

PRODUCT INFORMATION



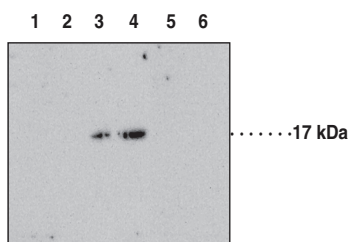
Histone H3K4Me2 Monoclonal Antibody

Item No. 14137

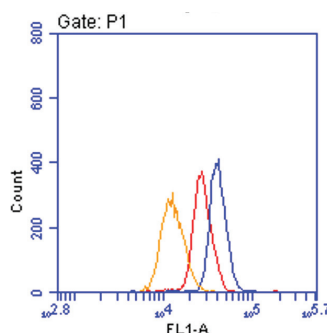
Overview and Properties

Contents: This vial contains 100 µg of protein G-purified antibody.
Synonyms: Histone H3 containing dimethylated lysine 4, Dimethylated Histone H3 Lysine 4
Immunogen: Synthetic peptide from the N terminal region of human histone H3K4Me2 conjugated to KLH.
Cross Reactivity: (+) H3K4Me (~50%), H3K27Me2 (~25%) H3K4Me2; (-) Unmodified histone H3, H3K9Me2, H3K36Me2, H3K4Me3
Species Reactivity: (+) Human; other species not tested
Uniprot No.: P68431
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥3 years
Storage Buffer: TBS, pH 7.4, with 50% glycerol, 0.1% BSA and 0.02% sodium azide
Host: Mouse
Isotype: IgG2ak
Applications: Flow cytometry (FC), Western blot (WB); the recommended starting dilution is 1:200. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: Histone H3 (unmodified) (human recombinant) (Item No. 10263) (2 µg)
Lane 2: Histone H3 (unmodified) (human recombinant) (Item No. 10263) (4 µg)
Lane 3: Core Histones (Item No. 11010) (8 µg)
Lane 4: Core Histones (Item No. 11010) (16 µg)
Lane 5: Core Histones (Item No. 11010) (8 µg) + 10 µg/ml immunizing peptide
Lane 6: Core Histones (Item No. 11010) (16 µg) + 10 µg/ml immunizing peptide



Orange: Secondary Control
Red: H3K4Me2 (5 µg/ml)
Blue: H3K4Me2 (10 µg/ml)

HeLa cells were permeabilized and fixed using 4% formaldehyde. Cells were blocked with 1% FBS and probed with the indicated antibody.

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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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} Dimethylation of histone H3 at lysine 4 (H3K4Me2) is found at active and primed but inactive loci.^{3,4} It is enriched in gene promoter regions and overlaps with transcription factor binding sites. Low tumor levels of H3K4Me2 positively correlate with decreased overall and disease-free survival in patients with pancreatic cancer.⁵ Cayman's Histone H3K4Me2 Monoclonal Antibody can be used for flow cytometry (FC) and Western blot (WB) applications. The antibody recognizes histone H3K4Me2 at 17 kDa from human samples.

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. Sims, R.J., III and Reinberg, D. Histone H3 Lys 4 methylation: Caught in a bind? *Genes Dev.* **20(20)**, 2779-2786 (2006).
4. Wang, Y., Li, X., and Hu, H. H3K4me2 reliably defines transcription factor binding regions in different cells. *Genomics* **103(2-3)**, 222-228 (2014).
5. Watanabe, T., Morinaga, S., Akaike, M., *et al.* The cellular level of histone H3 lysine 4 dimethylation correlates with response to adjuvant gemcitabine in Japanese pancreatic cancer patients treated with surgery. *Eur. J. Surg. Oncol.* **38(11)**, 1051-1057 (2012).

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