PRODUCT INFORMATION

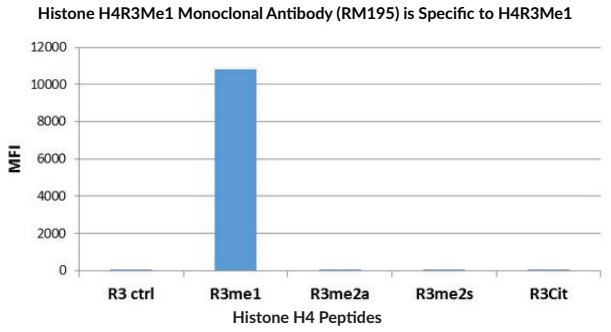
Histone H4R3Me1 Monoclonal Antibody (RM195)

Item No. 32155

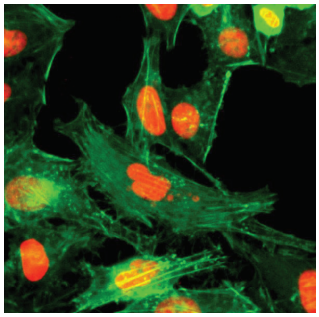
Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Monomethylated Histone H4 Arginine 3
Immunogen:	Peptide corresponding to H4R3Me1
Cross Reactivity:	(+) H4R3Me1; (-) Unmodified H4R3, H4R3Me2a, H4R3Me2s, H4R3Cit
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:	1.0 mg/ml
Clone:	RM195
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, Immunocytochemistry (ICC), Multiplex-based assays, and Western blot (WB); the recommended starting concentration for ELISA and multiplex-based assays is 0.2-1 µg/ml, 1-2 µg/ml for ICC and 0.5-2 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

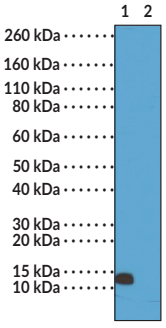
Images



Histone H4R3Me1 Monoclonal Antibody (RM195) specifically reacts to H4R3Me1. No cross reactivity with unmodified H4R3, asymetrical H4R3Me2 (H4R3Me2a), symmetrical H4R3Me2 (H4R3Me2s), or H4R3Cit.



Immunofluorescent labeling of HeLa cells treated with sodium butyrate, labeled with Histone H4R3Me1 Monoclonal Antibody (RM195) (red). Actin filaments have been labeled with fluorescein phalloidin (green).



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

WB of acid extracts of HeLa cells and recombinant histone H4 using 0.5 µg/ml of Histone H4R3Me1 Monoclonal Antibody (RM195). This showed a band of H4R3Me1 in HeLa cells.

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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 arginine 3 (H4R3Me1) by protein arginine methyltransferase 1 (PRMT1), PRMT5, and PRMT6.[3] Retinal levels of H4R3Me1 are reduced in a rat model of diabetes induced by streptozotocin (STZ; Item No. 13104) compared with non-diabetic controls.[4] Cayman's Histone H4R3Me1 Monoclonal Antibody (RM195) can be used for ELISA, immunocytochemistry (ICC), 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.* McCullough and S. Dolinoy, D., editors, 1st edition, *Academic Press* (2018).
4. Wang, W., Sidoli, S., Zhang, W., *et al.* Abnormal levels of histone methylation in the retinas of diabetic rats are reversed by minocycline treatment. *Sci. Rep.* **7**, 45103 (2017).

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