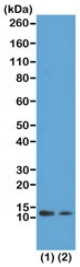
H4K12ac Antibody / Histone H4 Lysine 12 Acetylation Chromatin Assembly Antibody [clone RM202] (R20230)

Catalog No.	Formulation	Size
R20230-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20230-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25 ug

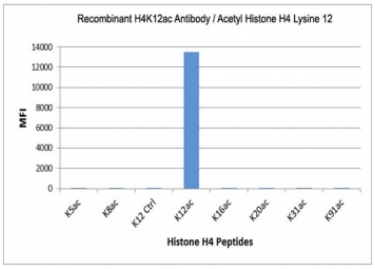
Recombinant RABBIT MONOCLONAL

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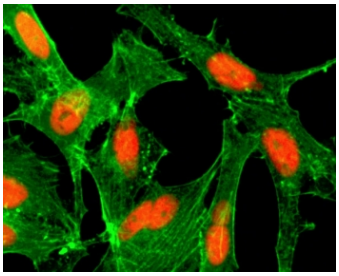
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM202
Purity	Protein A purified from animal origin-free supernatant
UniProt	P62805
Gene ID	121504
Applications	Western blot: 0.5-2ug/ml ELISA: 0.5-1ug/ml Immunocytochemistry: 0.5-2ug/ml
Limitations	This recombinant H4K12ac antibody is available for research use only.



H4K12ac Antibody for WB. Western blot analysis of histone H4 lysine 12 acetylation in chromatin samples. Lane 1: acid extract of human HeLa cells treated with sodium butyrate, Lane 2: acid extract of untreated human HeLa cells. A band is detected at approximately 11 kDa, consistent with the predicted molecular weight of Histone H4 (HIST1H4). Increased signal intensity in sodium butyrate-treated cells reflects enhanced H4K12 acetylation associated with replication-coupled chromatin assembly and newly synthesized histone incorporation.



H4K12ac Antibody specificity. Peptide binding analysis demonstrating selective recognition of histone H4 lysine 12 acetylation. Strong signal is observed exclusively for the H4K12ac peptide, with no detectable reactivity toward unmodified lysine 12 (K12 control) or other acetylated histone H4 peptides. These results confirm high specificity of the H4K12ac antibody for chromatin assembly-associated acetylated histone H4.



H4K12ac Antibody for IF. Immunofluorescence analysis of histone H4 lysine 12 acetylation in sodium butyrate-treated human HeLa cells using H4K12ac Antibody (red). Nuclear staining is observed, consistent with localization of acetylated histone H4 (HIST1H4) within chromatin during replication-associated chromatin assembly. Actin filaments are labeled with fluorescein phalloidin (green), and nuclei are visualized with DAPI (blue), highlighting nuclear enrichment of this chromatin assembly-associated acetylation mark.

Description

Histone H4 (HIST1H4) is a core nucleosomal histone whose lysine 12 acetylation (H4K12ac) is a defining feature of newly synthesized histones during replication-coupled chromatin assembly. H4K12ac Antibody (clone RM202) detects this modification, which functions together with lysine 5 acetylation to mark histone H4 prior to its incorporation into chromatin. This coordinated acetylation pattern provides a highly specific signature of histone deposition and early nucleosome formation. 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.

H4K12ac antibody, also referred to as Histone H4 K12 acetyl antibody or HIST1H4 acetylation antibody in the literature, is widely used to study chromatin assembly pathways and histone deposition dynamics. Acetylation at lysine 12 is catalyzed by histone acetyltransferase HAT1 and occurs on newly synthesized histone H4 in the cytoplasm before nuclear import. This modification facilitates interaction with histone chaperones and supports efficient nucleosome assembly during DNA replication.

Functionally, acetylation at lysine 12 neutralizes the positive charge of the histone tail, reducing its affinity for DNA and enabling flexible chromatin assembly. This creates a permissive structural environment that allows histones to be deposited onto DNA without premature chromatin compaction. In contrast to modifications that stabilize chromatin structure, H4K12 acetylation supports dynamic chromatin formation and is removed as chromatin matures.

The histone H4 tail plays a central role in nucleosome organization, and modification at lysine 12 contributes to proper nucleosome spacing and chromatin fiber establishment. H4K12ac is therefore closely linked to early chromatin maturation stages and provides insight into replication-associated chromatin dynamics rather than long-term chromatin structure or accessibility.

Following deposition, histones marked by H4K12ac undergo deacetylation as chromatin transitions into a more stable and organized state. Disruption of this process can lead to defects in nucleosome assembly, replication stress, and genome instability. As a result, H4K12ac serves as a valuable marker for studying histone turnover, replication timing, and chromatin assembly fidelity.

A recombinant rabbit monoclonal antibody such as clone RM202 enables specific detection of H4K12 acetylation in studies focused on chromatin assembly, nucleosome deposition, and replication-coupled 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 H4K12ac Antibody / Histone H4 Lysine 12 Acetylation Chromatin Assembly Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An acetyl-peptide corresponding to Acetyl-Histone H4 (Lys12) was used as the immunogen for this H4K12ac Antibody / Histone H4 Lysine 12 Acetylation Chromatin Assembly Antibody.

Storage

Store the recombinant H4K12ac antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

H4K12ac antibody, Histone H4 acetyl lysine 12 antibody, HIST1H4 acetylation antibody, H4 chromatin assembly acetylation antibody

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