

PRODUCT INFORMATION

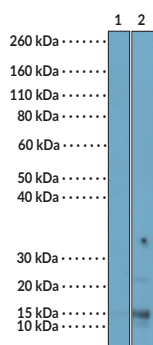
Histone H2AXK9Ac Rabbit Monoclonal Antibody (Clone RM446)

Item No. 42789

Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonym:	H2A.XK9Ac
Immunogen:	A peptide corresponding to H2AXK9Ac
Cross Reactivity:	(+) H2AXK9Ac; (-) Unmodified H2AXK9, H2AXK5Ac, H2AXK36Ac, H2AZK4Ac, H2AZK7Ac, H2AZK11Ac, H2AZK13Ac, unmodified H2AXN19, unmodified H2AXK36
Species Reactivity:	(+) Human, 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:	RM446
Host:	Rabbit
Isotype:	IgG
Applications:	Multiplex-based assay and Western blot (WB); the recommended starting concentration is 0.2-1 µg/ml for multiplex-based assay and 0.01-0.1 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

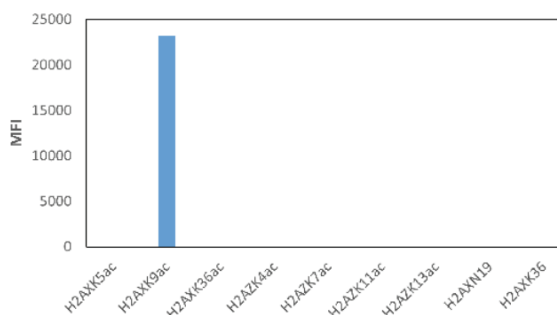
Images



Lane 1: Recombinant H2A histone
Lane 2: Acid extracts of HeLa cell lysate

WB of acid extracts of HeLa cell lysates and recombinant H2A histones using Histone H2AXK9Ac Rabbit Monoclonal Antibody (Clone RM446) at a concentration of 0.01-0.1 µg/ml.

Acetyl-Histone H2AX (Lys9) Rabbit Monoclonal Antibody (Clone RM446)
Specific to H2AXK9Ac



Histone H2AXK9Ac Rabbit monoclonal antibody (Clone RM446) specificity to histone H2AXAc. Unmodified or modified histones containing lysine methylations or asparagine were used.

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.

WARRANTY AND LIMITATION OF REMEDY
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Description

Histone H2AX is a variant of histone H2A, a nuclear protein and a component of the nucleosome core.^{1,2} It is a globular protein containing unstructured N- and C-terminal tails that extend outside of the nucleosome core that are subject to a variety of post-translational modifications (PTMs), including phosphorylation, acetylation, methylation, and ubiquitination, which function as epigenetic regulators of transcription.^{3,4} H2AX has a key role in the DNA damage response.^{1,3-5} It is phosphorylated at serine 139 (γ H2AX) by the PI3K-like kinases ataxia-telangiectasia mutated kinase (ATM) and ataxia-telangiectasia, Rad3-related protein/kinase (ATR), and DNA protein kinase (DNA-PK) in response to DNA damage, leading to changes in chromatin structure at the damaged site that promote DNA repair. H2AX has additional roles in chromatin inactivation during meiosis and mitosis, as well as neural stem cell development and cellular senescence.⁵ Decreased tumor levels of H2AX are associated with increased progression-free survival in patients with triple-negative breast cancer.⁶ Tumor levels of acetylated lysine 9 on histone H2AX (H2AXK9Ac) are increased in patients with oligodendrogliomas.⁷ Cayman's Histone H2AXK9Ac Rabbit Monoclonal Antibody (Clone RM446) can be used for multiplex-based assay and Western blot (WB) applications.

References

1. Bönisch, C. and Hake, S.B. Histone H2A variants in nucleosomes and chromatin: More or less stable? *Nucleic Acids Res.* **40(21)**, 10719-10741 (2012).
2. Hyun, K., Jeon, J., Park, K., *et al.* Writing, erasing and reading histone lysine methylations. *Exp. Mol. Med.* **49(4)**, e324 (2017).
3. Dickey, J.S., Redon, C.E., Nakamura, A.J., *et al.* H2AX: Functional roles and potential applications. *Chromosoma* **118(6)**, 683-692 (2009).
4. Corujo, D., and Buschbeck, M. Post-translational modifications of H2A histone variants and their role in cancer. *Cancers (Basel)* **10(3)**, 59 (2018).
5. Turinetto, V. and Giachino, C. Multiple facets of histone variant H2AX: A DNA double-strand-break marker with several biological functions. *Nucleic Acids Res.* **43(5)**, 2489-2498 (2015).
6. Gruosso, T., Mieulet, V., Cardon, M., *et al.* Chronic oxidative stress promotes H2AX protein degradation and enhances chemosensitivity in breast cancer patients. *EMBO Mol. Med.* **8(5)**, 527-549 (2016).
7. Feller, C., Felix, M., Weiss, T., *et al.* Histone epiproteomic profiling distinguishes oligodendroglioma, IDH-mutant and 1p/19q co-deleted from IDH-mutant astrocytoma and reveals less tri-methylation of H3K27 in oligodendrogliomas. *Acta Neuropathol.* **139(1)**, 211-213 (2020).