Anti-Histone H2A (acetyl K9) Antibody [PS01-45] - BSA and Azide free

HA750591

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Cell, CUT&Tag-seq, ChIP
Molecular Wt:	Predicted band size: 14 kDa
Clone number:	PS01-45

Description: Histone H2A is one of the five main histone proteins involved in the structure of chromatin in eukaryotic cells. The other histone proteins are: H1, H2B, H3 and H4. DNA Folding: H2A is important for packaging DNA into chromatin. Since H2A packages DNA molecules into chromatin, the packaging process will affect gene expression. H2A has been correlated with DNA modification and epigenetics. H2A plays a major role in determining the overall structure of chromatin. Inadvertently, H2A has been found to regulate gene expression. DNA modification by H2A occurs in the cell nucleus. Proteins responsible for nuclear import of H2A protein are karyopherin and importin. Recent studies also show that nucleosome assembly protein 1 is also used to transport of H2A into the nucleus so it can wrap DNA. Other functions of H2A have been seen in the histone variant H2A.Z. This variant is associated with gene activation, silencing and suppression of antisense RNA. In addition, when H2A.Z was studied in human and yeast cells, it was used to promote RNA polymerase II recruitment. Antimicrobial peptide: Histones are conserved eukaryotic cationic proteins present in the cells and are involved in the antimicrobial activities. In vertebrates and invertebrates, Histone H2A variant is reported to be involved in host immune response by acting as antimicrobial peptides (AMPs). H2A are α-helical molecule, amphipathic protein with hydrophobic and hydrophilic residues on opposing sides that enhances the antimicrobial activity of H2A.

Immunogen:	Synthetic peptide within Human Histone H2A aa 1-50 (acetyl K9).
Positive control:	HeLa treated with 500 ng/ml TSA for 4 hours whole cell lysate, human colon carcinoma tissue, mouse skin tissue, rat skin tissue, NIH/3T3.
Subcellular location:	Nucleus, Chromosome.
Database links:	SwissProt: P04908 Human | Q93077 Human | Q99878 Human | C0HKE6 Mouse | C0HKE1 Mouse | P02262 Rat

Recommended Dilutions:

WB	1:1,000
IHC-P	1:4,000
IF-Cell	1:50
ChIP	Use 0.5~2 μg for 25 μg of chromatin.

Storage Buffer:	1*PBS (pH7.4).
Storage Instruction:	Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.
Purity:	Protein A affinity purified.

Images

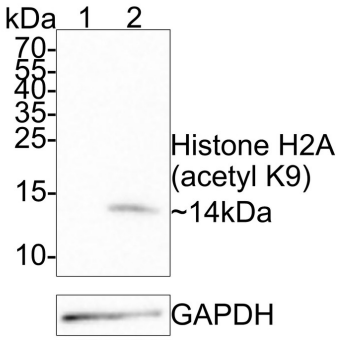

Fig1: Western blot analysis of Histone H2A (acetyl K9) on different lysates with Rabbit anti-Histone H2A (acetyl K9) antibody (HA750591) at 1/1,000 dilution.

Lane 1: HeLa whole cell lysate (20 µg/Lane)
Lane 2: HeLa treated with 500 ng/mL TSA for 4 hours whole cell lysate (20 µg/Lane)

Predicted band size: 14 kDa
Observed band size: 14 kDa

Exposure time: 3 minutes;
15% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA750591) at 1/1,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/300,000 dilution was used for 1 hour at room temperature.

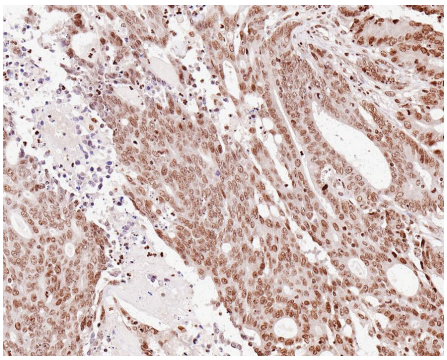

Fig2: Immunohistochemical analysis of paraffin-embedded human colon carcinoma tissue with Rabbit anti-Histone H2A (acetyl K9) antibody (HA750591) at 1/4,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750591) at 1/4,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

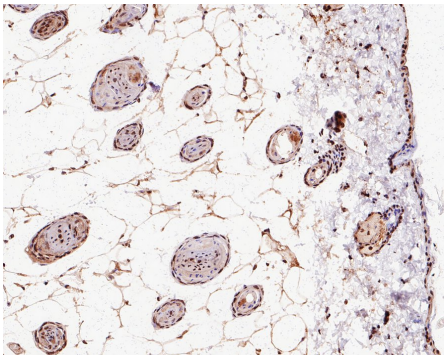

Fig3: Immunohistochemical analysis of paraffin-embedded mouse skin tissue with Rabbit anti-Histone H2A (acetyl K9) antibody (HA750591) at 1/4,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750591) at 1/4,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

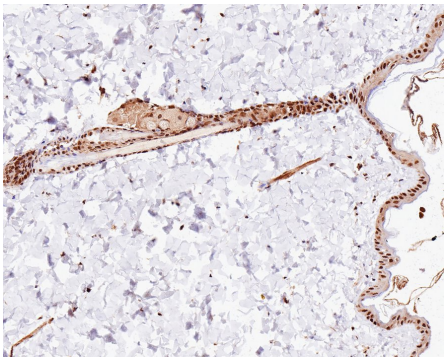

Fig4: Immunohistochemical analysis of paraffin-embedded rat skin tissue with Rabbit anti-Histone H2A (acetyl K9) antibody (HA750591) at 1/4,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA750591) at 1/4,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

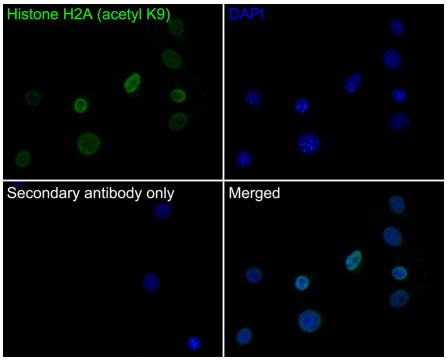

Fig5: Immunocytochemistry analysis of NIH/3T3 cells labeling Histone H2A (acetyl K9) with Rabbit anti-Histone H2A (acetyl K9) antibody (HA750591) at 1/50 dilution.

Cells were fixed in 4% paraformaldehyde for 10 minutes at 37 ℃, permeabilized with 0.05% Triton X-100 in PBS for 20 minutes, and then blocked with 2% negative goat serum for 30 minutes at room temperature. Cells were then incubated with Rabbit anti-Histone H2A (acetyl K9) antibody (HA750591) at 1/50 dilution in 2% negative goat serum overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

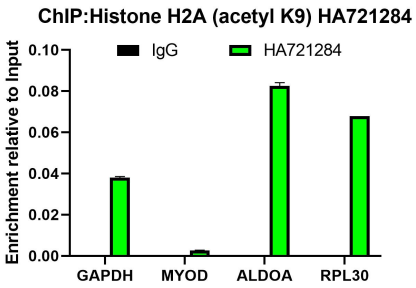

Fig6: Chromatin immunoprecipitations were performed with cross-linked chromatin from HeLa cells treated with 500ng/mL TSA for 4 hours with Histone H2A (acetyl K9) (HA750591) or Normal Rabbit IgG according to the ChIP protocol. The enriched DNA was quantified by real-time PCR using indicated primers. The amount of immunoprecipitated DNA in each sample is represented as signal relative to the total amount of input chromatin, which is equivalent to one.

Background References

1. Barbour H et al. Polycomb group-mediated histone H2A monoubiquitination in epigenome regulation and nuclear processes. Nat Commun. 2020 Nov
2. Jiang X et al. Short Histone H2A Variants: Small in Stature but not in Function. Cells. 2020 Apr