PRODUCT INFORMATION

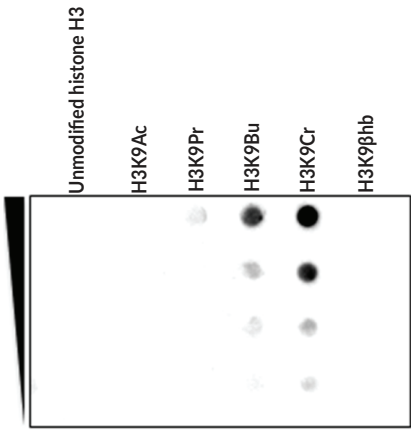
Histone H3K9Cr Monoclonal Antibody (Clone RM339)

Item No. 32177

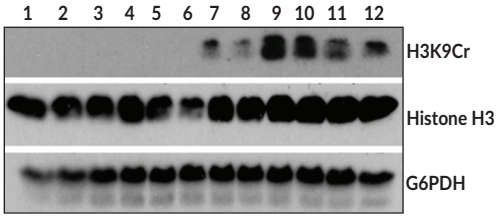
Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Crotonylated Histone H3 Lysine 9
Immunogen:	Peptide corresponding to H3K9Cr
Cross Reactivity:	(+) H3K9Cr, H3K9Bu, H3K9Pr (weakly); (-) Unmodified histone H3, H3K9Ac, H3K9βhb
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:	RM339
Host:	Rabbit
Isotype:	IgG
Applications:	Dot blot, Multiplex-based assays, and Western blot (WB); the recommended starting concentration for dot blot is 0.5-2 µg/ml, 0.05-0.5 µg/ml for multiplex-based assays, and 1-5 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Dot blot of Histone H3K9Cr Monoclonal Antibody (Clone RM339). The antibody specifically reacts to H3K9Cr and cross reacts with H3K9Bu and H3K9Pr (weakly).



WB using Histone H3K9Cr Monoclonal Antibody (Clone RM339) against H3K9Cr. Histone H3 and G6PDH antibodies were used as controls. A crotonylation-inducing metabolite was used to increase the H3K9Cr signal. The crotonic acid spike

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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, citrullination, and crotonylation.[1-3] Crotonylation of histone H3 at lysine 9 (H3K9Cr) is regulated by histone acetyltransferases (HATs) and histone deacetylases (HDACs).[4] H3K9Cr binds the YEATS domain of human AF9 and yeast Taf14 and is associated with transcriptional activation.[4,5] H3K9Cr levels are reduced by DNA damage in U2OS cancer cells.[6] Cayman's H3K9Cr Monoclonal Antibody (Clone RM339) can be used for dot blot, multiplex-based assay, and Western blot (WB) applications. This antibody is cross-reactive with histone H3 butyrylated at lysine 9 (H3K9Bu).

References

1. Hyun, K., Jeon, J., Park, K., *et al.* Writing, erasing and reading histone lysine methylations. *Exp. Mol. Med.* **49(4)**, e324 (2017).
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3. Wan, J., Liu, H., Chu, J., *et al.* Functions and mechanisms of lysine crotonylation. *J. Cell. Mol. Med.* **23(11)**, 7163-7169 (2019).
4. Andrews, F.H., Shinsky, S.A., Shanle, E.K., *et al.* The Taf14 YEATS domain is a reader of histone crotonylation. *Nat. Chem. Biol.* **12(6)**, 396-398 (2016).
5. Li, Y., Sabari, B.R., Panchenko, T., *et al.* Molecular coupling of histone crotonylation and active transcription by AF9 YEATS domain. *Mol. Cell* **62(2)**, 181-193 (2016).
6. Abu-Zhayia, E.R., Machour, F.E., and Ayoub, N. HDAC-dependent decrease in histone crotonylation during DNA damage. *J. Mol. Cell Biol.* **11(9)**, 804-806 (2019).

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