

PRODUCT INFORMATION



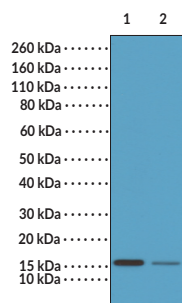
Histone H2BK20Ac Monoclonal Antibody (Clone RM235)

Item No. 32173

Overview and Properties

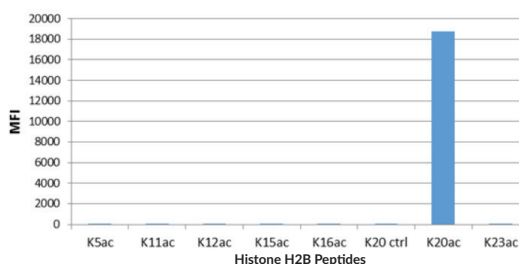
Contents: This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym: Acetylated Histone H2B Lysine 20
Immunogen: Peptide corresponding to H2BK20Ac
Cross Reactivity: (+) H2BK20Ac; (-) Unmodified H2BK20, H2BK5Ac, H2BK11Ac, H2BK12Ac, H2BK15Ac, H2BK16Ac, H2BK23Ac
Species Reactivity: (+) 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: RM235
Host: Rabbit
Isotype: IgG
Applications: ELISA, Immunocytochemistry (ICC), Multiplex-based assays, and Western blot (WB); the recommended starting concentration for ELISA is 0.2-1 µg/ml, 1-2 µg/ml for ICC, 0.1-0.5 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

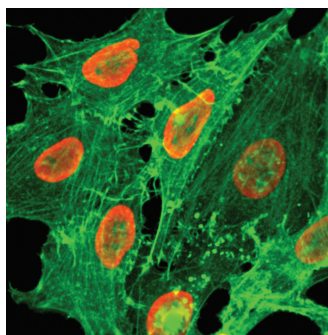


Lane 1: HeLa cells treated
Lane 2: HeLa cells untreated

WB of acid extracts of HeLa cells treated with sodium butyrate or left untreated using Histone H2BK20Ac Monoclonal Antibody (Clone RM235) at a concentration of 0.5 µg/ml.



Histone H2BK20Ac Monoclonal Antibody (Clone RM235) specifically reacts to H2BK20Ac. There is no cross reactivity with unmodified H2BK20, H2BK5Ac, H2BK11Ac, H2BK12Ac, H2BK15Ac, H2BK16Ac, or H2BK23Ac.



Immunofluorescent labeling of HeLa cells treated with sodium butyrate using Histone H2BK20Ac Monoclonal Antibody (Clone RM235) (red). Actin filaments have been labeled with fluorescein phalloidin (green).

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 H2B 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 a histone fold domain with a C-terminal α -helix that facilitates nucleosome interactions and chromatin compaction, as well as an unstructured N-terminal tail that extends outside of the nucleosome core, both of which are subject to various post-translational modifications (PTMs), including ubiquitination, acetylation, methylation, and phosphorylation.¹⁻³ Acetylation of histone H2B at lysine 20 (H2BK20Ac) at enhancer regions serves as a hallmark of active enhancers.⁴ H2BK20Ac is enriched at cell type-specific promoter regions and is required for targeting of the histone variant macroH2A1 to chromatin containing acetylated histone H2B.^{4,5} Cayman's Histone H2BK20Ac Monoclonal Antibody (Clone RM235) 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. Wyrick, J.J. and Parra, M.A. The role of histone H2A and H2B post-translational modifications in transcription: A genomic perspective. *Biochim. Biophys. Acta* **1789(1)**, 37-44 (2009).
3. Wang, C.-Y., Hua, C.-Y., Hsu, H.-E., *et al.* The C-terminus of histone H2B is involved in chromatin compaction specifically at telomeres, independently of its monoubiquitylation at lysine 123. *PLoS One* **6(7)**, e22209 (2011).
4. Kumar, V., Rayan, N.A., Muratani, M., *et al.* Comprehensive benchmarking reveals H2BK20 acetylation as a distinctive signature of cell-state-specific enhancers and promoters. *Genome Res.* **26(5)**, 612-623 (2016).
5. Ruiz, P.D. and Gamble, M.J. MacroH2A1 chromatin specification requires its docking domain and acetylation of H2B lysine 20. *Nat. Commun.* **9(1)**, 5143 (2018).

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