# PRODUCT INFORMATION

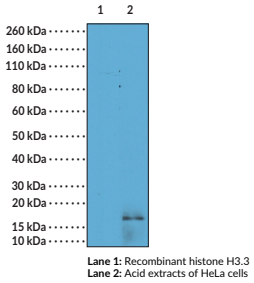
## Histone H3K14Me2 Monoclonal Antibody (RM165)

*Item No. 32143*

### Overview and Properties

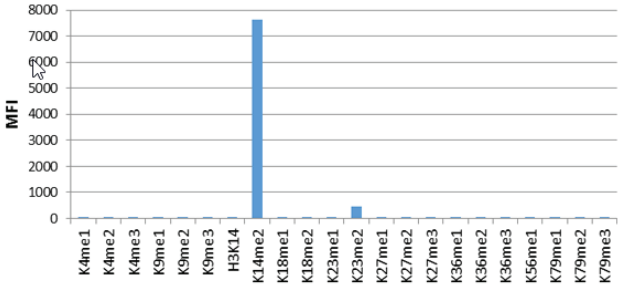
| | |
|---|---|
| **Contents:** | This vial contains 100 µg of protein A-affinity purified monoclonal antibody. |
| **Synonym:** | Dimethylated Histone H3 Lysine 14 |
| **Immunogen:** | Peptide corresponding to H3K14Me2 |
| **Cross Reactivity:** | (+) H3K14Me2; (-) Unmodified H3K14, H3K14Me1, H3K14Me3, H3K4Me1, H3K4Me2, H3K4Me3, H3K9Me1, H3K9Me2, H3K9Me3, H3K18Me1, H3K18Me2, H3K23Me1, H3K23Me2, H3K27Me1, H3K27Me2, H3K27Me3, H3K36Me1, H3K36Me2, H3K36Me3, 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:** | 1.0 mg/ml |
| **Clone:** | RM165 |
| **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, 0.1-0.5 µg/ml for multiplex-based assays, and 0.25-1 µg/ml for 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 Histone H3K14Me2 Monoclonal Antibody (RM165) at 0.25 µg/ml showed a band of H3K14Me2 in HeLa cells.




**RM165 Specifically Reacts to H3K14Me2.** No cross reactivity with unmodified H3K14 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 histone 3 lysine 14 (H3K14Me2) is enriched in the promoter region of tumor suppressor candidate 3 (*TUSC3*), but not that of *GAPDH*, in DLD-1 and HCT116 cells.[3] Ubiquitin-like PHD and RING finger domain-containing protein 1 (UHRF1) can bind to dimethylated H3K14 and suppress acetylation of H3K14. H3K14Me2 levels increase during transdifferentiation of rat Thy-1(+) Lin(-) bone marrow cells into hepatocytes *in vitro*.[4] Cayman's Histone H3K14Me2 Monoclonal Antibody (RM165) can be used for ELISA, 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. 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. Taniue, K., Hayashi, T., Kamoshida, Y., *et al*. UHRF1-KAT7-mediated regulation of TUSC3 expression via histone methylation/acetylation is critical for the proliferation of colon cancer cells. *Oncogene*. **39(5)**, 1018-1030 (2019).
4. Liao, X., Liao, Y., Zou, Y., *et al*. Epigenetic modifications of histone H3 during the transdifferentiation of Thy-1(+) Lin(-) bone marrow cells into hepatocytes. *Mol. Med. Rep*. **15(5)**, 7561-7567 (2015).



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