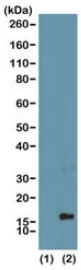
H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody [clone RM140] (R20200)

Catalog No.	Formulation	Size
R20200-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20200-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25 ug

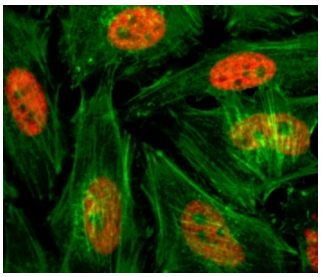
Recombinant RABBIT MONOCLONAL

Bulk quote request

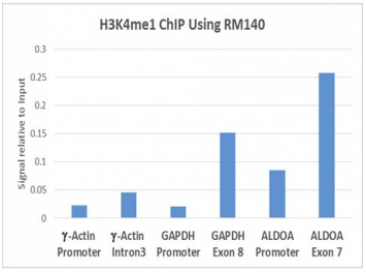
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM140
Purity	Protein A purified from animal origin-free supernatant
UniProt	P84243
Gene ID	8350
Applications	Western Blot : 0.2-1ug/ml ChIP : 2-10ug/mg of lysate Immunocytochemistry : 1-2ug/ml ELISA : 0.2-1ug/ml
Limitations	This H3K4me1 antibody is available for research use only.



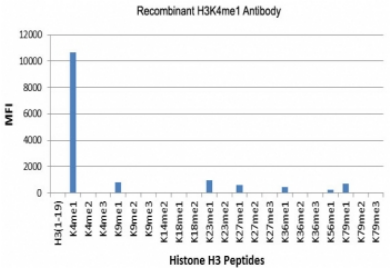
H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody (clone RM140) for WB. Western blot analysis of HIST1H3A / Histone H3 Lys4 monomethylation (K4me1) in (1) recombinant Histone H3.3 and (2) acid extracts of human HeLa cells using H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody. A band is detected at the predicted molecular weight of approximately 15 kDa corresponding to monomethylated Histone H3, consistent with enhancer-associated chromatin marking poised regulatory regions.



ICC testing of human HeLa cells treated with sodium butyrate using recombinant H3K4me1 antibody (red). Actin filaments have been labeled with fluorescein phalloidin (green).



H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody (clone RM140) for ChIP. Chromatin immunoprecipitation analysis of HIST1H3A / Histone H3 Lys4 monomethylation (K4me1) in human HeLa cells using H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody (5 ug). Quantitative PCR shows enrichment at intragenic and regulatory regions including gamma-Actin Intron 3 and ALDOA Exon 7 relative to promoter regions, consistent with H3K4me1 marking enhancer-associated chromatin and poised regulatory elements.



H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody (clone RM140) specificity analysis. Peptide binding assay demonstrating selective recognition of HIST1H3A / Histone H3 Lys4 monomethylation (K4me1). Strong signal is observed exclusively with the K4me1 peptide, while no detectable reactivity is seen with dimethylated (K4me2), trimethylated (K4me3), or other methylated histone H3 peptides, confirming high specificity for the monomethylated Lys4 state associated with enhancer priming.

Description

Histone H3 (HIST1H3A) is a core nucleosomal protein that undergoes lysine methylation to regulate chromatin structure and transcriptional control. Monomethylation at lysine 4 is a hallmark modification associated with enhancer priming and poised regulatory elements. H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody (clone RM140) is designed to detect Histone H3 monomethylated at lysine 4, providing a robust marker of regulatory chromatin that is prepared for activation but not necessarily fully active. This antibody is part of a broader collection of Histone H3 antibodies used to study chromatin structure, histone modifications, and epigenetic regulation.

HIST1H3A antibody, also referred to as Histone H3 antibody and H3K4me1 antibody in the literature, recognizes a modification enriched at enhancer regions across the genome. H3K4 monomethylation is a defining feature of poised enhancers, distinguishing them from active enhancers marked by H3K27ac and from promoter-associated acetylation marks such as H3K9ac and H3K4ac. This distinction is critical for resolving regulatory states in epigenomic analyses.

This recombinant rabbit monoclonal clone RM140 antibody is uniquely positioned for studies of enhancer priming and regulatory potential rather than immediate transcriptional output. H3K4me1 marks genomic regions that are accessible and competent for activation, particularly in developmental contexts, lineage specification, and signal-responsive gene regulation.

At the molecular level, H3K4 monomethylation contributes to chromatin environments that support transcription factor binding and enhancer licensing while maintaining a poised state. These regions can rapidly transition to active enhancers upon acquisition of additional activating marks, making H3K4me1 a key indicator of regulatory readiness rather than transcriptional engagement.

H3K4 methylation exists in mono-, di-, and tri-methyl states, each associated with distinct chromatin functions. The monomethylated form specifically defines enhancer-associated chromatin, whereas trimethylation at Lys4 is strongly promoter-associated, providing an additional layer of functional resolution.

In western blot applications, the antibody detects Histone H3 at approximately 15 kDa, with signal corresponding to monomethylated chromatin in regulatory regions. Detection reflects enhancer-associated chromatin states rather than promoter activation, transcription elongation, or chromatin accessibility alone.

At the cellular level, H3K4 monomethylation localizes to the nucleus and is enriched in euchromatic regulatory regions that support cell-type-specific gene control. This distribution distinguishes it from repressive methylation marks and from acetylated Histone H3 sites associated with active transcription.

This antibody supports detection of Lys4-monomethylated Histone H3, enabling investigation of enhancer priming, poised regulatory chromatin, and epigenetic regulation of gene expression programs.

Application Notes

The stated application concentrations are suggested starting points. Titration of the H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A monomethyl-peptide corresponding to Monomethyl-Histone H3 (Lys4) was used as the immunogen for this H3K4me1 Antibody / HIST1H3A Enhancer Priming Chromatin Antibody.

Storage

Store the recombinant H3K4me1 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

Histone H3 Lys4 monomethylation antibody, H3K4me1 enhancer priming antibody, histone H3 mono methyl Lys4 antibody, poised enhancer histone antibody