

PRODUCT INFORMATION

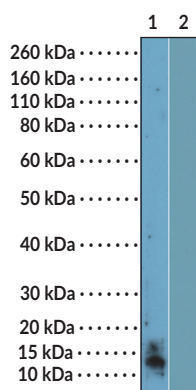
Histone H4R3Me2s Rabbit Monoclonal Antibody (Clone RM459)

Item No. 42794

Overview and Properties

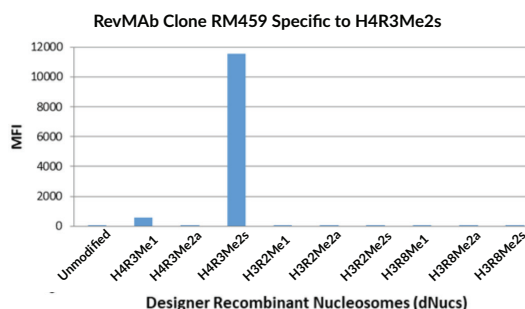
Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Symmetrically Dimethylated Histone H4 Arginine 3
Immunogen:	A peptide corresponding to H4R3Me2s
Cross Reactivity:	(+) H4R3Me2s; (-) Unmodified H4R3, H4R3Me1, H4R3Me2a, H3R2Me1, H3R2Me2a, H3R2Me2s, H3R8Me1, H3R8Me2a, H3R8Me2s
Species Reactivity:	(+) Human, 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:	RM459
Host:	Rabbit
Isotype:	IgG
Applications:	Multiplex-based assay and Western blot (WB); the recommended starting concentration is 0.001-0.1 µg/ml for multiplex-based assay and 0.1-2 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: K562 cells
Lane 2: Recombinant histone H4

WB of acid extracts of K562 cells and recombinant histone H4, using Histone H4R3Me2s Rabbit Monoclonal Antibody (Clone RM459) at a concentration of 0.1 µg/ml.



Luminex analysis of Designer Recombinant Nucleosomes (dNucs) with Histone H4R3Me2s Rabbit Monoclonal Antibody (Clone RM459). Biotinylated dNucs with unmodified or different modified arginine pre-bind to Luminex beads coated with streptavidin. The beads were then incubated with 1.6 ng/ml of Histone H4R3Me2s Rabbit Monoclonal Antibody (Clone RM459), followed by PE-conjugated goat anti-rabbit IgG secondary 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

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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 posttranslational modifications, such as methylation, acetylation, phosphorylation, and citrullination, that can influence chromatin structure and regulate gene transcription.^{1,2} Histone H4 symmetrical dimethylation at arginine 3 (H4R3Me2s) is regulated by protein arginine methyltransferase 5 (PRMT5) and PR domain zinc finger protein 4 (PRDM4).³ H4R3Me2s is enriched and associated with gene repression and cell growth in BGC-823 and SGC-7901 gastric cancer cells.⁴ Suppression of symmetrical dimethylation of H4R3 is associated with cardiomyocyte hypertrophy.⁵ Cayman's Histone H4R3Me2s Monoclonal Antibody (Clone RM459) can be used for multiplex-based assay and Western blot (WB) applications.

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. Cui, J.Y., Fu, Z.D., and Dempsey, J. The role of histone methylation and methyltransferases in gene regulation. *Toxicoepigenetics Core Principles and Applications* 31-84 (2018).
4. Liu, M., Yao, B., Gui, T., *et al.* PRMT5-dependent transcriptional repression of c-Myc target genes promotes gastric cancer progression. *Theranostics* **10**(10), 4437-4452 (2020).
5. Cai, S., Wang, P., Xie, T., *et al.* Histone H4R3 symmetric di-methylation by Prmt5 protects against cardiac hypertrophy via regulation of Filip1L/ β -catenin. *Pharmacol. Res.* **161**, 105104 (2020).

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