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Acetyl-Histone H2B (Lys20) (D7O9W) Rabbit mAb (PE Conjugate)

#49528

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New 06/19

Entrez-Gene ID #3018
UniProt ID #P33778

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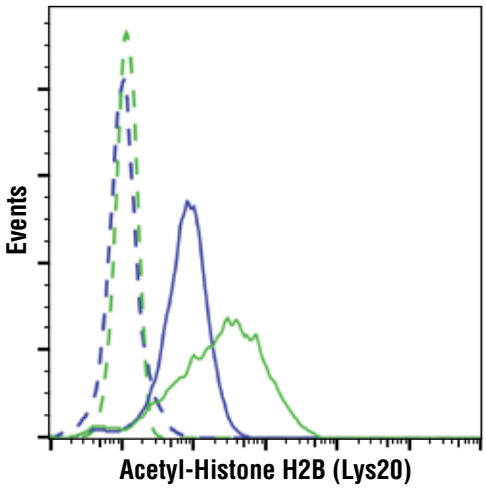
Applications	Species Cross-Reactivity*	Isotype
F Endogenous	H, M, R (Hm, B)	Rabbit IgG

Description: This Cell Signaling Technology antibody is conjugated to phycoerythrin (PE) and tested in-house for direct flow cytometric analysis in human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated Acetyl-Histone H2B (Lys20) (D7O9W) Rabbit mAb #34156.

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 (1,2). Histone acetylation occurs mainly on the amino-terminal tail domains of histones H2A (Lys5), H2B (Lys5, 12, 15, and 20), H3 (Lys9, 14, 18, 23, 27, 36 and 56), and H4 (Lys5, 8, 12, and 16) and is important for the regulation of histone deposition, transcriptional activation, DNA replication, recombination, and DNA repair (1-3). 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 accessibility of DNA to various DNA-binding proteins (4,5). In addition, acetylation of specific lysine residues creates docking sites for a protein module called the bromodomain, which binds to acetylated lysine residues (6). Many transcription and chromatin regulatory proteins contain bromodomains and may be recruited to gene promoters, in part, through binding of acetylated histone tails. Histone acetylation is mediated by histone acetyltransferases (HATs), such as CBP/p300, GCN5L2, PCAF, and Tip60, which are recruited to genes by DNA-bound protein factors to facilitate transcriptional activation (3). Deacetylation, which is mediated by histone deacetylases (HDAC and sirtuin proteins), reverses the effects of acetylation and generally facilitates transcriptional repression (7,8).

Specificity/Sensitivity: Acetyl-Histone H2B (Lys20) (D7O9W) Rabbit mAb (PE Conjugate) recognizes endogenous levels of histone H2B protein when acetylated at Lys20. This antibody shows very slight cross-reactivity with histone H2B when acetylated at Lys12.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic acetylated peptide corresponding to residues surrounding Lys20 of human histone H2B protein.



Flow cytometric analysis of HeLa cells, untreated (blue) or treated with Vorinostat (SAHA) #12520 (2 µM, 16 hr; green), using Acetyl-Histone H2B (Lys20) (D7O9W) Rabbit mAb (PE Conjugate) (solid lines) compared to concentration-matched Rabbit (DA1E) mAb IgG XP® Isotype Control (PE Conjugate) #5742 (dashed lines).

Storage: Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. *Do not aliquot the antibody. Protect from light. Do not freeze.*

***Species cross-reactivity is determined by western blot using the unconjugated antibody.**

Recommended Antibody Dilutions:

Flow Cytometry	1:50

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

Background References:

(1) Peterson, C.L. and Laniel, M.A. (2004) *Curr Biol* 14, R546-51.

(2) Jaskelioff, M. and Peterson, C.L. (2003) *Nat Cell Biol* 5, 395-9.

(3) Roth, S.Y. et al. (2001) *Annu Rev Biochem* 70, 81-120.

(4) Workman, J.L. and Kingston, R.E. (1998) *Annu Rev Biochem* 67, 545-79.

(5) Hansen, J.C. et al. (1998) *Biochemistry* 37, 17637-41.

(6) Yang, X.J. (2004) *Bioessays* 26, 1076-87.

(7) Haberland, M. et al. (2009) *Nat Rev Genet* 10, 32-42.

(8) Haigis, M.C. and Sinclair, D.A. (2010) *Annu Rev Pathol* 5, 253-95.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.