

Histone H2B (AcK20) polyclonal antibody

Catalog: BS67369

Host: Rabbit

Reactivity: Human, Mouse, Rat

BackGround:

The nucleosome, made up of four core histone proteins (H2A, H2B, H3, and H4), is the primary building block of chromatin. Originally thought to function as a static scaffold for DNA packaging, histones have now been shown to be dynamic proteins, undergoing multiple types of post-translational modifications, including acetylation, phosphorylation, methylation, and ubiquitination. The p300/CBP histone acetyltransferases acetylate multiple lysine residues in the amino terminal tail of histone H2B (Lys5, 12, 15, and 20) at gene promoters during transcriptional activation. Hyper-acetylation of the histone tails neutralizes the positive charge of these domains and is believed to weaken histone-DNA and nucleosome-nucleosome interactions, thereby destabilizing chromatin structure and increasing the access of DNA to various DNA-binding proteins. In addition, acetylation of specific lysine residues creates docking sites that facilitate recruitment of many transcription and chromatin regulatory proteins that contain a bromodomain, which binds to acetylated lysine residues. Histone H2B is mono-ubiquitinated at Lys120 during transcriptional activation by the RAD6 E2 protein in conjunction with the BRE1A/BRE1B E3 ligase (also known as RNF20/RNF40). Mono-ubiquitinated histone H2B Lys120 is associated with the transcribed region of active genes and stimulates transcriptional elongation by facilitating FACT-dependent chromatin remodeling. In addition, it is essential for subsequent methylation of histone H3 Lys4 and Lys79, two additional histone modifications that regulate transcriptional initiation and elongation. In response to metabolic stress, AMPK is recruited to responsive genes and phosphorylates histone H2B at Lys36, both at promoters and in transcribed regions of genes, and may regulate transcriptional elongation. In response to multiple apoptotic stimuli, histone H2B is phosphorylated

at Ser14 by the Mst1 kinase. Upon induction of apoptosis, Mst1 is cleaved and activated by caspase-3, leading to global phosphorylation of histone H2B during chromatin condensation. Interestingly, histone H2B is rapidly phosphorylated at irradiation-induced DNA damage foci in mouse embryonic fibroblasts. In this case, phosphorylation at Ser14 is rapid, depends on prior phosphorylation of H2AX Ser139, and occurs in the absence of apoptosis, suggesting that Ser14 phosphorylation may have distinct roles in DNA-damage repair and apoptosis.

Product:

Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.

Molecular Weight:

~ 14 kDa

Swiss-Prot:

Q96A08; P33778; P62807

Purification&Purity:

The antibody was purified by immunogen affinity chromatography.

Applications:

WB (1/500 - 1/1000), IHC (1/50 - 1/200)

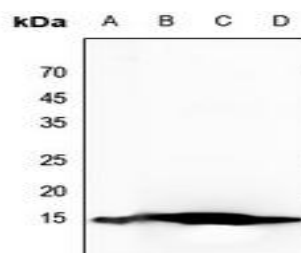
Storage&Stability:

Store at 4 °C short term. Aliquot and store at -20 °C long term. Avoid freeze-thaw cycles.

Specificity:

Recognizes endogenous levels of Histone H2B with a site at AcK20 protein.

DATA:



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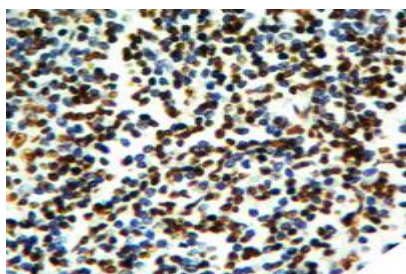
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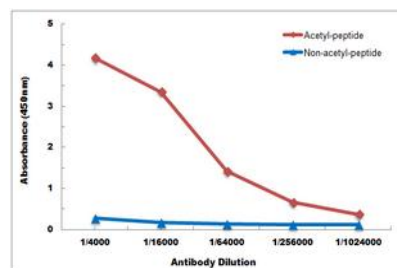
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Western blot analysis of Histone H2B (AcK20) expression in Hela (A), mouse lung (B), rat kidney (C), rat lung (D) whole cell lysates.



Immunohistochemical analysis of Histone H2B (AcK20) staining in human colorectal cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

**Note:**

For research use only, not for use in diagnostic procedure.

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