit mAb (Alexa Fluor® 488 Conjugate)	IF-IC, IF-P, F	H, (M)			
	4065	E-Cadherin Antibody	W, IP, IHC-P, IF-IC	H, M, (B)			
	2158	VE-Cadherin Antibody ***-featured***	W, IP, IF-IC	H, B	mesoderm	hematopoietic stem cell	Adhesion molecule expressed in embryonic (not adult) hemato-poietic stem cells. Also expressed in vascular smooth muscle cells.
	3569	CD34 (ICO115) Mouse mAb	IHC-P, F	H	mesoderm	hematopoietic stem cell	Transmembrane glycophosphoprotein expressed in hematopoietic stem cells, vascular endothelium and some fibroblasts.
	4115	CDCP1 Antibody ***-featured***	W, IP, IF-IC	H	mesoderm	hematopoietic stem cell	Multidomain membrane glycoprotein highly expressed in some human cancer cells and in both typical and atypical (cancerous) colon. May be epigenetically regulated. Putative hematopoetic stem cell marker.
	3392	c-Kit Antibody	W	H	mesoderm	hematopoietic stem cell	Receptor tyrosine kinase that plays a critical role in cell growth and proliferation in hematopoietic stem cells, mast cells, melanocytes and germ cells. Binding of its ligand (SCF) to c-kit initiates proliferation and differentiation of hematopoietic progenitor cells. Hematopoietic stem cell marker.
	3308	c-Kit (Ab81) Mouse mAb	W, IP, F	H			
	3310	c-Kit (Ab81) Mouse mAb (Alexa Fluor® 488 Conjugate)	IF-IC, F	H			
	2266	PU.1 Antibody	W, IP, IHC-P, IF-IC, F	H, M, (Mk)	mesoderm	hematopoietic stem cell	Member of the Ets family of transcription factors that plays a pivotal role in the differentiation of myeloid cells and lymphocytes. Expressed in several hematopoietic cells including B lymphocytes, macrophages, neutrophils, mast cells, early erythroid cells and megakaryocytes. Critical for both determination of hematopoietic cell lineage and regulation of differentiation vs. stem cell proliferation.
	2258	PU.1 (9G7) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, (Mk)			
	2216	PU.1 (9G7) Rabbit mAb (Alexa Fluor® 488 Conjugate)	F	H, M			
	2240	PU.1 (9G7) Rabbit mAb (Alexa Fluor® 647 Conjugate)	F	H, M			
	4119	TWIST1 Antibody ***-featured***	W, IP	H, Mk	mesoderm	neural crest stem cell	Basic helix-loop-helix transcription factor that functions as a master regulator of embryonic morphogenesis. Plays essential roles in mesenchymal differentiation and osteogenic determination. Also plays critical role in neural crest formation and is a marker for neural crest stem cells. Upregulated in various human tumors and may play a role in EMT and metastasis.
NEW	2818	Cripto Antibody (Mouse Specific) ***-featured***	W, IP, IF-IC, IF-F	M	ectoderm, mesoderm	neural stem cell, cardiac progenitor	Involved in cardiomyoctye differentiation, overexpressed in some cancers.
	2149	TAZ Antibody	W	H, M	mesoderm	cardiac progenitor, mesenchymal stem cell	TAZ is a transcriptional coactivator proposed to modulate the switch between proliferation and differentiation of mesenchymal stem cells via interaction with transcription factors Runx2 and PPARγ.



*Confocal immunofluorescent analysis of HT-29 cells using **CDCP1 Antibody #4115** (green). Blue pseudocolor = DRAQ5™ (fluorescent DNA dye).*



*Western blot analysis of extracts from NCCIT and SH-SY5Y cells using **TWIST1 Antibody #4119**.*



*Western blot analysis of extracts of F9 and mouse embryonic stem cells using **Cripto Antibody (Mouse Specific) #2818**.*

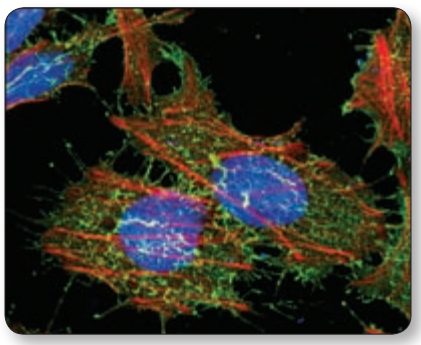
Applications and Reactivity Key, page 2.

Cancer Stem Cell Markers

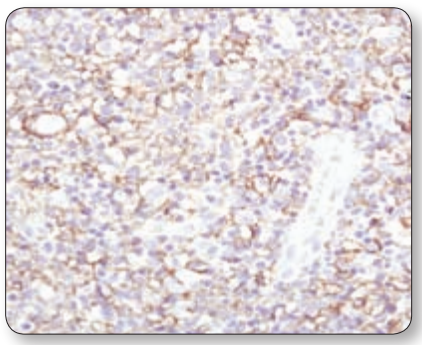
Tumors contain a small percentage of cells with the ability to self renew and differentiate. These cells are known as cancer stem cells and they have specific patterns of gene expression that allow them to replicate continuously.

No.	Antibody	Application	Reactivity	Cancer Type
3202	Androgen Receptor Antibody	W	H	prostate
2830	Bmi1 Antibody	W, IF-IC	H, R, Mk, (B)	leukemia
9587	β-Catenin Antibody (Carboxy-terminal antigen) *	W, IP, IHC-P, IHC-F, IF-F, F	H, M, Mk, Mi, Hm, B	prostate
3578	CD44 Antibody	W	H	breast, colorectal, small cell lung cancer, head and neck
3570	CD44 Antibody (156-3C11) Mouse mAb ***-featured***	W, IP, IHC-P, IF-IC, F	H	
3516	CD44 (156-3C11) Mouse mAb (Alexa Fluor® 488 Conjugate)	F	H	
3663	CD133 (C24B9) Rabbit mAb	W, IP, IHC-P, F	H	glioma, NSCLC, prostate
2643	GLI-1 (L42B10) Mouse mAb *	W, IP	H	glioma
2585	GLI-2 (R770) Antibody	W, IP	H	glioma
2274	MELK Antibody	W, IP	H, M, Dr	breast, glioma
2154	Musashi Antibody	W, IF-F	H, M, R	glioma
2421	Cleaved Notch1 (Val1744) Antibody	W, IP	H, M, R, Mk	squamous cell carcinoma
2495	Notch1 (65A1) Rabbit mAb	W	H, M, (R, Mk)	squamous cell carcinoma
9402	c-Myc Antibody *	W, IP	H, M, R	prostate
2840	Oct-4 (C30A3) Rabbit mAb	W, IF-IC, F	H, M	bladder, seminoma
2890	Oct-4 (C52G3) Rabbit mAb	W, IHC-P, IF-IC, F	H	
2750	Oct-4 Antibody	W, IHC-P, IF-IC, F	H	
2788	Oct-4 (V41) Antibody	W	H, M, (Mk)	
4904	Stat3 (79D7) Rabbit mAb *	W, IP, IHC-P	H, M, R, Mk	bone sarcoma
2149	TAZ Antibody	W	H, M	breast

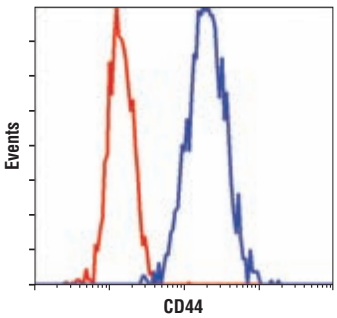
* for additional antibodies directed against these targets, please visit: www.cellsignal.com.



*Confocal immunofluorescent analysis of HeLa cells using **CD44 (156-3C11) Mouse mAb #3570** (green). Actin filaments have been labeled with Alexa Fluor® 555 phalloidin (red). Blue pseudocolor = DRAQ5™ (fluorescent DNA dye).*

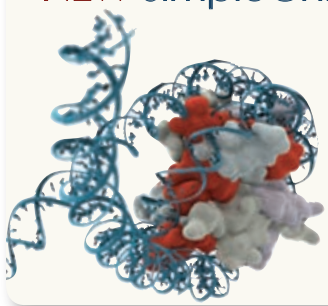


*Immunohistochemical analysis of human Non-Hodgkin's lymphoma using **CD44 (156-3C11) Mouse mAb #3570**.*



*Flow cytometric analysis of HeLa cells using **CD44 (156-3C11) Mouse mAb #3570** (blue) compared to a nonspecific negative control antibody (red).*

NEW SimpleChIP™ Enzymatic Chromatin Immunoprecipitation Kits



CST has now extended its expertise in antibody validation to provide you with antibodies, kits and reagents for chromatin immunoprecipitation (ChIP). Many of our antibodies directed against methylated histones have been validated for ChIP. (see page 6)

NEW	9002	SimpleChIP™ Enzymatic Chromatin IP Kit (Agarose Beads)
NEW	9003	SimpleChIP™ Enzymatic Chromatin IP Kit (Magnetic Beads)
NEW	9007	ChIP-Grade Protein G Agarose Beads
NEW	9006	ChIP-Grade Protein G Magnetic Beads
NEW	7017	6-Tube Magnetic Separation Rack

For a complete listing of our ChIP validated antibodies please visit www.cellsignal.com.

Epigenetic Regulators & Marks

DNA Methylation

		Antibody	Application	Reactivity	Description
	2160	DNMT3A Antibody	W, IP	H, M, R, Mk, (B)	De novo methyltransferases (DNMT) methylate previously unmethylated regions of DNA and are strongly expressed in ES cells with reduced expression in adult somatic tissues. Dnmt1, Dnmt3A and Dnmt3B form a complex that interacts with histone deacetylases (HDAC1, HDAC2, Sin3A), transcriptional repressor proteins (RB, TAZ-1) and heterochromatin proteins (HP1, SUV39H1) to maintain proper levels of DNA methylation and facilitate gene silencing. Mutation blocks de novo methylation in ES cells and early embryos, and the ability to differentiate is at least partially blocked in culture, but cells remain viable as pluripotent ES cells.
	2161	DNMT3B Antibody	W, IP	H, M, R, Mk, (Z)	

Histone Modification/ Modifying Enzymes

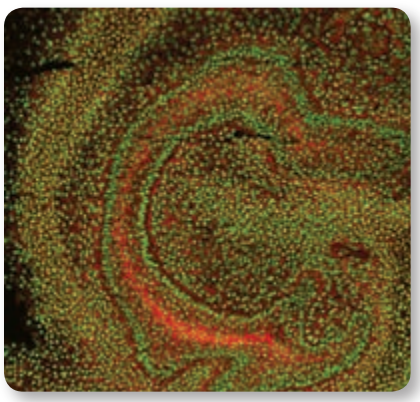
		Antibody	Application	Reactivity	Description
NEW	9847	Methyl-Histone H3 Antibody Sampler Kit			
	9725	Di-Methyl-Histone H3 (Lys4) (C64G9) Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (All)	Di- and tri-methyl-histone-H3 (Lys4) modifications correlate with active genes in euchromatin. In ES cells, methyl-histone-H3 (Lys4) is found on active genes and "bivalently" modified lineage-control genes, which contain both active methyl-histone-H3 (Lys4) and repressive methyl-histone-H3 (Lys-27) marks. Methyl-histone-H3 (Lys4) marks are added to chromatin by several histone methyltransferases, including MLL1, SET1 and SET7/SET9.
NEW	9726	Di-Methyl-Histone H3 (Lys4) Antibody	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (All)	
NEW	9751	Tri-Methyl-Histone H3 (Lys4) (C42D8) Rabbit mAb ***-featured***	W, IP, IHC-P, IF-IC, IF-F, ChIP	H, M, R, Mk, (All)	
	9727	Tri-Methyl-Histone H3 (Lys4) Antibody	W, IHC-P, IF-IC	H, M, R, Mk, (All)	
	9753	Di-Methyl-Histone H3 (Lys9) Antibody	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (All)	Di-methyl-histone-H3 (Lys9) is associated with transcriptional silencing of pericentric heterochromatin, X chromosome inactivation and transcriptional repression of active genes. This modification leads to binding of HP1 proteins and recruitment of various heterochromatin promoting activities. Methyl-histone-H3 (Lys9) marks are added to chromatin by several histone methyltransferases, including SUV39H1/H2, ESET and G9a.
	4069	Pan-Methyl Histone H3 (Lys9) Antibody	W, IP, IF-IC, ChIP	H, M, R, Mk, (All)	
	9755	Di-Methyl-Histone H3 (Lys27) Antibody	W, IP, IF-IC	H, M, R, Mk, (All)	Tri-methyl-histone-H3 (Lys27) is associated with X chromosome inactivation, genomic imprinting and silencing of HOX gene expression during development. This modification leads to binding of the polycomb repressive complex 1 (PRC1) and recruitment of heterochromatin promoting activities. In ES cells, many lineage control genes are "bivalently" modified with both active methyl-histone-H3 (Lys4) and repressive methyl-histone-H3 (Lys27) marks. Methyl-histone-H3 (Lys27) marks are added to chromatin by the Ezh2 histone methyltransferase.
NEW	9756	Tri-Methyl-Histone H3 (Lys27) Antibody ***-featured***	W, IP, IHC-P, IF-IC, IF-F, ChIP	H, M, R, Mk (All)	
NEW	2901	Di-Methyl-Histone H3 (Lys36) (C75H12) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk (All)	The function of methyl-H3 (Lys36) is not well known. In yeast, Set2 is responsible for Lys36 methylation. JMJD1 has been found to demethylate this residue.
	9674	Acetyl-Histone H3 (Lys23) Antibody	W, IHC-P	H, M, R	Acetylated histones are associated with euchromatic regions of the genome. In ES cells, these marks are found in the promoter regions of active genes such as Oct-4 and Nanog.
	9649	Acetyl-Histone H3 (Lys9) (C5B11) Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, (R, Mk)	
	9671	Acetyl-Histone H3 (Lys9) Antibody	W, IP, IHC-P	H, M, R	
	2591	Acetyl-Histone H4 (Lys12) Antibody	W, IHC-P	H, M, R, Mk	
	2594	Acetyl-Histone H4 (Lys8) Antibody	W, IHC-P	H, M, R, Mk	
NEW	2830	Bmi1 Antibody	W, IF-IC	H, R, Mk, (B)	Component of the polycomb group complex PRC1 that plays an important role in the regulation of cell proliferation and senescence through repression of the p16Ink4a and p19Arf genes. Required for maintenance of adult hematopoietic and neural stem cells.
	2196	ESET (C1C12) Rabbit mAb	W, IP, IF-IC	H, Mk	Histone lysine methyltransferase that methylates histone H3 (Lys9), creating a binding site for HP1 proteins and facilitating gene silencing. Functions mainly in euchromatin to repress gene promoters and interacts with a variety of repressor proteins including HDAC1/2 and DNMT3A/B. Mutation results in peri-implantation lethality and defects on inner cell mass (ICM) outgrowth. No ESET(-/-) ES cells are obtained, indicating ESET requirement for for peri-implantation development and ES cell survival.
	4905	Ezh2 Antibody	W, IP	H, M, R	Enhancer of zeste homolog 2 is involved in X chromosome inactivation, genomic imprinting and repression of HOX genes during development. Methylates histone H3 (Lys27), creating a transcriptionally repressive mark that recruits PRC1 complex and facilitates gene silencing. Mutation results in peri-implantation lethality and growth defect of the primitive ectoderm. No ES cells were obtained due to impaired outgrowth potential, suggesting important role during early development and ES survival.
	3147	Ezh2 (AC22) Mouse mAb	W, IP, IF-IC	H	
NEW	3306	G9a/EHMT2 (C6H3) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (B)	G9a, also known as Euchromatic histone-lysine N-methyltransferase 2 (EHMT2), is a member of a family of histone lysine methyltransferases, each of which contains a conserved catalytic SET domain. Forms a complex with GLP, a G9a-related histone methyltransferase *in vivo*. Together these proteins function as the major euchromatic H3 Lys9 mono- and di-methyltransferases, creating transcriptionally repressive marks. G9a (-/-) ES cells exhibited decreased H3 Lys9 methylation, mainly in euchromatin.

Applications and Reactivity Key, page 2.

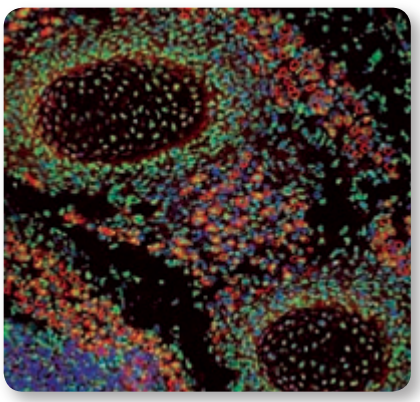
Epigenetic mechanisms include post-translational modifications to histones and DNA methylation of CpG nucleotides, and have been implicated in the regulation of gene activation and silencing through chromatin remodeling.

Histone Modification/ Modifying Enzymes

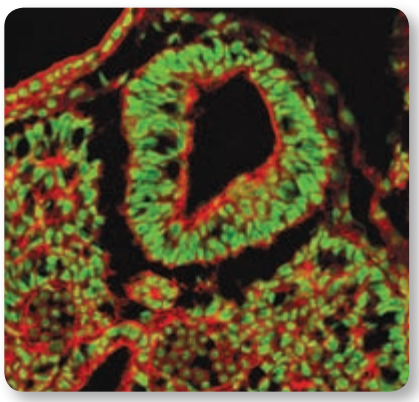
		Antibody	Application	Reactivity	Description
	2062	Histone Deacetylase 1 (HDAC1) Antibody	W, IP	H, M, R, Mk	Deacetylates histones and functions as a transcriptional corepressor that regulates cell proliferation. Interacts with other repressor proteins, including RB1, DNMT1 and DNMT3A/3B. Mutation results in embryonic lethality before E10.5 due to severe proliferation defects and delayed development. HDAC1(-/-) ES cells display decreased rates of proliferation.
NEW	2540	HDAC2 Antibody	W, IF-IC	H, M, R, Mk	Important for fetal cardiac development.
NEW	2545	HDAC2 Antibody (IP Preferred)	W, IP	H, M, Mk	
	2616	HP1α Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, (B)	Heterochromatin proteins 1α, β and γ are heterochromatic adaptor molecules that bind to methyl-histone-H3 (Lys9) and regulate gene silencing and higher order chromatin structure. HP1 α, β and γ are primarily associated with centromeric heterochromatin. HP1β and γ also localize to euchromatic sites. Interact with other repressor proteins, including SUV39H1/H2, DNMT1, DNMT3a, RB1 and E2F6.
	2623	HP1α (C7F11) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk	
	2613	HP1β Antibody	W	H, M, R, Mk, (B)	
NEW	2600	Phospho-HP1γ (Ser83) Antibody	W, IP, IF-IC	H, M, R, Mk, (B, Dr)	
	2619	HP1γ Antibody	W, IP, IF-IC, F	H, M, R, Mk	
NEW	2621	JMJD1B/JHDM2B Antibody	W, IP, IF-IC	H, M, R, Mk	Jumonji C domain-containing proteins represent the largest class of potential histone demethylase proteins. The JmjC domain of several proteins has been shown to catalyze the demethylation of mono-, di-, and tri-methyl lysine residues. JmJD1A is expressed in meiotic and post-meiotic male germ cells, contributes to androgen receptor-mediated gene regulation, and is required for spermatogenesis. It has been identified as a downstream target of Oct-4 and Stat3 and is critical for the regulation of self-renewal in ES cells.
NEW	2898	JMJD2B Antibody	W, IP	H, (Mk)	
	2184	LSD1 (C69G12) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk	Lysine-specific demethylase 1 is a component of the CoREST transcriptional co-repressor complex containing CoREST, CtBP, HDAC1 and HDAC2. Also associates with androgen receptor to facilitate transcriptional activation. Demethylates mono-methyl and di-methyl H3 (Lys4 and Lys9). Regulates neuronal gene expression and neuronal stem cell fate.
	2139	LSD1 Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk	
	4064	LSD1 (1B2E5) Mouse mAb	W	H, M, R, Mk	
NEW	2828	MEP50 (P328) Antibody	W, IP	H	Methylosome protein 50, a component of the methylosome, a protein arginine methyltransferase complex that modifies specific arginine residues found in arginine-and glycine- rich regions of some spliceosomal Sm proteins. Interacts with Suz12.
NEW	2823	MEP50 Antibody	W, IP, IF-IC	H	
	2453	PRMT1 (F339) Antibody	W	H, M, R, Mk, (B)	Protein arginine N-methyltransferase 1. Catalyzes formation of mono-methyl arginine and asymmetric di-methyl arginine. Methylates arginine residues found within glycine-arginine rich (GAR) domains of proteins. Mutation results in embryonic lethal postimplantation and PRMT1(-/-) ES cells are viable but hypomethylated, indicating PRMT1 is a critical methyltransferase in ES cells.
	2449	PRMT1 (A33) Antibody	W, IP, IF-IC	H, M, R, Mk, (B)	
NEW	2825	SET7/SET9 (C24B1) Rabbit mAb	W	H, M, R, Mk	Member of the SET domain-containing family, methylates Lys4 on histone H3, contains conserved SET domain, also methylates Lys189 of TAF10 protein, member of TFIID complex, leading to transcriptional activation. Also methylates Lys372 of the tumor suppressor p53 and stabilizes it.
	2991	SUV39H1 Histone Methyltransferase Antibody	W	H	Histone lysine methyltransferase that methylates histone H3 (Lys9), generating a binding site for HP1 proteins and facilitating gene silencing. Important for formation and maintenance of pericentric heterochromatin and transcriptional repression of euchromatic genes. Loss of both gene copies results in impaired cell viability, increased chromosomal instability, impaired chromosome pairing during male meiosis and male sterility.
NEW	3737	SUZ12 (D39F6) Rabbit mAb ***-featured***	IP, IF-F, IF-IC	H, M, Mk	Suz12 is a component of the Polycomb group PRC2 and 3 complexes which contain Ezh2 and is essential for complex stability. Mutation results in embryonic lethality at the postimplantation stage. Suz12 -/- ES cells display loss of H3 lys27 trimethylation as well as increased expression of differentiation specific genes and are incapable of proper differentiation.



*Confocal immunofluorescent analysis of the nasal cavity in an E14.5 mouse embryo using **Tri-Methyl-Histone H3 (Lys4) (C42D8) Rabbit mAb #9751** (green). Actin filaments have been labeled with DY-554 phalloidin (red).*



*Confocal immunofluorescent analysis of tissue surrounding the cartilage primordium of ribs two and three in an E14.5 mouse embryo using **Tri-Methyl-Histone H3 (Lys27) Antibody #9756** (green). Actin filaments have been labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5™ (fluorescent DNA dye).*



*Confocal immunofluorescent analysis of the neural tube in an E10.5 mouse embryo using **SUZ12 (D39F6) Rabbit mAb #3737** (green). Actin filaments have been labeled with DY-554 phalloidin (red).*

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