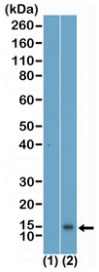
Monomethyl-Histone H4 Antibody Lysine 5 / H4K5me1 Chromatin Maturation Antibody [clone RM457] (R20471)

Catalog No.	Formulation	Size
R20471-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug

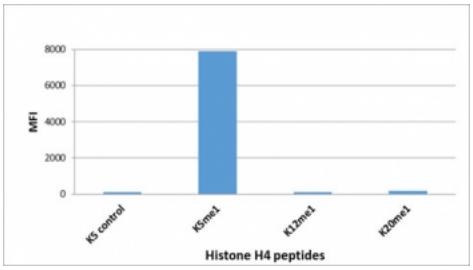
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM457
Purity	Protein A purified from animal origin-free supernatant
UniProt	P62805
Applications	Western Blot : 0.1ug/ml-2ug/ml ELISA : 0.5ug/ml-1ug/ml
Limitations	This recombinant Monomethyl-Histone H4 antibody is available for research use only.



H4K5me1 Antibody for WB. Western blot analysis of histone H4 lysine 5 monomethylation in chromatin samples. Lane 1: recombinant histone H4 protein, Lane 2: acid extract of human HeLa cells. 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 H4K5 monomethylation associated with chromatin maturation and intermediate chromatin organization states.



H4K5me1 Antibody specificity. Peptide binding analysis demonstrating selective recognition of histone H4 lysine 5 monomethylation. Strong signal is observed exclusively for the H4K5me1 peptide, with no detectable reactivity toward unmodified lysine 5 (K5 control) or other monomethylated histone H4 peptides. These results confirm high specificity of the H4K5me1 antibody for chromatin maturation-associated monomethylated histone H4.

Description

Histone H4 (HIST1H4) is a core nucleosomal histone whose lysine 5 monomethylation (H4K5me1) represents an emerging chromatin modification associated with early chromatin maturation and structural organization. Monomethyl-Histone H4 Antibody Lysine 5 (clone RM457) detects this modification, which occupies a distinct regulatory niche separate from both acetylation at lysine 5 and methylation at lysine 20. Unlike well-characterized marks linked to chromatin compaction or transcriptional activity, H4K5me1 is positioned within intermediate chromatin states where nucleosome organization is being established or refined. 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.

H4K5me1 antibody, also referred to as Histone H4 K5 monomethyl antibody or HIST1H4 methylation antibody in the literature, is used to investigate chromatin environments characterized by low-order methylation and transitional chromatin structure. In contrast to acetylation at lysine 5, which neutralizes charge and promotes chromatin assembly, monomethylation at this residue does not alter charge but instead generates a recognition site for chromatin-associated proteins. This functional distinction makes H4K5me1 particularly relevant for studying chromatin signaling rather than chromatin assembly dynamics.

Mechanistically, lysine methylation acts as a docking platform for reader proteins that regulate chromatin organization and nucleosome stability. Monomethylation at lysine 5 is thought to contribute to recruitment of chromatin regulators involved in nucleosome positioning and chromatin stabilization, supporting the transition from newly assembled chromatin toward more defined structural states. This positions H4K5me1 as a marker of chromatin maturation rather than fully compacted or highly accessible chromatin.

The histone H4 N-terminal tail plays a central role in mediating nucleosome-nucleosome interactions and chromatin architecture. Modification at lysine 5 influences these interactions in a manner distinct from both acetylation and higher-order methylation marks. While H4K20 methylation promotes chromatin compaction and genome stability, and H4K5 acetylation supports chromatin assembly, H4K5 monomethylation reflects a transitional regulatory layer within chromatin organization.

Emerging evidence suggests that low-order histone methylation states such as H4K5me1 contribute to fine-tuning chromatin structure and may participate in epigenetic regulation that bridges early chromatin assembly and stable chromatin domains. This makes H4K5me1 a useful marker for investigating intermediate chromatin states that are not captured by more extensively studied histone modifications.

A recombinant rabbit monoclonal antibody such as clone RM457 enables specific detection of H4K5 monomethylation in studies focused on chromatin maturation, nucleosome organization, and epigenetic regulation of chromatin structure.

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 Monomethyl-Histone H4 Antibody Lysine 5 / H4K5me1 Chromatin Maturation Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A monomethyl-lysine 5 peptide corresponding to Histone H4 was used as the immunogen for the Monomethyl-Histone H4 Antibody Lysine 5 / H4K5me1 Chromatin Maturation Antibody.

Storage

Store the recombinant Monomethyl-Histone H4 antibody at -20oC.

Alternate Names

H4K5me1 antibody, Histone H4 mono methyl lysine 5 antibody, HIST1H4 methylation antibody, H4 chromatin maturation antibody