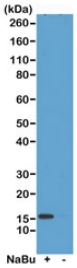
H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody [clone RM221] (R20239)

Catalog No.	Formulation	Size
R20239-100UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ug
R20239-25UG	1 mg/ml in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	25 ug

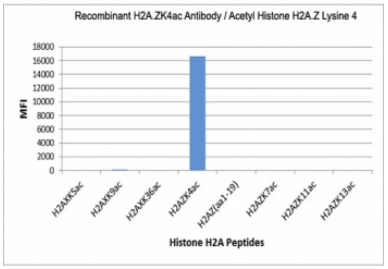
Recombinant RABBIT MONOCLONAL

Bulk quote request

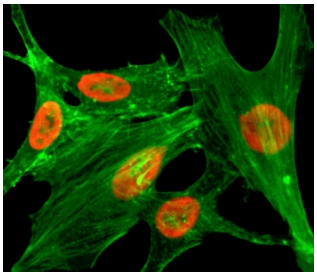
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM221
Purity	Protein A purified from animal origin-free supernatant
UniProt	P0C0S5
Gene ID	3015
Applications	Western Blot : 0.5-2ug/ml ELISA : 0.2-1ug/ml Immunocytochemistry : 1-2ug/ml
Limitations	This H2A.ZK4ac antibody is available for research use only.



H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody (clone RM221) for WB. Western blot analysis of H2AFZ / Histone H2A.Z Lys4 acetylation (H2A.ZK4ac) in acid extracts from human HeLa cells untreated (-) or treated (+) with sodium butyrate using H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody. A band is detected at the predicted molecular weight of approximately 14 kDa in treated cells, consistent with increased histone acetylation and promoter-associated chromatin activation following HDAC inhibition.



H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody (clone RM221) specificity analysis. Peptide binding assay demonstrating selective recognition of H2AFZ / Histone H2A.Z Lys4 acetylation (K4ac). Strong signal is observed exclusively with the H2A.ZK4ac peptide, while no detectable reactivity is seen with non-modified Lys4 or other acetylated histone H2A peptides, confirming high specificity for the Lys4-acetylated H2A.Z state associated with promoter-proximal activation and transcription initiation.



H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody (clone RM221) for IF. Immunofluorescence analysis of H2AFZ / Histone H2A.Z Lys4 acetylation (H2A.ZK4ac) in human HeLa cells treated with sodium butyrate using H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody. Nuclear staining is observed (red), consistent with localization of acetylated H2A.Z at promoter regions, while actin filaments are visualized in the cytoplasm (green), highlighting cell morphology and confirming nuclear-specific signal associated with transcription initiation.

Description

Histone variant H2A.Z (H2AFZ) acetylation at lysine 4 is a critical epigenetic modification associated with promoter activation and transcription initiation. H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody (clone RM221) is designed to detect H2A.Z acetylated at lysine 4, providing a marker of promoter-associated chromatin poised for transcriptional activation. Included within the Histone H2A antibodies collection, this antibody enables analysis of histone modification patterns and chromatin regulatory mechanisms involving H2A and its variants.

H2AFZ antibody, also referred to as H2A.Z antibody and H2A.ZK4ac antibody in the literature, recognizes a modification specific to the H2A.Z histone variant. Unlike canonical H2A, H2A.Z is preferentially incorporated into nucleosomes flanking transcription start sites, where it plays a specialized role in regulating chromatin structure and gene expression.

This recombinant rabbit monoclonal clone RM221 antibody is uniquely positioned for studies of promoter architecture and transcription initiation. H2A.Z lysine 4 acetylation is enriched at the Æ¯ and -1 nucleosomes surrounding transcription start sites, marking regions of active or poised transcription.

At the molecular level, H2A.Z incorporation alters nucleosome stability, and acetylation further enhances chromatin accessibility. H2A.ZK4ac facilitates recruitment of transcriptional machinery, including RNA polymerase II and co-activator complexes, enabling efficient transcription initiation.

This modification is a defining feature of active promoters and plays a key role in regulating gene expression programs. It is often observed at genes undergoing activation and at promoters maintaining transcriptional readiness.

In western blot applications, the antibody detects H2A.Z at approximately 14 kDa, with signal corresponding to acetylated promoter-associated chromatin. Detection reflects transcription initiation and promoter activation rather than elongation or repression.

At the cellular level, H2A.Z lysine 4 acetylation localizes to the nucleus and is enriched at promoter regions of active genes. This supports its use in studying transcription initiation and promoter regulation.

This antibody supports detection of Lys4-acetylated H2A.Z, enabling investigation of promoter activation, transcription initiation, and epigenetic regulation of gene expression.

Application Notes

The stated application concentrations are suggested starting points. Titration of the H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An acetyl-peptide corresponding to Acetyl-Histone H2A.Z (Lys4) was used as the immunogen for this H2A.ZK4ac Antibody / H2AFZ Promoter-Proximal Activation Antibody.

Storage

Store the recombinant H2A.ZK4ac antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

H2A.Z Lys4 acetylation antibody, H2AFZ K4ac promoter antibody, acetyl H2A.Z Lys4 antibody, H2AZ K4 acetyl histone antibody