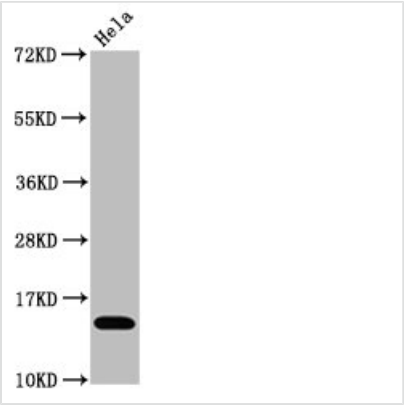
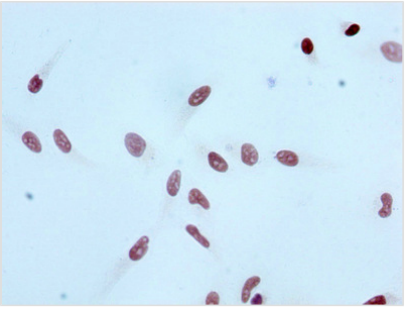
Acetyl-Histone H3.1 (K4) Recombinant Monoclonal Antibody

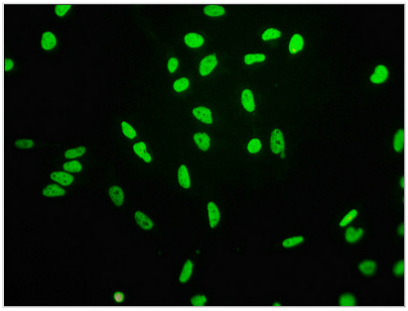
Product Code	CSB-RA010418A04acHU
Abbreviation	Histone H3.1
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P68431
Immunogen	A synthesized peptide
Species Reactivity	Human
Tested Applications	ELISA, WB, ICC, IF; Recommended dilution: WB:1:500-1:2000, ICC:1:50-1:500, IF:1:30-1:200
Relevance	Core component of nucleosome. Nucleosomes wrap and compact DNA into chromatin, limiting DNA accessibility to the cellular machineries which require DNA as a template. Histones thereby play a central role in transcription regulation, DNA repair, DNA replication and chromosomal stability. DNA accessibility is regulated via a complex set of post-translational modifications of histones, also called histone code, and nucleosome remodeling.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Alias	Histone H3.1, Histone H3/a, Histone H3/b, Histone H3/c, Histone H3/d, Histone H3/f, Histone H3/h, Histone H3/i, Histone H3/j, Histone H3/k, Histone H3/l, HIST1H3A, H3FA, AND, HIST1H3B, H3FL, AND, HIST1H3C, H3FC, AND, HIST1H3D, H3FB, AND, HIST1H3E, H3FD, AND, HIST1H3F, H3FI, AND, HIST1H3G, H3FH, AND, HIST1H3H, H3FK, AND, HIST1H3I, H3FF, AND, HIST1H3J, H3FJ
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling
Gene Names	HIST1H3A
Clone No.	4H6
Image	



Western Blot
Positive WB detected in Hela whole cell lysate treated by 15mM sodium butyrate for 30min
All lanes Acetyl-Histone H3.1(K4)antibody at 1.1µg/ml
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 15 KDa
Observed band size: 15 KDa



Immunocytochemistry analysis of CSB-RA010418A04acHU diluted at 1:100 and staining in Hela cells performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.



Immunofluorescence staining of Hela cells(treated by 15mM sodium butyrate for 30min) with CSB-RA010418A04acHU at 1:68,counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeabilized using 0.2% Triton X-100 and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4?.The secondary antibody was Alexa Fluor 488-congugated AffiniPure Goat Anti-Rabbit IgG (H+L).

Description

In the quest to produce the acetyl-histone H3.1 (K4) recombinant monoclonal antibody, the initial phase involves the extraction of genes encoding the HIST1H3A antibody from rabbits that have been previously exposed to a synthesized peptide derived from the human HIST1H3A protein acetylated at K4. These antibody genes are then seamlessly integrated into specialized expression vectors. Following this genetic modification, the modified vectors are introduced into host suspension cells, which are carefully cultured to stimulate the expression and secretion of antibodies. Subsequently, the HIST1H3A recombinant monoclonal antibody is subjected to a meticulous purification process utilizing affinity chromatography techniques, effectively isolating the antibody from the surrounding cell culture supernatant. Finally, the functionality of the antibody is comprehensively assessed through a diverse range of assays, including ELISA, WB, ICC, and IF tests, unequivocally confirming its ability to interact effectively with the human HIST1H3A protein acetylated at K4.

Acetylation of HIST1H3A at K4 is a key epigenetic modification that promotes an open chromatin structure and activates gene expression. It plays a central role

in transcriptional regulation, cellular differentiation, and the maintenance of gene expression patterns across generations of cells. Dysregulation of this modification can have significant implications for health and disease.