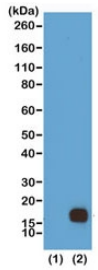
H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody [clone RM151] (R20211)

Catalog No.	Formulation	Size
R20211-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20211-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25 ug

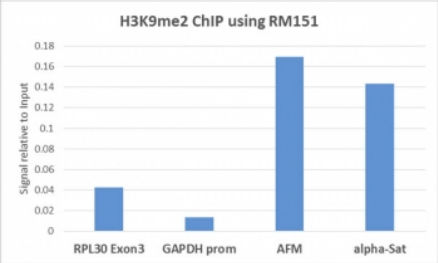
Recombinant RABBIT MONOCLONAL

Bulk quote request

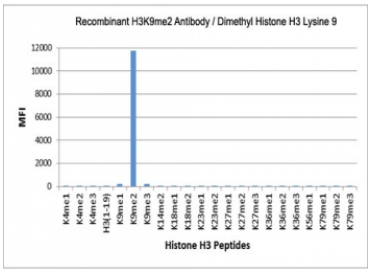
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM151
Purity	Protein A purified from animal origin-free supernatant
UniProt	P84243
Gene ID	8350
Applications	Western Blot : 0.25-1ug/ml ChIP : 2-10ug/mg of lysate Immunocytochemistry : 0.5-2ug/ml ELISA : 0.2-1ug/ml
Limitations	This H3K9me2 antibody is available for research use only.



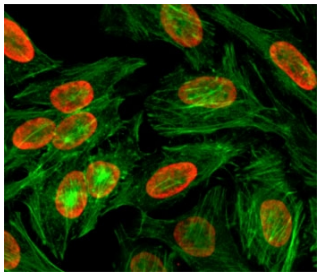
H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody (clone RM151) for WB. Western blot analysis of HIST1H3A / Histone H3 Lys9 dimethylation (K9me2) in (1) recombinant Histone H3.3 and (2) acid extracts of human HeLa cells using H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody. A band is detected at the predicted molecular weight of approximately 15 kDa corresponding to dimethylated Histone H3, consistent with stable repressive chromatin and facultative heterochromatin domains.



H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody (clone RM151) for ChIP. Chromatin immunoprecipitation analysis of HIST1H3A / Histone H3 Lys9 dimethylation (K9me2) in human HeLa cells using H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody (5 ug). Quantitative PCR shows enrichment at AFM and alpha-satellite regions relative to the GAPDH promoter, with lower signal at RPL30 Exon3, consistent with H3K9me2 marking facultative heterochromatin and stable transcriptionally repressed chromatin domains.



H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody (clone RM151) specificity analysis. Peptide binding assay demonstrating selective recognition of HIST1H3A / Histone H3 Lys9 dimethylation (K9me2). Strong signal is observed exclusively with the K9me2 peptide, while no detectable reactivity is seen with non-modified Histone H3 (H3 1-19), monomethylated (K9me1), trimethylated (K9me3), or other methylated histone H3 peptides, confirming high specificity for the dimethylated Lys9 state associated with stable repressive chromatin and facultative heterochromatin.



ICC/IF test of HeLa cells treated with sodium butyrate using recombinant H3K9me2 antibody (red). Actin filaments have been labeled with fluorescein phalloidin (green).

Description

Histone H3 (HIST1H3A) methylation at lysine 9 is a central epigenetic modification governing chromatin repression and heterochromatin formation. Dimethylation at lysine 9 represents a stable repressive chromatin state associated with facultative heterochromatin and sustained gene silencing across large genomic domains. H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody (clone RM151) is designed to detect Histone H3 dimethylated at lysine 9, providing a robust marker of chromatin regions undergoing persistent transcriptional repression. 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 H3K9me2 antibody in the literature, recognizes a modification that is more stable than H3K9me1 yet more dynamically regulated than H3K9me3. While H3K9me3 defines constitutive heterochromatin such as pericentromeric regions, H3K9me2 is broadly distributed across facultative heterochromatin and developmentally regulated gene clusters.

This recombinant rabbit monoclonal clone RM151 antibody is uniquely positioned for studies of stable but reversible chromatin repression. H3K9 dimethylation plays a critical role in lineage commitment, cellular differentiation, and maintenance of cell identity by ensuring selective silencing of gene programs.

At the molecular level, H3K9me2 is catalyzed by histone methyltransferases such as G9a and GLP and contributes to recruitment of chromatin-associated proteins including HP1 family members. These interactions promote chromatin compaction and establishment of repressive domains while allowing regulated transitions when required.

This modification is frequently associated with large chromatin blocks and coordinated gene silencing programs. Its presence reflects sustained repression rather than transient or intermediate chromatin states.

In western blot applications, the antibody detects Histone H3 at approximately 15 kDa, with signal corresponding to

dimethylated chromatin associated with repressive domains. Detection reflects stable heterochromatin formation rather than transitional repression or active transcription.

At the cellular level, H3K9 dimethylation localizes to the nucleus and is enriched in regions of facultative heterochromatin. This distinguishes it from acetylation marks linked to activation and from monomethylated states associated with chromatin transition.

This antibody supports detection of Lys9-dimethylated Histone H3, enabling investigation of stable chromatin repression, heterochromatin formation, and epigenetic regulation of gene silencing.

Application Notes

The stated application concentrations are suggested starting points. Titration of the H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A dimethyl-peptide corresponding to Dimethyl-Histone H3 (Lys9) was used as the immunogen for this H3K9me2 Antibody / HIST1H3A Stable Repressive Chromatin Antibody.

Storage

Store the recombinant H3K9me2 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

Histone H3 Lys9 dimethylation antibody, H3K9me2 heterochromatin antibody, histone H3 di methyl Lys9 antibody, H3K9 dimethyl histone antibody