

# PRODUCT INFORMATION



## Histone H3K9Me3 Monoclonal Antibody (RM389)

Item No. 32138

### Overview and Properties

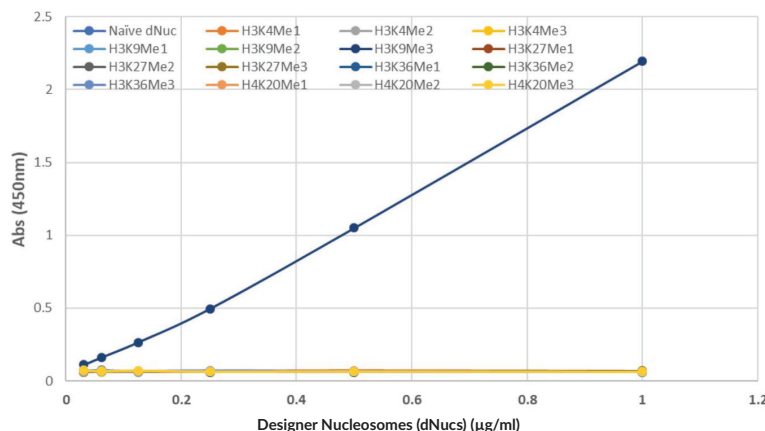
<b>Contents:</b>	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
<b>Synonym:</b>	Trimethylated Histone H3 Lysine 9
<b>Immunogen:</b>	Peptide corresponding to H3K9Me3
<b>Cross Reactivity:</b>	(+) H3K9Me3; (-) Unmodified H3K9, H3K9Me1, H3K9Me2, H3K4Me1, H3K4Me2, H3K4Me3, H3K27Me1, H3K27Me2, H3K27Me3, H3K36Me1, H3K36Me2, H3K36Me3, H4K20Me1, H4K20Me2, H4K20Me3
<b>Species Reactivity:</b>	(+) Vertebrates
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Storage Buffer:</b>	PBS, with 50% glycerol, 1% BSA, and 0.09% sodium azide
<b>Concentration:</b>	1.0 mg/ml
<b>Clone:</b>	RM389
<b>Host:</b>	Rabbit
<b>Isotype:</b>	IgG
<b>Applications:</b>	ELISA, Multiplex-based assays, and Western blot (WB); the recommended starting concentration for ELISA is 1-10 µg/ml and 0.5-2 µg/ml for multiplex-based assays and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Lane 1: Recombinant histone H3.3  
Lane 2: Acid extracts of HeLa cells

WB of recombinant histone H3.3 and acid extracts of HeLa cells, using 0.5 µg/ml of Histone H3K9Me3 Monoclonal Antibody (RM389).



Histone H3K9Me3 Monoclonal Antibody Specifically Reacts to H3K9Me3. ELISA of designer nucleosomes (dNucs) with recombinant human nucleosomes containing mono-, di-, or tri-methylated H3K4, H3K9, H3K27, H3K36, and H4K20, detected using Histone H3K9Me3 Monoclonal Antibody (RM389) (0.5 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

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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.<sup>1</sup> 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.<sup>1,2</sup> Trimethylation of histone H3 at lysine 9 (H3K9Me3) occludes DNA binding by transcription factors and is associated with gene repression.<sup>3</sup> H3K9Me3 is also a binding target of the heterochromatin protein 1 (HP1) family proteins CBX1, CBX3, and CBX5.<sup>4</sup> It is recognized by the plant homeodomain (PHD) fingers of chromodomain helicase DNA binding protein 4 (CHD4), a member of the NuRD deacetylase complex that is upregulated in a variety of cancers and implicated in the DNA damage response.<sup>5</sup> Cayman's Histone H3K9Me3 Monoclonal Antibody (RM389) can be used for ELISA, multiplex-based assays, and Western blot (WB) applications.

## References

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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. Becker, J.S., Nicetto, D., and Zaret, K.S. H3K9me3-dependent heterochromatin: Barrier to cell fate changes. *Trends Genet.* **32(1)**, 29-41 (2016).
4. Kaustov, L., Ouyang, H., Amaya, M., *et al.* Recognition and specificity determinants of the human Cbx chromodomains. *J. Biol. Chem.* **286(1)**, 521-529 (2011).
5. Mansfield, R.E., Musselman, C.A., Kwan, A.H., *et al.* Plant homeodomain (PHD) fingers of CHD4 are histone H3-binding modules with preference for unmodified H3K4 and methylated H3K9. *J. Biol. Chem.* **286(13)**, 11779-11791 (2011).

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