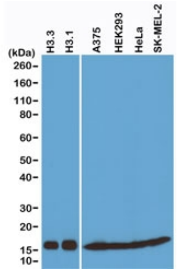
Histone H3 Antibody / HIST1H3A Core Chromatin Structure Antibody [clone RM188] (R20252)

Catalog No.	Formulation	Size
R20252-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20252-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25

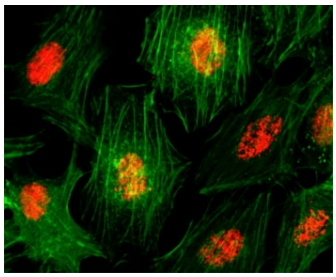
Recombinant RABBIT MONOCLONAL

Bulk quote request

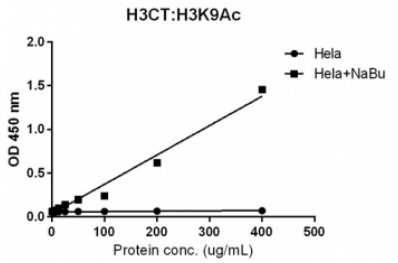
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM188
Purity	Protein A purified from animal origin-free supernatant
UniProt	P84243
Gene ID	8350
Applications	Western Blot : 0.01-0.25ug/ml Immunocytochemistry : 1ug/ml-5ug/ml ELISA : 0.2-1ug/ml
Limitations	This recombinant Histone H3 antibody is available for research use only.



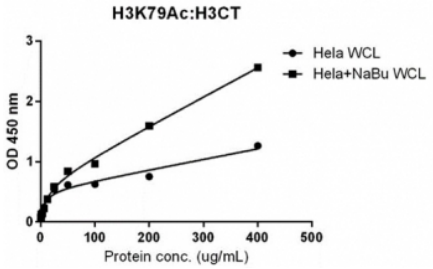
Western blot of recombinant Histone H3.3 and H3.1 proteins, A375, HEK293, HeLa and SK-MEL-2 whole cell lysates, using Histone H3 Antibody / HIST1H3A Core Chromatin Structure Antibody at 0.025 ug/ml.



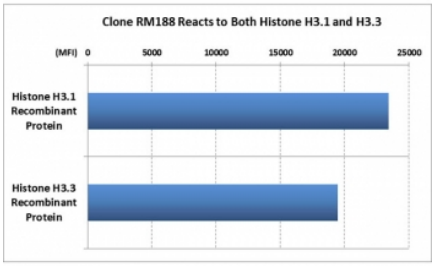
ICC/IF of HeLa cells using recombinant Histone H3 antibody (red). Actin filaments have been labeled with fluorescein phalloidin (green).



Sandwich ELISA against acetylated Histone H3 at Lys 9 using HeLa whole cell lysate, treated or untreated with sodium butyrate, using recombinant Histone H3 antibody (1ug/ml) as the capture and biotinylated anti-H3K9ac (RM161, 1ug/ml) as the detect.



Sandwich ELISA against acetylated Histone H3 at Lys 79 using HeLa whole cell lysate, treated or untreated with sodium butyrate, using RM156, 5 ug/ml as the capture antibody and biotinylated recombinant Histone H3 antibody (RM188, 1 ug/ml) as the detect.



Histone H3 Antibody / HIST1H3A Core Chromatin Structure Antibody (clone RM188) specificity analysis. Protein binding assay demonstrating recognition of both HIST1H3A / Histone H3.1 and Histone H3.3. Strong signal is observed for both recombinant H3.1 and H3.3 proteins, confirming variant-independent detection and broad reactivity across major histone H3 isoforms, supporting use as a total H3 reference antibody for chromatin normalization and epigenetic studies.

Description

Histone H3 (HIST1H3A) is a central structural and regulatory component of the nucleosome and plays a critical role in chromatin organization, genome stability, and epigenetic control of gene expression. As a core histone protein, H3 forms the foundation of nucleosome architecture while simultaneously serving as a primary platform for post-translational modifications that govern chromatin function. Histone H3 Antibody / HIST1H3A Core Chromatin Structure Antibody (clone RM188) is designed to detect total Histone H3 independent of post-translational modification state, providing a comprehensive and reliable measure of chromatin-associated H3 protein across biological systems. This antibody is part of a broader collection of Histone H3 antibodies used as normalization and reference tools for chromatin and epigenetic studies.

HIST1H3A antibody, also referred to as Histone H3 antibody and H3 antibody in the literature, recognizes all forms of Histone H3 regardless of modification status. This includes unmodified H3 as well as H3 carrying acetylation, methylation, phosphorylation, and other covalent modifications. By detecting H3 in a modification-independent manner, this antibody provides a true representation of total histone abundance rather than a subset defined by regulatory marks.

This recombinant rabbit monoclonal clone RM188 antibody is uniquely positioned as a central normalization and reference reagent for chromatin-based assays. It enables accurate interpretation of histone modification data by providing a stable baseline against which modification-specific signals can be quantified. This is particularly important in studies examining H3K4, H3K9, H3K27, H3K36, and H3K79 modifications, where relative enrichment rather than absolute signal intensity defines biological meaning.

At the molecular level, Histone H3 forms a heterotetramer with histone H4, which associates with two H2A-H2B dimers to generate the nucleosome core particle. Approximately 147 base pairs of DNA are wrapped around this histone octamer, forming the fundamental repeating unit of chromatin. The N-terminal tail of H3 extends outward from the nucleosome and is highly accessible to enzymatic modification, making it a central hub for epigenetic regulation.

Histone H3 is extensively modified at multiple residues, giving rise to a complex and combinatorial regulatory system often referred to as the histone code. Methylation at lysine 4 is associated with transcription initiation, lysine 9 and lysine 27 methylation are linked to repressive chromatin states, and lysine 36 methylation correlates with transcription elongation. Acetylation events generally promote chromatin accessibility, while phosphorylation can signal cellular stress or cell cycle transitions. These modifications act in concert to define chromatin states and regulate gene expression programs.

Unlike modification-specific antibodies that report on discrete regulatory states, this total H3 antibody provides a global measure of histone presence across all chromatin contexts. This distinction is critical for experimental design, as accurate normalization to total histone content is required to interpret changes in modification levels. Without such normalization, apparent differences in modification signals may reflect variation in chromatin content rather than true biological regulation.

Importantly, this antibody shows no cross reactivity with other histone proteins, ensuring specific detection of H3 without interference from H2A, H2B, or H4. This specificity is essential for maintaining accuracy in chromatin-based analyses and for distinguishing H3-specific signals from other histone components.

At the cellular level, Histone H3 localizes to the nucleus and is uniformly distributed across chromatin. Its consistent presence across genomic regions reflects its fundamental role in nucleosome formation and chromatin integrity, in contrast to modification-specific marks that exhibit localized enrichment patterns.

This antibody supports detection of total Histone H3, enabling investigation of chromatin structure, nucleosome organization, and epigenetic regulation while providing a critical normalization reference for quantitative analysis of histone modifications across diverse experimental systems.

Application Notes

The stated application concentrations are suggested starting points. Titration of the Histone H3 Antibody / HIST1H3A Core Chromatin Structure Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A peptide corresponding to the C-terminus of human Histone H3 was used as the immunogen for this Histone H3 Antibody / HIST1H3A Core Chromatin Structure Antibody.

Storage

Store the recombinant Histone H3 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

Histone H3 antibody, HIST1H3A core histone antibody, H3 chromatin antibody, histone H3 nuclear antibody