

PRODUCT INFORMATION



Histone H3K9Me2 Monoclonal Antibody (Clone 5E2)

Item No. 18071

Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified antibody.
Synonym:	Dimethylated Histone H3 Lysine 9
Immunogen:	Synthetic peptide from human H3K9Me2 (aa 1-30) conjugated to KLH
Cross Reactivity:	(-) H3K4Me2, H3K27Me2, H3K36Me2, H3K9Me, H3K9Me3
Species Reactivity:	(+) Human
Uniprot No.:	P68431
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol, 0.1% BSA, and 0.02% sodium azide
Clone:	5E2
Host:	Mouse
Isotype:	IgG3κ
Applications:	ELISA; the recommended starting dilution is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

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 H3 at lysine 9 (H3K9Me2) is associated with transcriptional repression.³ Heterochromatin protein 1-α (HP1-α), HP1-β, and HP1-γ selectively bind histone H3 N-terminal peptides containing dimethylated lysine 9 over unmodified lysine 9.⁴ High nuclear levels of H3K9Me2 in tumor tissue are associated with decreased disease-specific and disease-free survival in patients with oral and oropharyngeal squamous cell carcinoma.⁵ Cayman's Histone H3K9Me2 Monoclonal Antibody (Clone 5E2) can be used for ELISA.

References

- Hyun, K., Jeon, J., Park, K., *et al.* Writing, erasing and reading histone lysine methylations. *Exp. Mol. Med.* **49(4)**, e324 (2017).
- 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., *Academic Press* (2019).
- Lienert, F., Mohn, F., Tiwari, V.K., *et al.* Genomic prevalence of heterochromatic H3K9me2 and transcription do not discriminate pluripotent from terminally differentiated cells. *PLoS Genet.* **7(6)**, e1002090 (2011).
- Lachner, M., O'Carroll, D., Rea, S., *et al.* Methylation of histone H3 lysine 9 creates a binding site for HP1 proteins. *Nature* **410(6824)**, 116-120 (2001).
- Maia, L.L., Peterle, G.T., Dos Santos, M., *et al.* JMJD1A, H3K9me1, H3K9me2 and ADM expression as prognostic markers in oral and oropharyngeal squamous cell carcinoma. *PLoS One.* **13(3)**, e019884 (2018).

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.

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