

PRODUCT INFORMATION



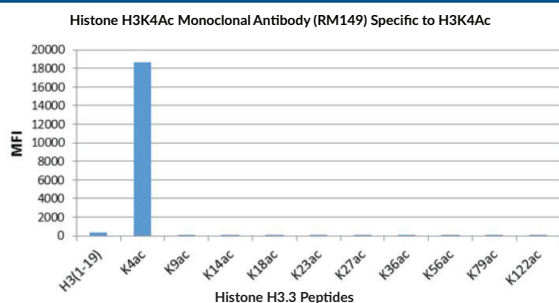
Histone H3K4Ac Monoclonal Antibody (RM149)

Item No. 32144

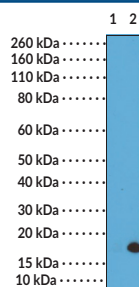
Overview and Properties

| | |
|----------------------------|---|
| Contents: | This vial contains 100 µg of protein A-purified monoclonal antibody. |
| Synonym: | Acetylated Histone H3 Lysine 4 |
| Immunogen: | Peptide corresponding to H3K4Ac |
| Cross Reactivity: | (+) H3K4Ac; (-) Unmodified histone H3 (1-19), H3K9Ac, 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 |
| Concentration: | 1.0 mg/ml |
| Clone: | RM149 |
| Host: | Rabbit |
| Isotype: | IgG |
| Applications: | Chromatin immunoprecipitation (ChIP), ELISA, Immunocytochemistry (ICC), Multiplex-based assays, and Western blot (WB); the recommended starting concentration for ChIP is 1-5 µg/ml, 0.2-1 µg/ml for ELISA, 0.5-2 µg/ml for ICC, 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

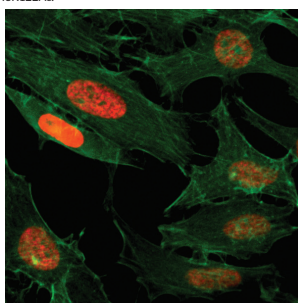


Histone H3K4Ac Monoclonal Antibody (RM149) specifically reacts to H3K4Ac. No cross reactivity with unmodified histone H3 (1-19), H3K9Ac, H3K14Ac, H3K18Ac, H3K23Ac, H3K27Ac, H3K36Ac, H3K56Ac, H3K79Ac, H3K122Ac.



Lane 1: Acid extracts from HeLa cells (untreated)
Lane 2: Acid extracts from HeLa cells (treated with sodium butyrate)

WB of acid extracts from HeLa cells untreated or treated with sodium butyrate using 0.5 µg/ml of Histone H3K4Ac Monoclonal Antibody (RM149). This showed a band of H3K4Ac in treated HeLa cells.



Immunocytochemistry of HeLa cells treated with sodium butyrate using Histone H3K4Ac Monoclonal Antibody (red) (RM149). Actin filaments have been labeled with fluorescein phalloidin (green).

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

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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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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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 4 (H3K4Ac) occurs primarily at the promoter and transcribed regions of active genes.³ H3K4Ac is enriched at the promoters of genes involved in the estrogen response and epithelial-to-mesenchymal transition (EMT) in MCF-7 and MDA-MB-231 breast cancer cells.⁴ Cayman's Histone H3K4Ac Monoclonal Antibody (RM149) can be used for chromatin immunoprecipitation (ChIP), ELISA, immunocytochemistry (ICC), 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., editor, *Academic Press* (2019).
3. Wang, Z., Zang, C., Rosenfeld, J.A., *et al.* Combinatorial patterns of histone acetylations and methylations in the human genome. *Nat. Genet.* **40(7)**, 897-903 (2008).
4. Messier, T.L., Gordon, J.A.R., Boyd, J.R., *et al.* Histone H3 lysine 4 acetylation and methylation dynamics define breast cancer subtypes. *Oncotarget* **7(5)**, 5094-5109 (2016).

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