

PRODUCT INFORMATION

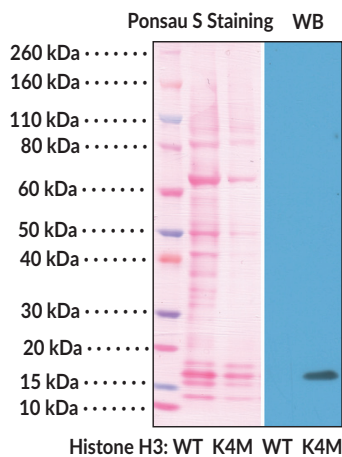
Histone H3^{K4M} Rabbit Monoclonal Antibody (Clone RM363))

Item No. 42813

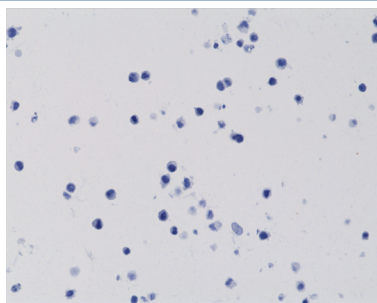
Overview and Properties

Contents:	This vial contains 100 µl of protein-A affinity purified antibody.
Synonym:	H3 K4M
Immunogen:	Peptide corresponding to histone H3 ^{K4M}
Cross Reactivity:	(+) Histone H3 ^{K4M} ; (-) Histone H3
Species Reactivity:	Species Independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM363
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, Immunohistochemistry (IHC), and Western blot (WB) applications; the recommended starting dilution is 1:500-1:2,500 for ELISA, 1:100-1:500 for IHC, and 1:1,000-1:10,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

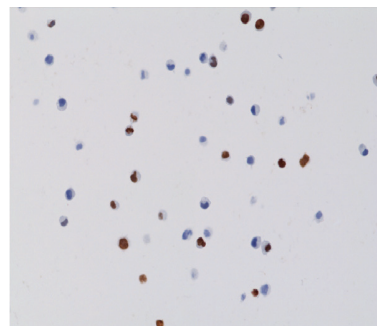
Images



WB of cell lysates prepared from 293T transfected with a DNA construct encoding K4M mutant or wild-type Histone H3 using Histone H3^{K4M} Rabbit Monoclonal Antibody (Clone RM363).



Immunohistochemical staining of formalin-fixed and paraffin-embedded 293T cells transfected with a DNA construct encoding wild-type Histone H3, stained with HHistone H3^{K4M} Rabbit Monoclonal Antibody (Clone RM363).



Immunohistochemical staining of formalin-fixed and paraffin-embedded 293T cells transfected with a DNA construct encoding K4M mutant Histone H3, stained with Histone H3^{K4M} Rabbit Monoclonal Antibody (Clone RM363).

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
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Histone 3 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 Histone H3 has a key role in transcriptional regulation.⁴ Expression of histone H3.3, a subtype of histone 3, containing a lysine-to-methionine substitution at residue 4 (H3.3^{K4M}) decreases the levels of histone H3K4Me1 and H3K4Me3 in primary mouse cortical neurons.⁵ Cayman's Histone H3^{K4M} Rabbit Monoclonal Antibody (Clone RM363) can be used for ELISA, immunohistochemistry (IHC), 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. Bhaumik, S.R., Smith, E., and Shilatifard, A. Covalent modifications of histones during development and disease pathogenesis. *Nat. Struct. Mol. Biol.* **14**(11), 1008-1016 (2007).
5. Warren, S., Xiong, S., Robles-Magallanes, D., *et al.* A vector system encoding histone H3 mutants facilitates manipulations of the neuronal epigenome. *Sci. Rep.* **14**(1), 24415 (2024).

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