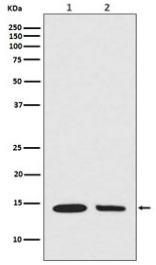
Hydroxyl-Histone H2A Antibody Tyr39 / HIST1H2A Oxidative Chromatin Signaling Antibody [clone DED-8] (RQ5086)

Catalog No.	Formulation	Size
RQ5086	Antibody in PBS with 0.02% sodium azide, 50% glycerol and 0.4-0.5mg/ml BSA	100 ul

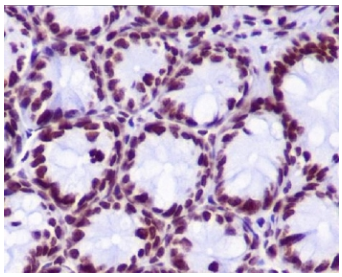
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-2 weeks
Species Reactivity	Human, Mouse
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	DED-8
Purity	Affinity purified
UniProt	P04908
Applications	Western blot: 1:500-1:2000 Immunohistochemistry (FFPE): 1:500-1:2000
Limitations	This Hydroxyl-Histone H2A antibody (Tyr39) is available for research use only.



Hydroxyl-Histone H2A Antibody Tyr39 / HIST1H2A Oxidative Chromatin Signaling Antibody (clone DED-8) for WB. Western blot analysis of HIST1H2A / Histone H2A Tyr39 hydroxylation in (1) mouse NIH3T3 and (2) human A549 cell lysates using Hydroxyl-Histone H2A Antibody Tyr39 / HIST1H2A Oxidative Chromatin Signaling Antibody. A band is detected at the predicted molecular weight of approximately 14 kDa corresponding to hydroxylated Histone H2A, consistent with nuclear chromatin-associated modification linked to oxidative signaling and cellular stress response pathways.



Hydroxyl-Histone H2A Antibody Tyr39 / HIST1H2A Oxidative Chromatin Signaling Antibody (clone DED-8) for IHC. Immunohistochemistry of HIST1H2A / Histone H2A Tyr39 hydroxylation in mouse colon tissue. Formalin-fixed, paraffin-embedded mouse colon sections show strong HRP-DAB brown nuclear staining in epithelial cells lining the glands, with additional nuclear staining in stromal cells, consistent with nuclear localization of hydroxylated Histone H2A and chromatin-associated oxidative signaling. Heat-induced epitope retrieval was performed using pH6 citrate buffer.

Description

Histone H2A (HIST1H2A) undergoes a range of post-translational modifications that regulate chromatin structure and gene expression, with hydroxylation representing a relatively underexplored but increasingly important regulatory mechanism. Hydroxyl-Histone H2A Antibody Tyr39 / HIST1H2A Oxidative Chromatin Signaling Antibody (clone DED-8) is designed to detect Histone H2A hydroxylated at tyrosine 39, providing a marker of chromatin states influenced by oxidative signaling and metabolic stress. Included within the Histone H2A antibodies collection, this antibody enables analysis of histone modification patterns and chromatin regulatory mechanisms involving H2A and its variants.

HIST1H2A antibody, also referred to as Histone H2A antibody and H2A Tyr39 hydroxylation antibody in the literature, recognizes a modification distinct from classical histone acetylation and methylation. Hydroxylation introduces a polar functional group that can alter protein interaction surfaces, potentially modulating nucleosome stability and chromatin-associated protein binding in response to cellular conditions.

This recombinant rabbit monoclonal clone DED-8 antibody is uniquely positioned for studies of oxidative chromatin signaling and stress-responsive epigenetic regulation. Histone hydroxylation has been linked to cellular pathways involving hypoxia, reactive oxygen species, and metabolic adaptation, suggesting a role in coupling environmental cues to chromatin-based gene regulation.

At the molecular level, tyrosine hydroxylation may influence nucleosome conformation by altering histone-histone and histone-DNA interactions. This modification can create or disrupt binding interfaces for chromatin regulators, thereby modulating accessibility and regulatory complex recruitment in a context-dependent manner.

Unlike acetylation, which broadly promotes transcriptional activation, hydroxylation is thought to function as a signaling-dependent modification that reflects cellular state rather than fixed transcriptional outcomes. It may mark chromatin regions undergoing oxidative stress adaptation or metabolic reprogramming.

This modification is particularly relevant in disease contexts where oxidative stress and metabolic dysregulation are prominent, including cancer and inflammatory conditions. Its presence may reflect altered chromatin states associated with cellular adaptation to stress.

At the cellular level, H2A Tyr39 hydroxylation localizes to the nucleus and may be enriched in regions undergoing stress-responsive chromatin remodeling. This distinguishes it from canonical histone marks linked to stable transcriptional activation or repression.

This antibody supports detection of Tyr39-hydroxylated Histone H2A, enabling investigation of oxidative chromatin signaling, metabolic regulation, and emerging epigenetic mechanisms that integrate environmental and cellular stress responses.

Application Notes

Optimal dilution of the Hydroxyl-Histone H2A Antibody Tyr39 / HIST1H2A Oxidative Chromatin Signaling Antibody should be determined by the researcher.

Immunogen

A synthetic peptide specific to human Histone H2A (surrounding hydroxylated tyrosine 39) was used as the immunogen for the Hydroxyl-Histone H2A Antibody Tyr39 / HIST1H2A Oxidative Chromatin Signaling Antibody.

Storage

Store the Hydroxyl-Histone H2A antibody (Tyr39) at -20oC.

Alternate Names

Histone H2A Tyr39 hydroxylation antibody, H2A Y39 hydroxyl chromatin antibody, hydroxylated histone H2A Tyr39 antibody, H2A Tyr39 oxidative modification antibody

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