

PRODUCT INFORMATION



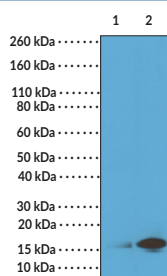
Histone H3K9Ac Monoclonal Antibody (RM161)

Item No. 32139

Overview and Properties

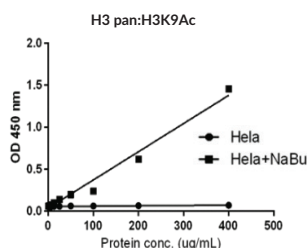
Contents: This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym: Acetylated Histone H3 Lysine 9
Immunogen: Peptide corresponding to H3K9Ac
Cross Reactivity: (+) H3K9Ac; (-) Unmodified H3K9, H3K4Ac, H3K14Ac, H3K18Ac, H3K23Ac, H3K27Ac, H3K36Ac, H3K56Ac, H3K79Ac, H3K122Ac
Species Reactivity: (+) Vertebrates
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥1 year
Storage Buffer: PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone: RM161
Host: Rabbit
Isotype: IgG
Applications: Chromatin immunoprecipitation (ChIP), ELISA, immunocytochemistry (ICC), immunohistochemistry (IHC), multiplex-based assays, and Western blot (WB); the recommended starting concentration is 2-10 µg/ml for ChIP, 0.2-1 µg/ml for ELISA, 0.5-2 µg/ml for ICC, 0.1-1 µg/ml for IHC, 0.05-0.5 µg/ml for multiplex-based assays, and 0.25-1 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

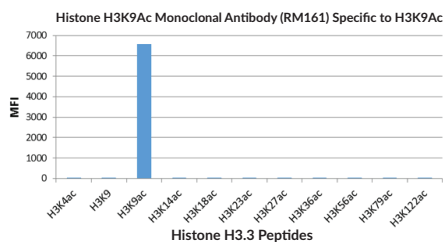


Lane 1: HeLa cells untreated
Lane 2: HeLa cells treated

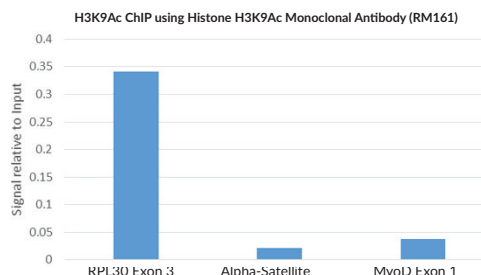
WB of acid extracts from HeLa cells untreated or treated with sodium butyrate using Histone H3K9Ac Monoclonal Antibody (RM161) at a concentration of 0.25 µg/ml.



Detection of H3K9Ac in HeLa whole cell lysate untreated or treated with sodium butyrate. Sandwich ELISA using Anti-Histone H3 pan Rabbit Monoclonal Antibody (Item No. 20724) as the capture antibody (1 µg/ml) and a biotinylated form of Histone H3K9Ac Monoclonal Antibody (RM161) (1 µg/ml) as the detection antibody.



Histone H3K9Ac Monoclonal Antibody (RM161) Reactivity to H3K9Ac. Histone H3K9Ac Monoclonal Antibody (RM161) specifically reacts to H3K9Ac. There is no cross reactivity with unmodified H3K9, H3K4Ac, H3K14Ac, H3K18Ac, H3K23Ac, H3K27Ac, H3K36Ac, H3K56Ac, H3K79Ac, and H3K122Ac.



ChIP performed on HeLa cells using Histone H3K9Ac Monoclonal Antibody (RM161). Real-time PCR was performed using primers specific to the gene indicated.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

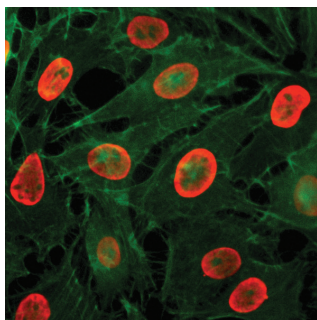
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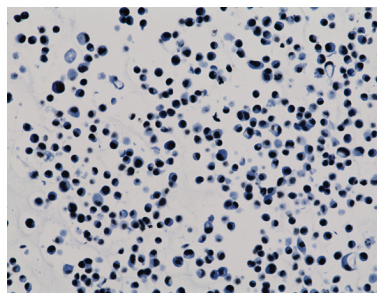
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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Immunocytochemical staining of HeLa cells treated with sodium butyrate using Histone H3K9Ac Monoclonal Antibody (RM161) (red). Actin filaments have been labeled with fluorescein phalloidin (green).



Immunohistochemical staining of HepG2 cells using Histone H3K9Ac Monoclonal Antibody (RM161).

Description

Histone H3 is a nuclear protein and a component of the nucleosome core, a basic unit of chromatin, that is essential for organizing genomic DNA in eukaryotic nuclei.¹ It is a globular protein that contains an unstructured N-terminal tail that extends outside of the nucleosome core and is subject to various post-translational modifications (PTMs), including methylation, phosphorylation, acetylation, and citrullination.^{1,2} Acetylation of histone H3 at lysine 9 (H3K9Ac) is associated with active gene transcription and can recruit the super elongation complex to chromatin through direct binding with the AF9 and ENL subunits.^{3,4} It increases at the IFN- β promoter in HeLa cells upon infection with Sendai virus.⁵ Acetylation of histone H3 at lysine 9 decreases following induction of DNA damage in HeLa and U2OS cells.⁶ Cayman's Histone H3K9Ac Monoclonal Antibody (RM161) can be used for chromatin immunoprecipitation (ChIP), ELISA, immunocytochemistry (ICC), immunohistochemistry (IHC), multiplex-based assay, and Western blot (WB) applications.

References

1. Hyun, K., Jeon, J., Park, K., *et al.* Writing, erasing and reading histone lysine methylations. *Exp. Mol. Med.* **49(4)**, e324 (2017).
2. Sharda, A., Amnekar, R.V., Natu, A., *et al.* Histone posttranslational modifications: Potential role in diagnosis, prognosis, and therapeutics of cancer. *Prognostic Epigenetics*. Sharma, S., *Academic Press* (2019).
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4. Gates, L.A., Shi, J., Rohira, A.D., *et al.* Acetylation on histone H3 lysine 9 mediates a switch from transcription initiation to elongation. *J. Biol. Chem.* **292(35)**, 14456-14472 (2017).
5. Agalioti, T., Chen, G., Thanos, D., *et al.* Deciphering the transcriptional histone acetylation code for a human gene. *Cell* **111(3)**, 381-392 (2002).
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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM