# PRODUCT INFORMATION

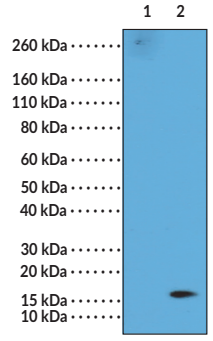
## Histone H3K36Me2 Monoclonal Antibody (RM141)

*Item No. 32133*

### Overview and Properties

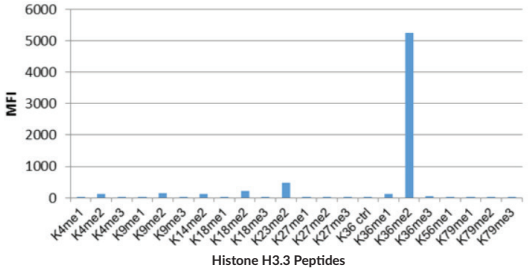
| | |
|---|---|
| **Contents:** | This vial contains 100 µg of protein A-affinity purified monoclonal antibody. |
| **Synonym:** | Dimethylated Histone H3 Lysine 36 |
| **Immunogen:** | Peptide corresponding to H3K36Me2 |
| **Cross Reactivity:** | (+) H3K36Me2; (-) Unmodified H3K36, H3K36Me1, H3K36Me3, H3K4Me1, H3K4Me2, H3K4Me3, H3K9Me1, H3K9Me2, H3K9Me3, H3K14Me2, H3K18Me1, H3K18Me2, H3K23Me1, H3K23Me2, H3K27Me1, H3K27Me2, H3K27Me3, H3K56Me1, H3K79Me1, H3K79Me2, H3K79Me3 |
| **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:** | RM141 |
| **Host:** | Rabbit |
| **Isotype:** | IgG |
| **Applications:** | ELISA, multiplex-based assays, and Western blot (WB); the recommended starting concentration for ELISA is 0.2-1 µg/ml, 0.5-2 µg/ml for WB, and 0.1-0.5 µg/ml for mulitplex-based assays. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

### Images




**Lane 1:** Recombinant histone H3.3
**Lane 2:** HeLa cells

**WB of Recombinant Histone H3.3 and Acid Extracts of HeLa Cells using 0.5 µg/ml of Histone H3K36Me2 Monoclonal Antibody (RM141).** This showed a band of histone H3 dimethylated at Lysine 36 (K36Me2) in HeLa cells.




**Histone H3K36Me2 Monoclonal Antibody (RM141) Specifically Reacts to Histone H3 Dimethylates at Lysine 36 (K36Me2).** No cross reactivity with unmodified H3K36, H3K36Me1, H3K36Me3, or other methylations in histone H3.

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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] Dimethylation of H3K36 is catalyzed by SET domain-containing histone methyltransferases including SET2, HYPB, NSD1, and ASH1L, and mutation of these methyltransferases is associated with various diseases, including multiple myeloma and Sotos syndrome.[3-5] H3K36Me2 is enriched at the coding regions of genes and correlates with the initiation, but not maintenance, of active transcription, heterochromatin maintenance, and DNA break repair.[4,6,7] Cayman's Histone H3K36Me2 Monoclonal Antibody (RM141) can be used for ELISA, multiplex-based assays, 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. Li, J., Ahn, J.H., and Wang, G.G. Understanding histone H3 lysine 36 methylation and its deregulation in disease. *Cell Mol. Life Sci.* **76(15)**, 2899-2916 (2019).
4. Rao, B., Shibata, Y., Strahl, B.D., *et al.* Dimethylation of histone H3 at lysine 36 demarcates regulatory and nonregulatory chromatin genome-wide. *Mol. Cell. Biol.* **25(21)**, 9447-9459 (2005).
5. Sun, X.J., Wei, J., Wu, X.Y., *et al.* Identification and characterization of a novel human histone H3 lysine 36-specific methyltransferase. *J. Biol. Chem.* **280(42)**, 35261-35271 (2005).
6. Li, B., Jackson, J., Simon, M.D., *et al.* Histone H3 lysine 36 dimethylation (H3K36me2) is sufficient to recruit the Rpd3s histone deacetylase complex and to repress spurious transcription. *J. Biol. Chem.* **284(12)**, 7970-7976 (2009).
7. Avdic, V., Zhang, P., Lanouette, S., *et al.* Structural and biochemical insights into MLL1 core complex assembly. *Structure* **19(1)**, 101-108 (2011).



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