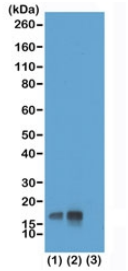
Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody [clone RM159] (R20233)

Catalog No.	Formulation	Size
R20233-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20233-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25

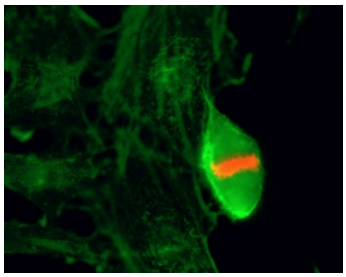
Recombinant RABBIT MONOCLONAL

Bulk quote request

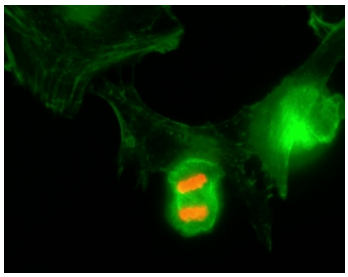
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM159
Purity	Protein A purified from animal origin-free supernatant
UniProt	P84243
Gene ID	8350
Applications	Western Blot : 0.1-1ug/ml Immunocytochemistry : 0.5-2ug/ml ELISA : 0.2-1ug/ml
Limitations	This recombinant phospho-Histone H3 antibody is available for research use only.



Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody for WB. Western blot analysis of HIST1H3A / Histone H3 Thr3 phosphorylation in acid extracts of human HeLa cells non-treated (1) and nocodazole-treated (2), with recombinant Histone H3.3 included as a control (3), using Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody. A band is detected at the predicted molecular weight of approximately 15 kDa corresponding to Histone H3, with increased signal in nocodazole-treated cells reflecting mitotic enrichment and Haspin kinase-mediated Thr3 phosphorylation at centromeric chromatin.



Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody for IF. Immunofluorescence analysis of HIST1H3A / Histone H3 Thr3 phosphorylation in human HeLa cells using Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody (red). Distinct nuclear staining is observed in mitotic cells, with signal concentrated at centromeric regions of condensed chromatin consistent with Haspin kinase-mediated Thr3 phosphorylation, while interphase cells show minimal signal. Actin filaments are labeled with fluorescein phalloidin (green), outlining cell morphology and providing contrast to the centromere-associated nuclear signal.



ICC/IF of HeLa cells using recombinant phospho-Histone H3 antibody (red). Actin filaments have been labeled with fluorescein phalloidin (green).

Description

Histone H3 (HIST1H3A) is a core nucleosomal protein that undergoes highly regulated phosphorylation events during mitosis, with threonine 3 phosphorylation representing a specialized modification that defines centromeric chromatin function. Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody is designed to detect this site-specific phosphorylation event and provide a focused readout of centromere-associated chromatin regulation. This antibody is part of a broader collection of Histone H3 antibodies used to study chromatin structure, histone modifications, and epigenetic regulation.

HIST1H3A antibody, also referred to as Histone H3 antibody and H3T3ph antibody in the literature, recognizes a phosphorylation site catalyzed by Haspin kinase, a key mitotic regulator required for proper chromosome segregation. Unlike Ser10 or Ser28 phosphorylation, which broadly label mitotic chromatin, Thr3 phosphorylation is highly enriched at centromeres, where it plays a central role in recruiting the chromosomal passenger complex including Aurora B kinase.

This Phospho-Histone H3 Antibody (pThr3) is uniquely positioned for studies of centromere identity and kinetochore function rather than general mitotic activity. Thr3 phosphorylation creates a binding platform that spatially directs Aurora B localization to inner centromeres, ensuring accurate chromosome alignment and segregation during mitosis. This centromere-restricted biology provides a distinct mechanistic angle compared to other histone H3 phosphorylation sites.

At the molecular level, Thr3 phosphorylation regulates the assembly of protein complexes required for error correction in kinetochore-microtubule attachments. Disruption of this pathway leads to chromosome missegregation and aneuploidy, highlighting its importance in maintaining genomic stability. This makes Thr3 phosphorylation a critical marker for studying mitotic fidelity and centromere function.

In western blot applications, the antibody detects Histone H3 at approximately 15 kDa, with signal reflecting the presence of phosphorylated chromatin in mitotic cells. Because Thr3 phosphorylation is tightly restricted to mitosis, detection provides a specific biochemical readout of centromere-associated activity rather than general proliferation.

At the cellular level, Thr3 phosphorylation localizes to the nucleus and is concentrated at centromeric regions of condensed chromosomes, producing a spatially distinct staining pattern compared to Ser10 or Ser28. This enables detailed investigation of chromosome organization, centromere positioning, and mitotic progression.

This antibody supports detection of Thr3-phosphorylated Histone H3, enabling focused analysis of centromere biology, chromosome segregation mechanisms, and kinetochore-associated signaling pathways.

Application Notes

The stated application concentrations are suggested starting points. Titration of the Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A phospho-peptide corresponding to phospho-Histone H3 (Thr3) was used as the immunogen for this Phospho-Histone H3 Antibody (pThr3) / HIST1H3A Centromere Regulation Antibody.

Storage

Store the recombinant phospho-Histone H3 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

Histone H3 Thr3 phosphorylation antibody, H3T3ph centromere marker antibody, phospho-H3 Thr3 antibody, Haspin substrate antibody