

PRODUCT INFORMATION



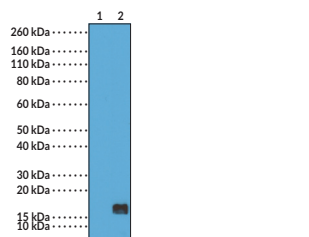
Histone H3K9Me1 Monoclonal Antibody (RM150)

Item No. 32145

Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonyms:	Monomethylated Histone H3 Lysine 9
Immunogen:	Peptide corresponding to H3K9Me1
Cross Reactivity:	(+) H3K9Me1; (-) Unmodified histone H3 (1-19), H3K9Me2, H3K9Me3, H3K4Me1, H3K4Me2, H3K4Me3, H3K14Me2, H3K18Me1, H3K18Me2, H3K23Me1, H3K23Me2, H3K27Me1, H3K27Me2, H3K27Me3, H3K36Me1, H3K36Me2, H3K36Me3, H3K56Me1, H3K79Me1, H3K79Me2, H3K79Me3
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:	RM150
Host:	Rabbit
Isotype:	IgG
Applications:	Chromatin immunoprecipitation (ChIP), ELISA, immunocytochemistry (ICC), multiplex-based assays, Western blot (WB); the recommended starting concentration is 2-10, 0.5-2, and 0.1-0.5 µg/ml for ChIP, ICC, and multiplex-based assays, respectively, and 0.2-1 µg/ml for ELISA and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

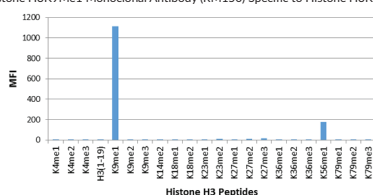
Images



Lane 1: Recombinant histone H3.3
Lane 2: Acid extracts of HeLa cells

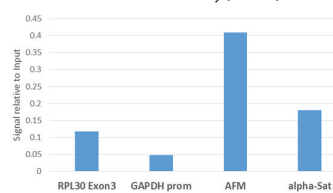
WB of recombinant histone H3.3 and acid extracts of HeLa cells, using Histone H3K9Me1 Monoclonal Antibody (RM150) at 0.5 µg/ml, showed a band of H3K9Me1 in HeLa cells.

Histone H3K9Me1 Monoclonal Antibody (RM150) Specific to Histone H3K9Me1

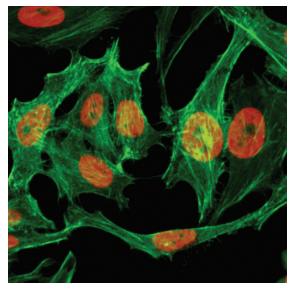


Histone H3K9Me1 Monoclonal Antibody (RM150) Specifically Reacts to H3K9Me1. No cross reactivity with unmodified H3K9, H3K9Me2, H3K9Me3, or other methylations in histone H3.

H3K9Me1 ChIP using Histone H3K9Me1 Monoclonal Antibody (RM150)



ChIP Performed on HeLa Cells Using Histone H3K9Me1 Monoclonal Antibody (RM150) (5 µg). RT-PCR was performed using primers specific to the gene indicated.



Immunocytochemistry of HeLa cells Treated with Sodium Butyrate Using Histone H3K9Me1 Monoclonal Antibody (RM150) (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} Monomethylation of histone H3 at lysine 9 (H3K9Me1) is found at euchromatin regions of silenced genes and is correlated with gene repression.³ Recognition of H3K9Me1 by the H3K9 demethylases GLP and G9a is essential to embryonic stem cell differentiation and viability in mice.⁴ Cytoplasmic localization of H3K9Me1 is associated with reduced disease-specific mortality risk in patients with oral and/or oropharyngeal squamous cell carcinoma.⁵ Cayman's Histone H3K9Me1 Monoclonal Antibody (RM150) 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. Gupta, J., Kumar, S., Li, J., *et al.* Histone H3 lysine 4 monomethylation (H3K4me1) and H3 lysine 9 monomethylation (H3K9me1): Distribution and their association in regulating gene expression under hyperglycaemic/hyperinsulinemic conditions in 3T3 cells. *Biochimie* **94(12)**, 2656-2664 (2012).
4. Liu, N., Zhang, Z., Wu, H., *et al.* Recognition of H3K9 methylation by GLP is required for efficient establishment of H3K9 methylation, rapid target gene repression, and mouse viability. *Genes Dev.* **29(4)**, 379-393 (2015).
5. Maia, L.L., Peterle, G.T., Dos Santos, M., *et al.* JMJD1A, H3K9me1, H3K9me2 and ADM expression as prognostic markers in oral and oropharyngeal squamous cell carcinoma. *PLoS One* **13(3)**, e019884 (2018).

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