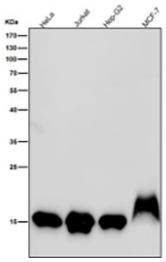
Histone H3 (mono methyl K79) Antibody / HIST1H3A [clone 31H92] (FY13214)

Catalog No.	Formulation	Size
FY13214	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

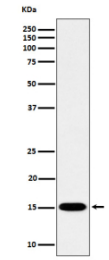
Recombinant RABBIT MONOCLONAL

Bulk quote request

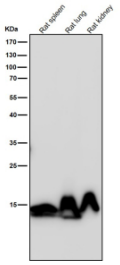
Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	31H92
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P68431
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200 Immunocytochemistry/Immunofluorescence : 1:50-1:200
Limitations	This Histone H3 (mono methyl K79) antibody is available for research use only.



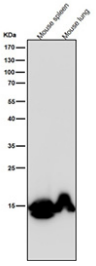
Western blot testing of human samples using the Histone H3 (mono methyl K79) antibody at 1:1000 dilution for 1 hour at room temperature. Expected molecular weight ~15 kDa.



Western blot analysis of Histone H3 (mono methyl K79) expression in human HeLa cell lysate using Histone H3 (mono methyl K79) antibody. Expected molecular weight ~15 kDa.



Western blot testing of rat samples using the Histone H3 (mono methyl K79) antibody at 1:1000 dilution for 1 hour at room temperature. Expected molecular weight ~15 kDa.



Western blot testing of mouse samples using the Histone H3 (mono methyl K79) antibody at 1:1000 dilution for 1 hour at room temperature. Expected molecular weight ~15 kDa.

Description

Histone H3 (mono methyl K79) antibody detects Histone H3 monomethylated at lysine 79, encoded by the HIST1H3A gene. Histone H3 is a core nucleosomal protein that organizes DNA into chromatin, and its post-translational modifications regulate gene expression, DNA repair, and genome stability. Monomethylation at lysine 79 is a modification placed within the histone core rather than its tail, making it unique among histone marks. Histone H3 (mono methyl K79) antibody provides researchers with a specific reagent for studying epigenetic regulation and chromatin biology.

Lysine 79 monomethylation is catalyzed by the histone methyltransferase DOT1L. Research using Histone H3 (mono methyl K79) antibody has demonstrated that this modification is associated with active transcription, particularly in coding regions of genes. Unlike acetylation or other methylation marks on histone tails, H3K79 methylation occurs within the globular domain of histone H3, influencing nucleosome structure and stability. This makes it a distinct epigenetic signal in chromatin regulation.

Studies with Histone H3 (mono methyl K79) antibody have revealed roles in development, cell cycle progression, and DNA damage response. Monomethylation at this site contributes to recruitment of DNA repair proteins, maintaining genome stability after genotoxic stress. In development, proper levels of H3K79 methylation are essential for lineage commitment and stem cell differentiation. Dysregulation can disrupt normal transcription programs, leading to disease.

Aberrant H3K79 methylation has been strongly linked to leukemia. Research using Histone H3 (mono methyl K79) antibody has shown that mixed lineage leukemia (MLL) gene rearrangements alter DOT1L activity, resulting in abnormal H3K79 methylation patterns. These changes promote oncogenic transcription programs and block differentiation, driving leukemia progression. Targeting DOT1L is now an active therapeutic strategy, highlighting the clinical relevance of this modification.

Histone H3 (mono methyl K79) antibody is used in chromatin immunoprecipitation, western blotting, and immunofluorescence. Chromatin immunoprecipitation maps genome-wide distribution of this modification, western blotting

detects modification-specific forms of histone H3, and immunofluorescence reveals nuclear patterns of methylated chromatin. These applications make the antibody indispensable for epigenetics research.

By supplying validated Histone H3 (mono methyl K79) antibody reagents, NSJ Bioreagents supports studies into chromatin biology, transcriptional regulation, and leukemia. Detection of Histone H3 monomethylated at lysine 79 provides insight into epigenetic control of development and disease.

Application Notes

Optimal dilution of the Histone H3 (mono methyl K79) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Histone H3 (mono methyl K79) was used as the immunogen for the Histone H3 (mono methyl K79) antibody.

Storage

Store the Histone H3 (mono methyl K79) antibody at -20oC.