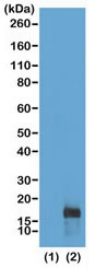
H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody [clone RM181] (R20220)

Catalog No.	Formulation	Size
R20220-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20220-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25 ug

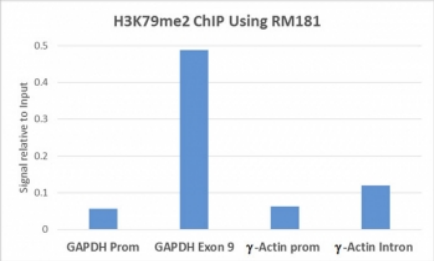
Recombinant RABBIT MONOCLONAL

Bulk quote request

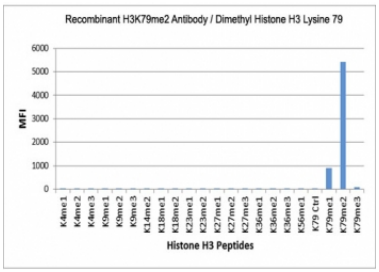
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM181
Purity	Protein A purified from animal origin-free supernatant
UniProt	P84243
Gene ID	8350
Applications	Western Blot : 0.25-1ug/ml Immunohistochemistry : 0.1-1ug/ml (1) ChIP : 2-10ug/mg ELISA : 0.2-1ug/ml
Limitations	This H3K79me2 antibody is available for research use only.



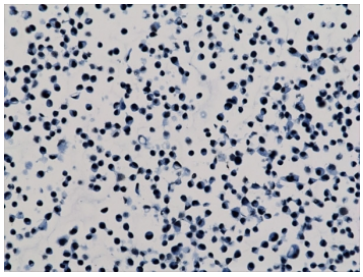
H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody (clone RM181) for WB. Western blot analysis of HIST1H3A / Histone H3 Lys79 dimethylation (K79me2) in (1) recombinant Histone H3.3 and (2) acid extracts of human HeLa cells using H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody. A band is detected at the predicted molecular weight of approximately 15 kDa corresponding to dimethylated Histone H3, consistent with transcription elongation-associated chromatin and gene body regulatory domains.



H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody (clone RM181) for ChIP. Chromatin immunoprecipitation analysis of HIST1H3A / Histone H3 Lys79 dimethylation (K79me2) in human HeLa cells using H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody (5 ug). Quantitative PCR shows strong enrichment at GAPDH Exon 9 relative to the GAPDH promoter, with moderate signal at gamma-Actin intron and lower enrichment at gamma-Actin promoter, consistent with H3K79me2 marking transcription elongation within gene bodies.



H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody (clone RM181) specificity analysis. Peptide binding assay demonstrating selective recognition of HIST1H3A / Histone H3 Lys79 dimethylation (K79me2). Strong signal is observed with the K79me2 peptide, with only very weak reactivity detected toward K14me1, while no detectable binding is seen with unmodified Lys79, trimethylated Lys79 (K79me3), or other methylated histone H3 peptides, confirming high specificity for the dimethylated Lys79 state associated with transcription elongation and gene body chromatin.



ICC staining of human HepG2 cells with recombinant H3K79me2 antibody.

Description

Histone H3 (HIST1H3A) methylation at lysine 79 is a unique chromatin modification located within the globular domain of histone H3, directly influencing nucleosome structure and transcriptional regulation. Dimethylation at lysine 79 represents a key marker of transcriptional elongation and gene body-associated chromatin. H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody (clone RM181) is designed to detect Histone H3 dimethylated at lysine 79, providing a robust marker of actively transcribed chromatin regions. 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 H3K79me2 antibody in the literature, recognizes a modification catalyzed exclusively by the DOT1L methyltransferase. Unlike tail-based histone modifications, lysine 79 methylation occurs within the nucleosome core, giving it a distinct structural and functional role in chromatin biology.

This recombinant rabbit monoclonal clone RM181 antibody is uniquely positioned for studies of transcriptional elongation and gene body chromatin organization. H3K79 dimethylation is enriched across actively transcribed genes and correlates with RNA polymerase II occupancy and elongation efficiency.

At the molecular level, H3K79me2 contributes to chromatin environments that support transcriptional elongation and stable gene expression. It may influence nucleosome stability and accessibility, facilitating efficient transcription through gene bodies.

This modification is strongly associated with active gene expression and is frequently used as a marker of transcriptionally engaged chromatin. Its distribution across coding regions provides a comprehensive view of elongation-associated chromatin states.

H3K79 methylation is also implicated in disease biology, particularly in leukemias driven by aberrant DOT1L activity, highlighting its importance in epigenetic regulation and transcriptional control.

In western blot applications, the antibody detects Histone H3 at approximately 15 kDa, with signal corresponding to dimethylated chromatin associated with transcriptionally active gene bodies. Detection reflects elongation-associated chromatin rather than promoter activation or repressive domains.

At the cellular level, H3K79 dimethylation localizes to the nucleus and is enriched in euchromatic regions undergoing active transcription. This distinguishes it from repressive marks such as H3K9me2 and H3K9me3.

This antibody supports detection of Lys79-dimethylated Histone H3, enabling investigation of transcriptional elongation, gene body chromatin organization, and epigenetic regulation of gene expression.

Application Notes

The stated application concentrations are suggested starting points. Titration of the H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

1. A pH6 Citrate buffer or pH9 Tris/EDTA buffer HIER step is recommended for testing of FFPE tissue sections.

Immunogen

A dimethyl-peptide corresponding to Dimethyl-Histone H3 (Lys79) was used as the immunogen for this H3K79me2 Antibody / HIST1H3A Transcriptional Elongation Domain Antibody.

Storage

Store the recombinant H3K79me2 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

Histone H3 Lys79 dimethylation antibody, H3K79me2 elongation antibody, histone H3 di methyl Lys79 antibody, H3K79 dimethyl histone antibody