PRODUCT INFORMATION

Histone H3K9Me2 Polyclonal Antibody

Item No. 18199

Overview and Properties

Contents:	This vial contains 500 µl of peptide affinity-purified polyclonal antibody.
Synonym:	Dimethylated Histone H3 Lysine 9
Immunogen:	Synthetic peptide from human H3K9Me2 (aa 1-30) conjugated to KLH
Cross Reactivity:	(+) H3K36Me2 (~50%); (-) Unmodified histone H3, H3K9Me1, H3K9Me3
Species Reactivity:	(+) Human
Uniprot No.:	P68431
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	TBS, pH 7.4, with 50% glycerol, 0.1% BSA, and 0.02% sodium azide
Host:	Rabbit
Applications:	ELISA; the recommended starting dilution is 1:200. 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 Polyclonal Antibody can be used for ELISA.

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. 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).
4. 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).
5. 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).

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