

PRODUCT INFORMATION

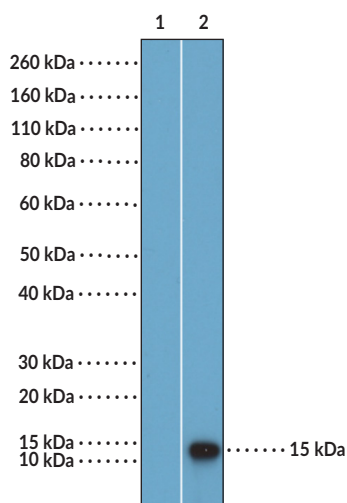
Histone H4K12Me1 Rabbit Monoclonal Antibody (Clone RM458)

Item No. 42793

Overview and Properties

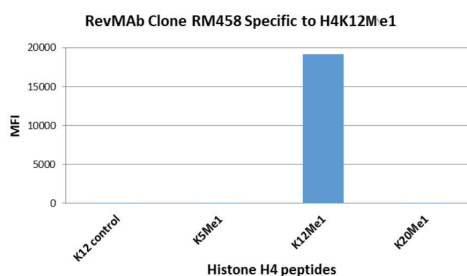
Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Monomethylated Histone H4 Lysine 12
Immunogen:	A peptide corresponding to H4K12Me1
Cross Reactivity:	(+) H4K12Me1; (-) Unmodified H4K12, H4K20Me1, H4K5Me1
Species Reactivity:	(+) Human, vertebrates
Molecular Weight:	15 kDa
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:	RM458
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, Multiplex-based assays, and Western blot (WB); the recommended starting concentration is 0.5-1 µg/ml for ELISA, 0.01-2 µg/ml for multiplex-based assay, and 0.01-0.5 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: Recombinant histone H4
Lane 2: Acid extracts of HeLa cells

WB of acid extracts of HeLa cells using Histone H4K12Me1 Rabbit Monoclonal Antibody (Clone RM458) at a concentration of 0.02 µg/ml.



RM458 specifically reacts to histone H4 monomethylated at lysine 12 (K12Me1). No cross-reactivity with non-modified lysine 12, or other monomethylations in histone H4.

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 H4 is one of four core histone proteins that are involved in the organization of DNA into chromatin.¹ Histones are globular proteins with unstructured N-terminal tails and are subject to a variety of post-translational modifications, such as methylation, acetylation, phosphorylation, and citrullination, that can influence chromatin structure and regulate gene transcription.^{1,2} Histone H4 can be monomethylated at lysine 12 (H4K12Me1) by Set5, which is involved in cell growth and the stress response in yeast.³ H4K12 is also monomethylated by N⁶-adenine-specific DNA methyltransferase 1 (N6AMT1) and SET domain-containing protein 6 (SETD6) in prostate cancer cells *in vitro*.^{4,5} Cayman's Histone H4K12Me1 Rabbit Monoclonal Antibody (Clone RM458) can be used for ELISA, multiplex-based assay, and Western blot (WB) applications. The antibody recognizes H4K12Me1 at 15 kDa from human samples.

References

1. Wang, Y., Li, M., Stadler, S., *et al.* Histone hypercitrullination mediates chromatin decondensation and neutrophil extracellular trap formation. *J. Cell Biol.* **184**(2), 205-213 (2009).
2. Hyun, K., Jeon, J., Park, K., *et al.* Writing, erasing and reading histone lysine methylations. *Exp. Mol. Med.* **49**(4), e324 (2017).
3. Green, E.M., Mas, G., Young, N.L., *et al.* Methylation of H4 lysines 5, 8 and 12 by yeast Set5 calibrates chromatin stress responses. *Nat. Struct. Mol. Biol.* **19**(3), 361-363 (2012).
4. Metzger, E., Wang, S., Urban, S., *et al.* KMT9 monomethylates histone H4 lysine 12 and controls proliferation of prostate cancer cells. *Nat. Struct. Mol. Biol.* **26**(5), 361-371 (2019).
5. Weirich, S., Ulu, G.T., Chandrasekaran, T.T., *et al.* Distinct specificities of the HEMK2 protein methyltransferase in methylation of glutamine and lysine residues. *Protein Sci.* **33**(2), e4897 (2024).

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