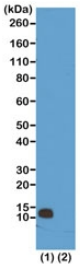
H4R3me1 Antibody / Histone H4 Arginine 3 Monomethylation PRMT5 Pathway Antibody [clone RM195] (R20223)

Catalog No.	Formulation	Size
R20223-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20223-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25 ug

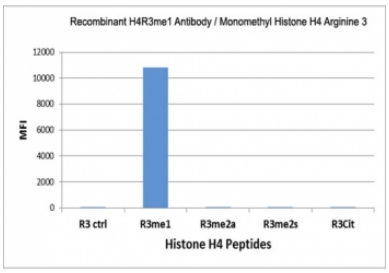
Recombinant RABBIT MONOCLONAL

Bulk quote request

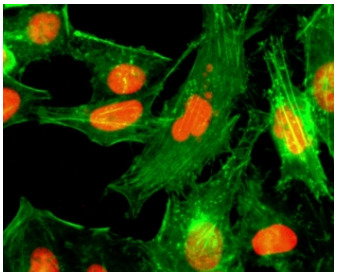
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM195
Purity	Protein A purified from animal origin-free supernatant
UniProt	P62805
Gene ID	121504
Applications	Western Blot : 0.5-2ug/ml ELISA : 0.2-1ug/ml Immunocytochemistry : 1-2ug/ml
Limitations	This recombinant H4R3me1 antibody is available for research use only.



H4R3me1 Antibody for WB. Western blot analysis of histone H4 arginine 3 monomethylation in acid-extracted chromatin samples. Lane 1: human HeLa cell acid extract, Lane 2: recombinant histone H4 protein. A band is detected at approximately 11 kDa, consistent with the predicted molecular weight of Histone H4 (HIST1H4). The signal in HeLa cells reflects endogenous H4R3 monomethylation, a PRMT5-associated modification linked to chromatin compaction and repressive chromatin states.



H4R3me1 Antibody specificity. Peptide binding analysis demonstrating selective recognition of histone H4 arginine 3 monomethylation. Strong signal is observed exclusively for the H4R3me1 peptide, with no detectable reactivity toward unmodified R3 (R3 ctrl), asymmetric dimethylation (R3me2a), symmetric dimethylation (R3me2s), or citrullinated R3 (R3Cit). These data confirm high specificity of the H4R3me1 antibody for PRMT5 pathway-associated monomethylated histone H4.



H4R3me1 Antibody for IF. Immunofluorescence analysis of histone H4 arginine 3 monomethylation in sodium butyrate-treated human HeLa cells using H4R3me1 Antibody (red). Nuclear staining is observed, consistent with localization of monomethylated histone H4 within chromatin. Actin filaments are labeled with fluorescein phalloidin (green), and nuclei are visualized with DAPI (blue), highlighting nuclear enrichment of this PRMT5 pathway-associated chromatin modification.

Description

Histone H4 (HIST1H4) is a core nucleosomal histone whose N-terminal tail is a major substrate for arginine methylation events that regulate chromatin compaction and genome stability. H4R3me1 Antibody (clone RM195) detects monomethylation at arginine 3, a modification positioned within PRMT5-driven methylation pathways that shape chromatin architecture and repressive chromatin states. This residue is a key regulatory site controlling how histone H4 participates in nucleosome-nucleosome interactions and chromatin fiber organization. This antibody is part of our broader Histone H4 antibody collection, including acetylation, methylation, phosphorylation, and total H4 detection reagents for chromatin and epigenetics research.

Arginine 3 methylation represents a critical entry point into PRMT5-mediated chromatin regulation. While PRMT5 catalyzes symmetric dimethylation at this site, the monomethyl state reflects dynamic pathway activity and substrate engagement, making H4R3me1 a sensitive indicator of arginine methylation flux within chromatin. This positions H4R3me1 as a valuable marker for studying PRMT5 biology and chromatin compaction mechanisms rather than transcriptional activation processes.

HIST1H4 antibody, also referred to as Histone H4 antibody and H4R3 methylation antibody in the literature, is frequently used to investigate chromatin states associated with structural repression and genome organization. Methylation at arginine 3 promotes stabilization of nucleosomal arrays and contributes to reduced chromatin accessibility, supporting compact chromatin configurations that maintain genome integrity. This function distinguishes H4R3 methylation from many lysine-based histone modifications that are more closely linked to transcriptional regulation.

The histone H4 tail plays a direct structural role in mediating interactions between adjacent nucleosomes, and modification at arginine 3 alters the recruitment of chromatin-associated effector proteins. These changes reinforce chromatin condensation and support genome stability by limiting inappropriate DNA exposure. As a result, H4R3 methylation is closely associated with repressive chromatin environments and coordinated chromatin folding.

Dysregulation of PRMT5 activity and H4 arginine methylation has been implicated in cancer and other diseases characterized by altered chromatin compaction and epigenetic control. Monitoring H4R3me1 provides insight into PRMT5 pathway activity, chromatin structural states, and genome stability mechanisms.

A recombinant rabbit monoclonal antibody such as clone RM195 enables specific detection of this modification in studies focused on PRMT5 signaling, chromatin condensation, and higher-order chromatin organization.

Chromatin organization and epigenetic pathway studies may also benefit from our Histone H4 antibody targeting core

nucleosome structure and nuclear chromatin biology.

Application Notes

The stated application concentrations are suggested starting points. Titration of the H4R3me1 Antibody / Histone H4 Arginine 3 Monomethylation PRMT5 Pathway Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A monomethyl-peptide corresponding to Monomethyl-Histone H4 (Arg3) was used as the immunogen for this H4R3me1 Antibody / Histone H4 Arginine 3 Monomethylation PRMT5 Pathway Antibody

Storage

Store the recombinant H4R3me1 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

H4R3me1 antibody, Histone H4 arginine methylation antibody, PRMT5 histone H4 antibody, HIST1H4 R3 methyl antibody