PRODUCT INFORMATION

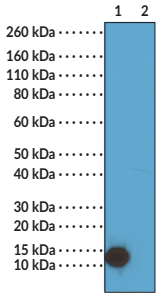
Histone H4K5Ac Monoclonal Antibody (RM199)

Item No. 32156

Overview and Properties

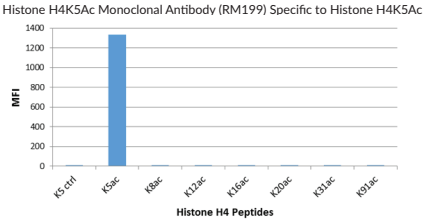
Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Acetylated Histone H4 Lysine 5
Immunogen:	Peptide corresponding to H4K5Ac
Cross Reactivity:	(+) H4K5Ac; (-) Unmodified H4K5, H4K8Ac, H4K12Ac, H4K16Ac, H4K20Ac, H4K31Ac, H4K91Ac
Species Reactivity:	(+) Vertebrates
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 mg/ml
Clone:	RM199
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, immunocytochemistry (ICC), multiplex-based assays, and Western blot (WB); the recommended starting concentration is 0.5-2 and 0.05-0.2 µg/ml for 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

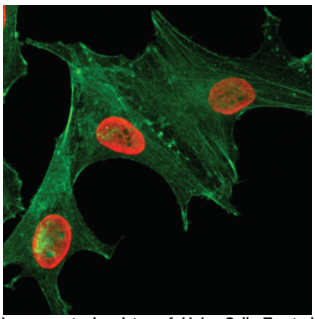


Lane 1: Acid extracts of HeLa cells
Lane 2: Recombinant histone H4

WB of acid extracts of HeLa cells and recombinant histone H4. Using Histone H4K5Ac Monoclonal Antibody (RM199) at 0.2 µg/ml showed a band of H4K5Ac in HeLa cells.



Histone H4K5Ac monoclonal antibody (RM199) specifically reacts to H4K5Ac. No cross reactivity with unmodified H4K5, H4K8Ac, H4K12Ac, H4K16Ac, H4K20Ac, H4K31Ac, or H4K91Ac.



Immunocytochemistry of HeLa Cells Treated with Sodium Butyrate using Histone H4K5Ac Monoclonal Antibody (RM199) (red). Actin filaments have been labeled with fluorescein phalloidin (green).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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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] Acetylation of histone H4 at lysine 5 (H4K5Ac) is enriched in promoter regions and coding sequences in mouse hippocampus and is associated with active chromatin.[3,4] Hippocampal levels of H4K5Ac increase following contextual fear conditioning in mice.[3] Levels of H4K5Ac are elevated in postmortem brain tissue isolated from fetuses with spina bifida compared with healthy controls.[5] Global levels of H4K5Ac are decreased in blast cells from patients with acute myeloid leukemia compared with healthy individuals, and low levels of H4K5Ac are associated with poor prognosis in these patients.[6] Cayman's Histone H4K5Ac Monoclonal Antibody (RM199) 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. Park, C.S., Rehrauer, H., and Mansuy, I.M. Genome-wide analysis of H4K5 acetylation associated with fear memory in mice. *BMC Genomics* **14**, 539 (2013).
4. Zhao, R., Nakamura, T., Fu, Y., *et al.* Gene bookmarking accelerates the kinetics of post-mitotic transcriptional re-activation. *Nat. Cell Biol.* **13(11)**, 1295-304 (2011).
5. Li, D., Wan, C., Bai, B., *et al.* Identification of histone acetylation markers in human fetal brains and increased H4K5ac expression in neural tube defects. *Mol. Genet. Genomic Med.* **7(12)**, e1002 (2019).
6. Sauer, T., Arteaga, M.F., Isken, F., *et al.* MYST2 acetyltransferase expression and Histone H4 Lysine acetylation are suppressed in AML. *Exp. Hematol.* **43(9)**, 794-802 (2015).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM