PRODUCT INFORMATION

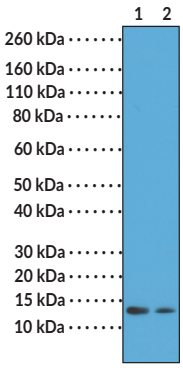
Histone H4K12Ac Monoclonal Antibody (RM202)

Item No. 32162

Overview and Properties

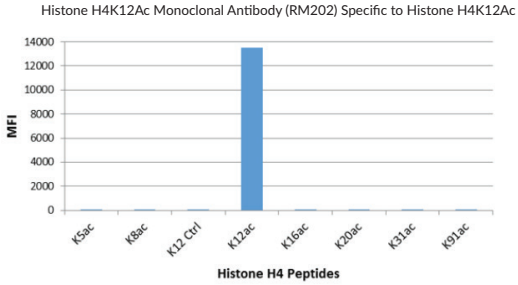
Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Acetylated Histone H4 Lysine 12
Immunogen:	Peptide corresponding to H4K12Ac
Cross Reactivity:	(+) H4K12Ac; (-) Unmodified H4K12, H4K5Ac, H4K8Ac, H4K16Ac, H4K20Ac, H4K31Ac, H4K91Ac
Species Reactivity:	(+) 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:	RM202
Host:	Rabbit
Isotype:	IgG
Applications:	Chromatin immunoprecipitation (ChIP), ELISA, immunocytochemistry (ICC), multiplex-based assays, and Western blot (WB); the recommended starting concentration is 1-5 µg/ml for ChIP, 0.5-1 µg/ml for ELISA, and 0.5-2 µg/ml for ICC, multiplex-based assays, and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

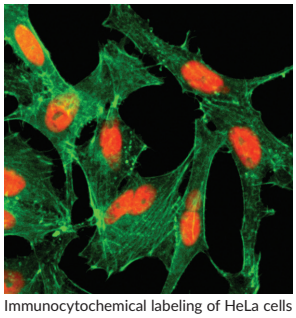


Lane 1: Acid extracts of HeLa cells treated
Lane 2: Acid extracts of HeLa cells untreated

WB of acid extracts from HeLa cells treated with sodium butyrate or HeLa cells untreated using Histone H4K12Ac Monoclonal Antibody (RM202) at a concentration of 0.5 µg/ml.



Histone H4K12Ac Monoclonal Antibody (RM202) specifically reacts to acetylated H4K12Ac. No cross reactivity with unmodified H4K16, H4K5Ac, H4K8Ac, H4K16Ac, H4K20Ac, H4K31Ac, or H4K91Ac.



Immunocytochemical labeling of HeLa cells treated with sodium butyrate, using Histone H4K12Ac Monoclonal Antibody (RM202) (red). Actin filaments have been labeled with fluorescein phalloidin (green).

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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] Acetylation of histone H4 at lysine 12 (H4K12Ac) is associated with chromatin relaxation and gene transcription.[3] Levels of H4K12Ac are elevated in two transgenic mouse models of Alzheimer's disease, as well as in monocytes isolated from patients with mild cognitive impairment and Alzheimer's disease. H4K12Ac levels are also increased in response to chronic alcohol exposure and positively correlate with the release of the pro-inflammatory cytokine chemokine (C-C motif) ligand 8 (CCL8) in monocyte-derived dendritic cells.[4] Cayman's H4K12Ac Monoclonal Antibody (RM202) can be used for chromatin immunoprecipitation (ChIP), 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. Plagg, B., Ehrlich, D., Kniewallner, K.M., *et al.* Increased acetylation of histone H4 at lysine 12 (H4K12) in monocytes of transgenic Alzheimer's mice and in human patients. *Curr. Alzheimer Res.* **12(8)**, 752-760 (2015).
4. Parira, T., Figueroa, F., Laverde, A., *et al.* Novel detection of post-translational modifications in human monocyte-derived dendritic cells after chronic alcohol exposure: Role of inflammation regulator H4K12ac. *Sci. Rep.* **7(1)**, 11236 (2017).

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