PRODUCT INFORMATION

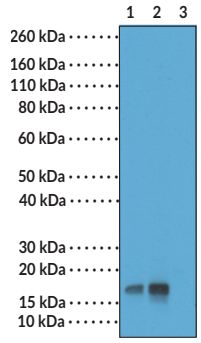
Histone H3T3Ph Monoclonal Antibody (RM159)

Item No. 32165

Overview and Properties

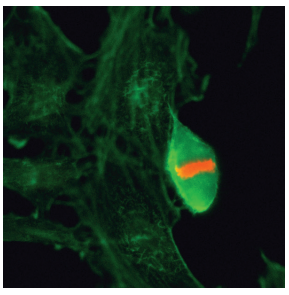
Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonyms:	H3pT3, H3pThr3, Histone H3 (Phospho-Thr3), Phospho-Histone H3 Threonine 3, Phosphorylated Histone H3 Threonine 3
Immunogen:	Peptide corresponding to H3T3Ph
Cross Reactivity:	(+) Vertebrates
Species Reactivity:	(+) H3T3Ph; (-) Other phosphorylated histones
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:	RM159
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, immunocytochemistry (ICC), immunohistochemistry (IHC), multiplex-based assays, and Western blot (WB); the recommended starting concentration is 0.2-1 µg/ml for ELISA, 0.5-2 µg/ml for ICC and IHC, and 0.1–1 µg/ml for multiplex-based assays and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

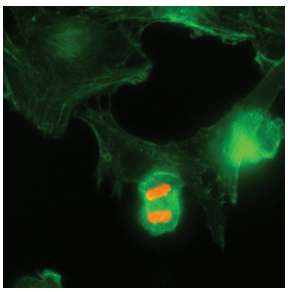


Lane 1: Acid extracts of HeLa cells untreated
Lane 2: Acid extracts of HeLa cells treated
Lane 3: Recombinant histone H3.3

WB of acid extracts of HeLa cells treated with nocodazole or left untreated, and recombinant histone H3.3 protein using Histone H3T3Ph Monoclonal Antibody (RM159) at a concentration of 0.1 µg/ml.



Immunocytochemical staining of HeLa cells using Histone H3T3Ph Monoclonal Antibody (RM159) (red). Actin filaments have been labeled with fluorescein phalloidin (green).



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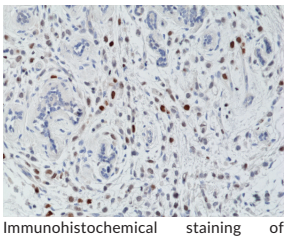

Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using Histone H3T3Ph Monoclonal Antibody (RM159) at a concentration of 1 µg/ml.

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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, and citrullination.[1,2] Phosphorylation of histone H3 at threonine 3 (H3T3Ph), catalyzed by the serine/threonine protein kinase haspin, is involved in the localization of the chromosomal passenger complex (CPC) at centromeres during mitosis and chromatin condensation during meiosis.[3,4] Cayman's Histone H3T3Ph Monoclonal Antibody (RM159) can be used for ELISA, immunocytochemistry (ICC), immunohistochemistry (IHC), multiplex-based assay, and Western blot (WB) applications.

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. Kelly, A.E., Ghenoiu, C., Xue, J.Z., *et al.* Survivin reads phosphorylated histone H3 threonine 3 to activate the mitotic kinase Aurora B. *Science* **330(6001)**, 235-239 (2010).
4. Wang, Q., Wei, H., Du, J., *et al.* H3 Thr3 phosphorylation is crucial for meiotic resumption and anaphase onset in oocyte meiosis. *Cell Cycle* **15(2)**, 213-224 (2016).

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