

# PRODUCT INFORMATION

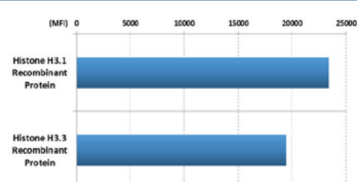


## Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188) Item No. 20724

### Overview and Properties

<b>Contents:</b>	This vial contains 100 µg of protein A affinity-purified antibody from an animal origin-free culture supernatant.
<b>Synonym:</b>	H3
<b>Immunogen:</b>	Peptide corresponding to the C-terminus of human histone H3
<b>Cross Reactivity:</b>	(+) All histone H3 proteins, independent of post-translational modifications; (-) H2A, H2B, H4
<b>Species Reactivity:</b>	Species Independent
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Storage Buffer:</b>	50% glycerol/PBS containing 1% BSA and 0.09% sodium azide
<b>Clone:</b>	RM188
<b>Host:</b>	Rabbit
<b>Isotype:</b>	IgG
<b>Applications:</b>	ELISA, immunocytochemistry (ICC), multiplex-based assays, and Western blot (WB); the recommended starting concentration for ICC is 1-5 µg/ml, 0.2-1 µg/ml for ELISA, 0.01-0.5 µg/ml for multiplex-based assays, and 0.01-0.25 µg/ml for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images

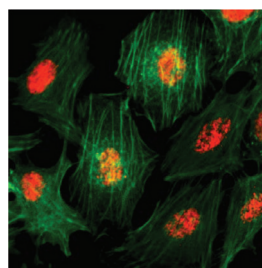


Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188) reacts to both histone H3.1 and histone H3.3.

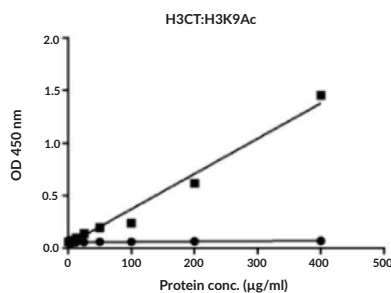


Lane 1: H3.3  
Lane 2: H3.1  
Lane 3: A375  
Lane 4: HEK293  
Lane 5: HeLa  
Lane 6: SK-MEL-2

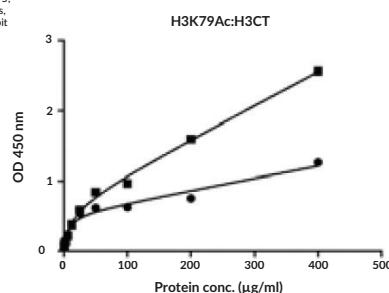
WB of recombinant histone H3.3 and H3.1, A375, HEK293, HeLa, and SK-MEL-2 whole cell lysates, using 0.025 µg/ml of Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188).



Immunocytochemistry of HeLa cells, using Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188) (red). Actin filaments have been labeled with fluorescein phalloidin (green).



Sandwich ELISA against acetylated histone H3 at Lys 9 using HeLa whole cell lysate, treated or untreated with sodium butyrate. Using Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188) (1 µg/ml) as the capture antibody and biotinylated anti-H3K9ac (RM161, 1 µg/ml) as the detection antibody.



Sandwich ELISA against acetylated histone H3 at Lys 79 using HeLa whole cell lysate, treated or untreated with sodium butyrate. Using Anti-Acetyl-Histone H3 (Lys79) Rabbit Monoclonal Antibody (Clone RM156) (5 µg/ml) as the capture antibody and biotinylated Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188) (1 µg/ml) as the detection antibody.

**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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# PRODUCT INFORMATION



## Description

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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.<sup>1</sup> 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.<sup>1,2</sup> Histone H3 PTMs function as epigenetic regulators of gene transcription by affecting chromatin structure and providing binding sites for many transcription factors, thus regulating several cellular functions including gene expression, cell cycle, and DNA replication and repair.<sup>1,3</sup> Differential methylation of histone H3 at various lysine residues is catalyzed by SET domain-containing methyltransferases and marks sites of transcriptional activation or repression.<sup>1</sup> Citrullination of histone H3 by protein arginine deiminase 4 (PAD4; Item Nos. 10500 | 25915 | 28910) or PAD2 (Item No. 10785) induces the release of neutrophil extracellular traps (NETs), a network of decondensed DNA and intracellular proteins secreted by neutrophils as a pathogen defense mechanism.<sup>4,5</sup> Histone H3 mutations have been found in patients with diffuse intrinsic pontine glioma, leukemia, or chondroblastoma.<sup>6,7</sup> Cayman's Anti-Histone H3 pan Rabbit Monoclonal Antibody (Clone RM188) can be used for ELISA, immunocytochemistry (ICC), multiplex-based assays, and Western blot (WB) applications. The antibody recognizes all histone H3 proteins independent of post-translational modifications.

## References

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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).
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