

PRODUCT INFORMATION

Histone H3^{K27M} Rabbit Monoclonal Antibody - Biotinylated (Clone RM192)

Item No. 42867

Overview and Properties

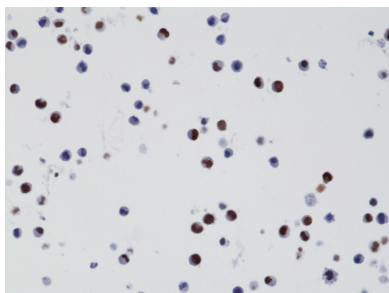
Contents:	This vial contains 50 µl of protein A-affinity purified monoclonal antibody.
Immunogen:	A peptide corresponding to histone H3 ^{K27M}
Cross Reactivity:	(+) Histone H3 ^{K27M} ; (-) Histone H3
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	50% Glycerol/PBS with 1% BSA and 0.09% sodium azide
Clone:	RM192
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, Immunohistochemistry (IHC), Western blot (WB); the recommended starting dilution for ELISA and WB is 1:250-1:2,500 and 1:100-1:500 for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: WT
Lane 2: K27M

WB of cell/tissue lysates prepared from 293T and transfected with a DNA construct encoding wild type (WT) or K27M mutant proteins of Histone H3.3 using Histone H3^{K27M} Rabbit Monoclonal Antibody - Biotinylated (Clone RM192)



Immunohistochemical staining of formalin-fixed and paraffin-embedded 293T cells transfected with a DNA construct encoding H3^{K27M} mutant using Histone H3^{K27M} Rabbit Monoclonal Antibody - Biotinylated (Clone RM192) at a concentration of 0.01 µg/ml.

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 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 containing a lysine-to-methionine substitution at residue 27 (H3^{K27M}) is associated with tumor progression in pediatric midline gliomas.⁵ Cayman's Histone H3^{K27M} Rabbit Monoclonal Antibody - Biotinylated (Clone RM192) 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. Filbin, M.G., Tirosh, I., Hovestadt, V., *et al.* Developmental and oncogenic programs in H3K27M gliomas dissected by single-cell RNA-seq. *Science* **360**(6386), 331-335 (2018).