PRODUCT INFORMATION

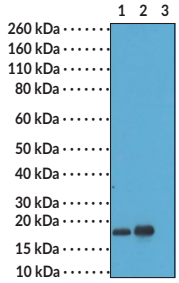
Histone H3K23Ac Monoclonal Antibody (RM169)

Item No. 32161

Overview and Properties

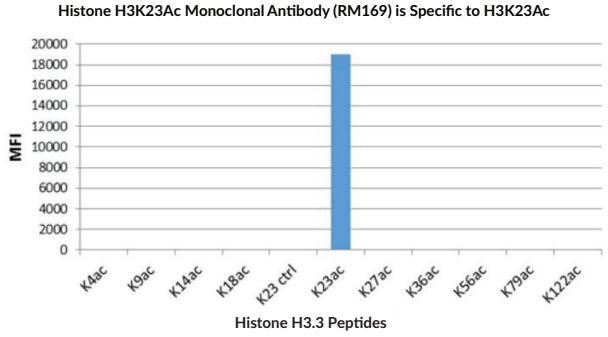
Contents:	This vial contains 100 µg of protein A affinity-purified monoclonal antibody.
Synonym:	Acetylated Histone H3 Lysine 23
Immunogen:	Peptide corresponding to H3K23Ac
Cross Reactivity:	(+) H3K23Ac; (-) Unmodified H3K23, H3K4Ac, H3K9Ac, H3K14Ac, H3K18Ac, H3K27Ac, H3K36Ac, H3K56Ac, H3K79Ac, H3K122Ac
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:	RM169
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, Immunocytochemistry (ICC), Multiplex-based assays, and Western blot (WB); the recommended starting concentration for ELISA is 0.5-1 µg/ml, 1-2 µg/ml for ICC, 0.2-1 µg/ml for multiplex-based assays, and 0.5-2 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

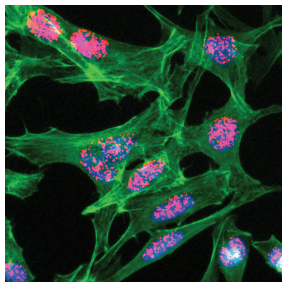


Lane 1: Acid extracts from HeLa cells (untreated)
Lane 2: Acid extracts from HeLa cells (treated with sodium butyrate)
Lane 3: Recombinant histone H3.3

WB of acid extracts of HeLa cells untreated or treated with sodium butyrate and recombinant histone H3.3 using 1 µg/ml of Histone H3K23Ac Monoclonal Antibody (RM169). This showed a band of H3K23Ac in treated HeLa cells.



Histone H3K23Ac Monoclonal Antibody (RM169) specifically reacts to histone H3 acetylated at lysine 23 (K23ac). No cross reactivity with umodified H3K23, H3K4Ac, H3K9Ac, H3K14Ac, H3K18Ac, H2K27Ac, H3K36Ac, H3K56Ac, H3K79Ac, or H3K122Ac.



Immunofluorescent labeling of HeLa cells treated with sodium butyrate, labeled with Histone H3K23Ac Monoclonal Antibody (RM169) (red). Actin filaments have been labeled with fluorescein phalloidin (green).

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Description

Histone H3 is a nuclear protein and a component of the nucleosome core, a basic unit of chromatin, that is essential for organizing genomic DNA in eukaryotic nuclei.[1] It is a globular protein that contains an unstructured N-terminal tail that extends outside of the nucleosome core and is subject to various post-translational modifications (PTMs), including methylation, phosphorylation, acetylation, and citrullination.[1,2] Acetylation of histone H3 at lysine 23 (H3K23Ac) is associated with transcriptional activation.[3,4] Levels of H3K23Ac are decreased in control, but increased in uninephrectomized, *db/db* diabetic mouse kidney compared with wild-type mouse kidney.[5] Cayman's Histone H3K23Ac Monoclonal Antibody (RM169) can be used for ELISA, immunocytochemistry (ICC), multiplex-based assay, and Western blot (WB) applications.

References

1. Hyun, K., Jeon, J., Park, K., *et al.* Writing, erasing and reading histone lysine methylations. *Exp. Mol. Med.* **49(4)**, e324 (2017).
2. Sharda, A., Amnekar, R.V., Natu, A., *et al.* Histone posttranslational modifications: Potential role in diagnosis, prognosis, and therapeutics of cancer. *Prognostic Epigenetics.* Sharma, S., editor, *Academic Press* (2019).
3. Keating, S.T., van Diepen, J.A., Risken, N.P., *et al.* Epigenetics in diabetic nephropathy, immunity and metabolism. *Diabetologia* **61(1)**, 6-20 (2018).
4. Nakanishi, S., Sanderson, B.W., Delventhal, K.M., *et al.* A comprehensive library of histone mutants identifies nucleosomal residues required for H3K4 methylation. *Nat. Struct. Mol. Biol.* **15(8)**, 881-888 (2008).
5. Sayyed, S.G., Gaikwad, A.B., Lichtnekert, J., *et al.* Progressive glomerulosclerosis in type 2 diabetes is associated with renal histone H3K9 and H3K23 acetylation, H3K4 dimethylation and phosphorylation at serine 10. *Nephrol. Dial. Transplant.* **25(6)**, 1811-1817 (2010).

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