COSMO BIO CO., LTD.
Inspiration for Life Science

MONOCLONAL ANTIBODY

For research use only. Not for clinical diagnosis.

Catalog No. MCA-MABI0012-100-EX

Anti-phospho Histone H3 (Ser10)

Product type	Primary antibodies
Host	Mouse
Source	Culture supernatant of serum free medium
Form	Liquid PBS＋0.05% sodium azide
Volume	100 μL
Concentration	1 mg/ml
Specificity	
Antigen	19 amino acid residues from the N-terminus of human Histone H3.1
Clone	MABI0312 (CMA312)
Isotype	IgG1

Application notes

Immunoblot, Immunostaining, Immunoprecipitation

Recommended use

Recommended dilutions

Immunoblot: 0.5-1 μg/ml

Immunostaining: 0.5-1 μg/ml

*Immunoprecipitation: 1-5 μg/5 μl Sepharose

*Attention: Mouse IgG has weak combination with protein A and protein G. Please use the beads which connect anti-mouse IgG antibodies such as anti-mouse IgG sepharose for immunoprecipitation.

Optimal dilutions/concentrations should be determined by the end user.

Staining Pattern

Cross reactivity

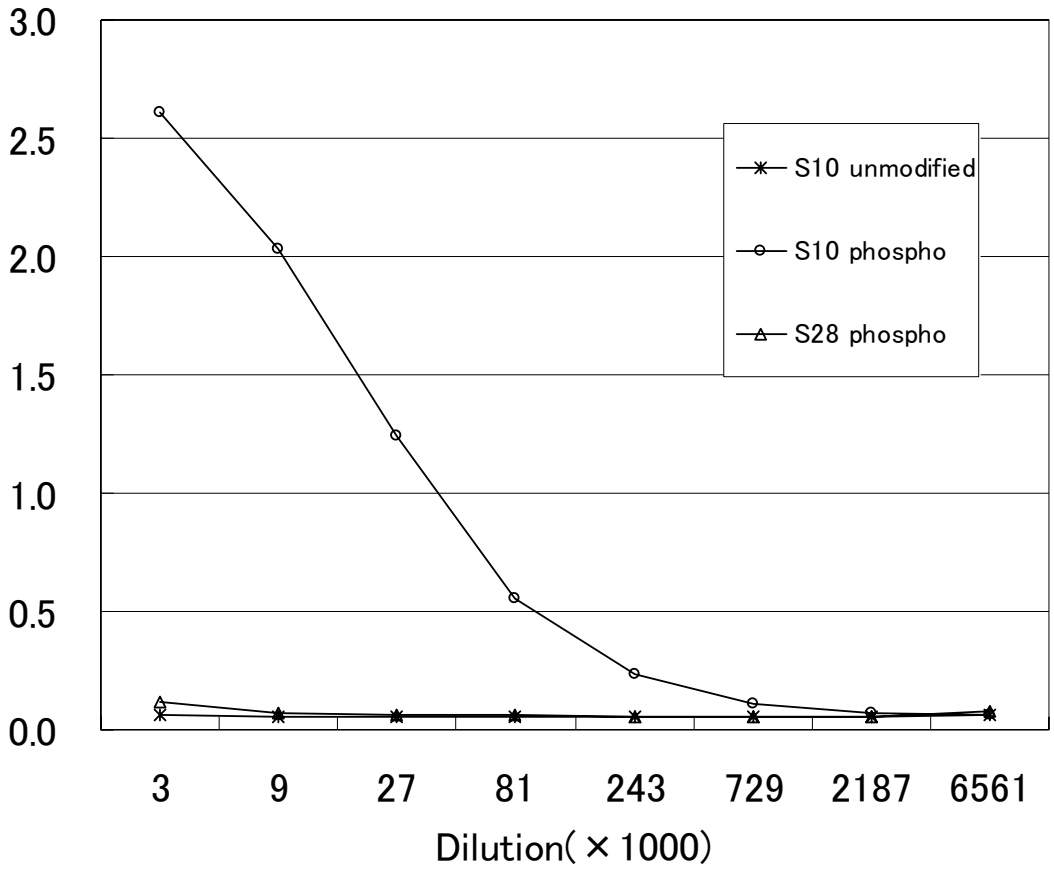
Storage

Store below -20°C.

References

1) Kimura H, Hayashi-Takanaka Y, Goto Y, Takizawa N, Nozaki N. The organization of histone H3 modifications as revealed by a panel of specific monoclonal antibodies. Cell Struct Funct. 2008;33(1):61-73.

MABI 0312



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Manufactured by MAB Institute, Inc.

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New

World's First !!!

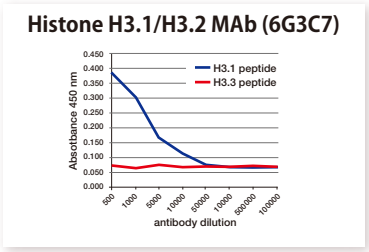
Histone Variant Monoclonal Antibodies

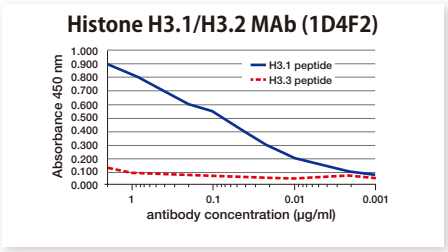
Anti Histone H3.1/H3.2 [Clone: 6G3C7]
Anti Histone H3.1/H3.2 [Clone: 1D4F2]
Anti Histone H3.3 [Clone: 6C4A3]
Anti Histone H3.3 [Clone: 1E4A3]

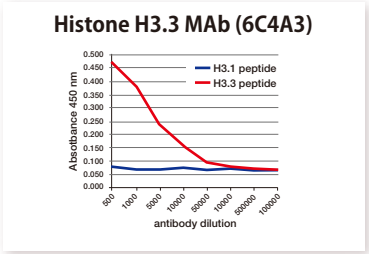
Nucleosomes are composed of four different histone proteins designated H2A, H2B, H3, and H4. In humans, five variants of histone H3 are reported: H3.1, H3.2, H3.3, H3t, and CENP-A. The two major Histone H3 variants, H3.1 and H3.3, are the main variants displaying distinct genomic localization patterns in eukaryotes. Deposition of Histone H3.1 is associated with DNA synthesis during DNA replication and possibly DNA repair, while Histone H3.3 is incorporated independently of DNA synthesis and is the predominant form of H3 found in non-dividing cells. Hence, these new Histone H3 variant monoclonal antibodies offer great utility for dissecting the functional significance of these H3 variants and the molecular mechanisms associated with their deposition.

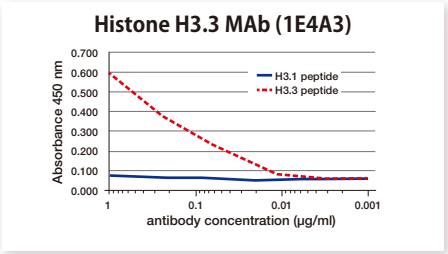
Recently, it was shown that a genomic gene cluster regulating skeletal myogenesis is marked by H3.3 protein prior to cellular muscle formation and that H3.3 marking of this region enables myogenic gene activation (Ref. 2). These results suggest that monitoring H3.3 marking at specific loci may be useful in the prediction of cell fate. These H3.3 monoclonal antibodies are expected to be useful probes in the field of regenerative medicine.

Antibody specificity by competition peptide ELISA







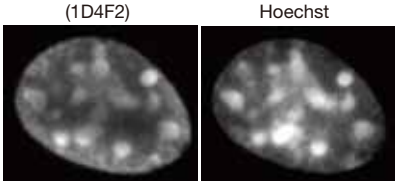


H3.1 peptide	79	KTDLRFQSSAVMALQEASEA	97	H3.1 peptide	21	ATKAARKSAPATGGVKKPH	39
H3.3 peptide	79	KTDLRFQSAAIGALQEASEA	97	H3.3 peptide	21	ATKAARKSAPSTGGVKKPH	39

Fluorescence immunostaining

Histone H3.1/H3.2 MAb

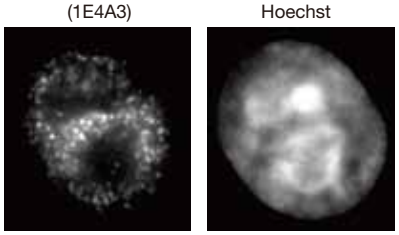
(1D4F2) Hoechst



NIH3T3

Histone H3.3 MAb

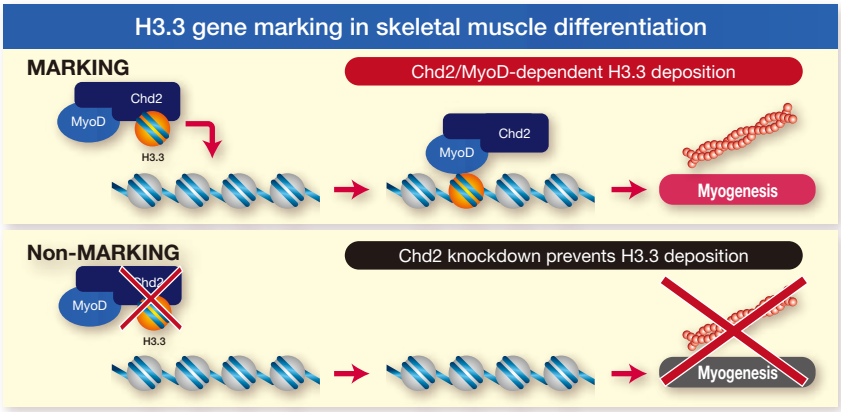
(1E4A3) Hoechst



HeLa

Experimental example

These H3 variant antibodies were essential tools in a first of kind study showing that differentiation specific genes are marked for lineage specific expression by the deposition of Histone H3.3 at the onset of differentiation signaling (Ref. 2).



Reference
1) Hake and Allis, (2006) *PNAS*, **103**, 6428-6435.
2) Harada *et. al.*, (2012) *EMBO J.* **36**, 2994-3007.

Description	Clone	Isotype	Epitope	Application	Cat. No.	Quantity
Anti Histone H3.1/H3.2	6G3C7	Rat-IgG1, λ	H3.1/H3.2 (79-94)	IP/ WB	CAC-CE-039A	100 μL (100 μg)
Anti Histone H3.1/H3.2	1D4F2	Mouse-IgG2b, λ	H3.1/H3.2 (21-39)	ChIP/ IP/ WB/ IC	CAC-CE-039B	50 μL (50 μg)
Anti Histone H3.3	6C4A3	Rat-IgG2a, κ	H3.3 (79-97)	IP/ WB	CAC-CE-040A	100 μL (100 μg)
Anti Histone H3.3	1E4A3	Rat-IgG2a, λ	H3.3 (21-39)	ChIP/ IP/ WB/ IC	CAC-CE-040B	50 μL (50 μg)

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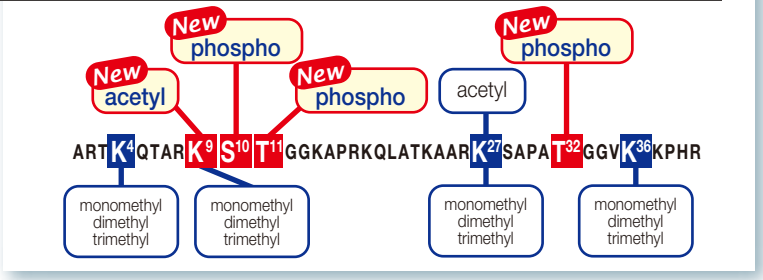
ChIP. Immunostain. WB.

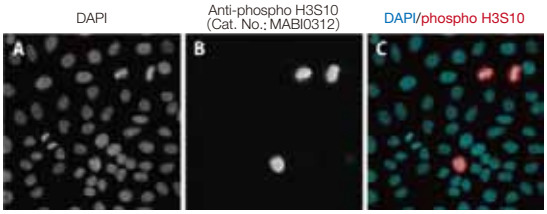
Monoclonal Antibodies to Histone Modifications

Histones are the main protein components of chromatin. To facilitate nuclear packaging and control of gene expression, DNA in chromatin is wound around nucleosome particles composed primarily of the Histones H2A, H2B, H3, and H4. Histone N-terminal regions (histone tails) protrude from the nucleosome core and are subject to a variety of reversible, regulated modifications (including acetlylation, phosphorylation, and methylation) influencing transcription and chromatin structure. How such modifications are regulated and how these modifications effect gene expression continues to be an area of intense interest and research. In such studies, chromatin immunoprecipitation (ChIP) is perhaps the most widely used experimental procedure. Due to the inherent variability and limited supply of polyclonal antibodies, well characterized monoclonal antibodies are preferred reagents for ChIP. The versitile set of anti-histone monoclonal antibodies offered here are therefore highly valuable reagents to your lab's epigenetic toolbox.

Histone H3 N-terminal modifications



Histone H3 phospho Ser10 immunostaining



Description	Host	Residue	Modification	Clone	Application	Cat. No.	Quantity
Anti Histone H3	Mouse	-	unmodified	MABI0301	ChIP/ WB/ IC	MCA-MABI0001-100-EX	100 µL (100 µg)
Anti Monomethyl Histone H3 (Lys4)	Mouse	K4 (Lysine 4)	monomethyl	MABI0302	ChIP/ WB/ IC	MCA-MABI0002-100-EX	100 µL (100 µg)
Anti Dimethyl Histone H3 (Lys4)	Mouse		dimethyl	MABI0303	ChIP/ WB/ IC	MCA-MABI0003-100-EX	100 µL (100 µg)
Anti Trimethyl Histone H3 (Lys4)	Mouse		trimethyl	MABI0304	ChIP/ WB/ IC	MCA-MABI0004-100-EX	100 µL (100 µg)
Anti Histone H3 K9Ac New	Rat	K9 (Lysine 9)	acetyl	2G1F9	ChIP/ WB/ IC/ IHC	CAC-CE-037A	100 µL (100 µg)
Anti Acethyl Histone H3 (Lys9)	Mouse		acetyl	MABI0305	ChIP/ WB/ IC	MCA-MABI0005-100-EX	100 µL (100 µg)
Anti Monomethyl Histone H3 (Lys9)	Mouse		monomethyl	MABI0306	ChIP/ WB/ IC	MCA-MABI0006-100-EX	100 µL (100 µg)
Anti Dimethyl Histone H3 (Lys9)	Mouse		dimethyl	MABI0307	ChIP/ WB/ IC	MCA-MABI0007-100-EX	100 µL (100 µg)
Anti Trimethyl Histone H3 (Lys9)	Mouse		trimethyl	MABI0308	ChIP/ WB/ IC	MCA-MABI0008-100-EX	100 µL (100 µg)
Anti Acetyl Histone H3 (Lys9/27)	Mouse	K9/27 (Lysine 9/27)	acetyl	MABI0310	ChIP/ WB/ IC	MCA-MABI0010-100-EX	100 µL (100 µg)
Anti Acetyl Histone H3 (Lys27)	Mouse	K27 (Lysine 27)	acetyl	MABI0309	ChIP/ WB/ IC	MCA-MABI0009-100-EX	100 µL (100 µg)
Anti Monomethyl Histone H3 (Lys27)	Mouse		monomethyl	MABI0321	ChIP/ WB/ IC	MCA-MABI0321-100-EX	100 µL (100 µg)
Anti Dimethyl Histone H3 (Lys27) coming soon!	Mouse		dimethyl	MABI0322	ChIP/ WB/ IC	MCA-MABI0322-100-EX	100 µL (100 µg)
Anti Trimethyl Histone H3 (Lys27)	Mouse		trimethyl	MABI0323	ChIP/ WB/ IC	MCA-MABI0323-100-EX	100 µL (100 µg)
Anti Monomethyl Histone H3 (Lys36)	Mouse	K36 (Lysine 36)	monomethyl	MABI0331	ChIP/ WB/ IC	MCA-MABI0331-100-EX	100 µL (100 µg)
Anti Dimethyl Histone H3 (Lys36)	Mouse		dimethyl	MABI0332	ChIP/ WB/ IC	MCA-MABI0332-100-EX	100 µL (100 µg)
Anti Trimethyl Histone H3 (Lys36)	Mouse		trimethyl	MABI0333	ChIP/ WB/ IC	MCA-MABI0333-100-EX	100 µL (100 µg)
Anti Histone H3 S10ph New	Rat	S10 (Serine 10)	phospho	6G8B7	WB/ IC	CAC-CE-034A	100 µL (100 µg)
Anti phospho Histone H3 (Ser10)	Mouse		phospho	MABI0312	ChIP/ WB/ IC	MCA-MABI0012-100-EX	100 µL (100 µg)
Anti Histone H3 T11ph New	Rat	T11 (Threonine 11)	phospho	6G12C5	WB/ IC	CAC-CE-035A	100 µL (100 µg)
Anti Histone H3 T32ph New	Rat	T32 (Threonine 32)	phospho	6C7G12	WB/ IC	CAC-CE-036A	100 µL (100 µg)
Anti phospho Histone H2B (Ser14)	Mouse	S14 (Serine 14)	phospho	MABI0251	ChIP/ WB/ IC	MCA-MABI0251-100-EX	100 µL (100 µg)

Reference

1) Strahl and Allis, (2000) *Nature* **403**, 41-45.
2) Shimada *et. al.*, (2008) *Cell* **132**, 221–232.
3) Kimura H, *et. al.*, (2008) *Cell Struct Funct.*, **33**, 61
4) Ohhata T, *et. al.*, (2008) *Development.*, **135**, 227
5) Luco RF, *et. al.*, (2010) *Science.*, **327**, 996 (2010)
6) Rechtsteiner A, *et. al.*, (2010) *PLoS Genet.*, 6, e1001091
7) Furuhashi H, *et. al.*, (2010) *Epigenetics Chromatin.*, 3, 15
8) Matsui T, *et. al.*, (2010) *Nature.*, 464, 927

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