

PRODUCT INFORMATION



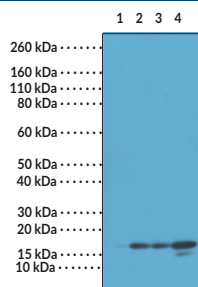
Histone H3K4 Monoclonal Antibody (RM186)

Item No. 32160

Overview and Properties

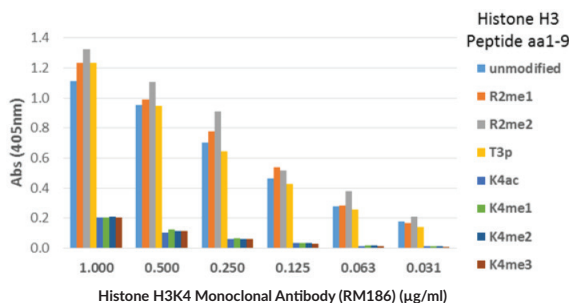
Contents: This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym: Unmodified Histone H3 Lysine 4
Immunogen: Peptide corresponding to the N-terminus of histone H3
Cross Reactivity: (+) Unmodified histone H3 (1-9), H3R2Me1 (1-9), H3R2Me2 (1-9), H3T3Ph (1-9);
(-) H3K4Ac (1-9), H3K4Me1 (1-9), H3K4Me2 (1-9), H3K4Me3 (1-9)
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 mg/ml
Clone: RM186
Host: Rabbit
Isotype: IgG
Applications: ELISA, immunocytochemistry (ICC), multiplex-based assays, and Western blot (WB); the recommended starting concentration for ELISA is 0.5-1 µg/ml, 0.5-2 µg/ml for ICC and multiplex-based assay, and 1-2 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

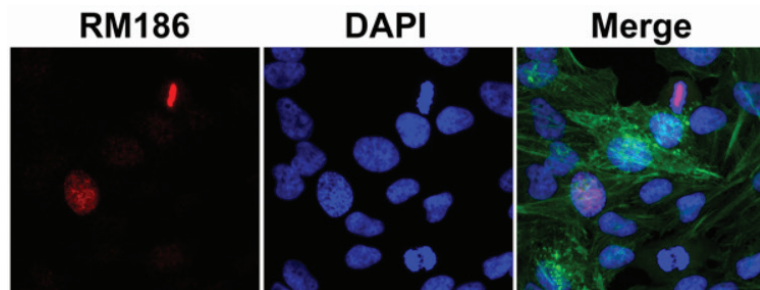


Lane 1: HeLa cells treated with sodium butyrate
Lane 2: HeLa cells treated with nocodazole
Lane 3: HeLa cells untreated
Lane 4: Recombinant histone H3.1 protein

WB of HeLa cells treated with sodium butyrate, nocodazole, or left untreated, and recombinant histone H3.1 protein using Histone H3K4 Monoclonal Antibody (RM186) at a concentration of 1 µg/ml.



Histone H3K4 Monoclonal Antibody (RM186) specifically recognizes unmodified histone H3 at lysine 4 and does not recognize acetylated, monomethylated, dimethylated, or trimethylated lysine 4. The antibody binding specificity allows for modifications of Arg2 or Thr3 in histone H3.



Immunofluorescent labeling of HeLa cells treated with sodium butyrate using Histone H3K4 Monoclonal Antibody (RM186) (red). 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
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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} Histone H3 lysine 4 (H3K4) is subject to acetylation and mono-, di-, and trimethylation, and these modifications are found in euchromatic promoter regions and associated with active transcription.^{3,4} Cayman's Histone H3K4 Monoclonal Antibody (RM186) can be used for 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. Pack, L.R., Yamamoto, K.R., and Fujimori, D.G. Opposing chromatin signals direct and regulate the activity of lysine demethylase 4C (KDM4C). *J. Biol. Chem.* **291(12)**, 6060-6070 (2016).
4. Guillemette, B., Drogaris, P., Lin, H.-H.S., *et al.* H3 lysine 4 is acetylated at active gene promoters and is regulated by H3 lysine 4 methylation. *PLoS Genet.* **7(3)**, e1001354 (2011).

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