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#14040

Di-Methyl-Histone H3 (Lys27) (D18C8) XP[®] Rabbit mAb (HRP Conjugate)

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Entrez-Gene ID #8350
UniProt ID #P68431

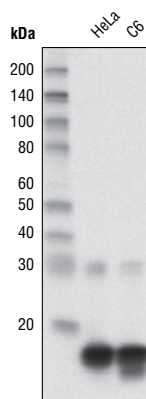
New 07/14

For Research Use Only. Not For Use In Diagnostic Procedures.

Applications W Endogenous	Species Cross-Reactivity* H, M, R, Mk	Molecular Wt. 17 kDa	Isotype Rabbit IgG
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Description: This Cell Signaling Technology antibody is conjugated to the carbohydrate groups of horseradish peroxidase (HRP) via its amine groups. The HRP conjugated antibody is expected to exhibit the same species cross-reactivity as the unconjugated Di-Methyl-Histone H3 (Lys27) (D18C8) XP[®] Rabbit mAb #9728.

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). Histone methylation is a major determinant for the formation of active and inactive regions of the genome and is crucial for the proper programming of the genome during development (2,3). Arginine methylation of histones H3 (Arg2, 17, 26) and H4 (Arg3) promotes transcriptional activation and is mediated by a family of protein arginine methyltransferases (PRMTs), including the co-activators PRMT1 and CARM1 (PRMT4) (4). In contrast, a more diverse set of histone lysine methyltransferases has been identified, all but one of which contain a conserved catalytic SET domain originally identified in the *Drosophila* Su(var)3-9, Enhancer of zeste, and Trithorax proteins. Lysine methylation occurs primarily on histones H3 (Lys4, 9, 27, 36, 79) and H4 (Lys20) and has been implicated in both transcriptional activation and silencing (4). Methylation of these lysine residues coordinates the recruitment of chromatin modifying enzymes containing methyl-lysine binding modules such as chromodomains (HP1, PRC1), PHD fingers (BPTF, ING2), tudor domains (53BP1), and WD-40 domains (WDR5) (5-8). The discovery of histone demethylases such as PADI4, LSD1, JMJD1, JMJD2, and JHDM1 has shown that methylation is a reversible epigenetic marker (9).



Western blot analysis of extracts from HeLa and C6 cells using Di-Methyl-Histone H3 (Lys27) (D18C8) XP[®] Rabbit mAb (HRP Conjugate).

Specificity/Sensitivity: Di-Methyl-Histone H3 (Lys27) (D18C8) XP[®] Rabbit mAb (HRP Conjugate) detects endogenous levels of histone H3 when di-methylated on Lys27. The antibody does show some cross-reactivity with mono-methylated Lys27, but does not cross-react with non-methylated or tri-methylated Lys27. In addition, the antibody does not cross-react with mono-methylated, di-methylated or tri-methylated histone H3 Lys4, Lys9, Lys36 or histone H4 Lys20.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the amino terminus of histone H3 in which Lys27 is di-methylated.

Storage: Supplied in 136 mM NaCl, 2.6 mM KCl, 12 mM sodium phosphate (pH 7.4) dibasic, 2 mg/ml BSA, and 50% glycerol. Store at -20°C. Do not aliquot the antibodies.

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

HRP-conjugated antibodies do not require incubation with a secondary antibody.

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

Recommended Antibody Dilutions:

Western blotting 1:1000

Background References:

- (1) Peterson, C.L. and Laniel, M.A. (2004) *Curr Biol* 14, R546-51.
- (2) Kubicek, S. et al. (2006) *Ernst Schering Res Found Workshop*, 1-27.
- (3) Lin, W. and Dent, S.Y. (2006) *Curr Opin Genet Dev* 16, 137-42.
- (4) Lee, D.Y. et al. (2005) *Endocr Rev* 26, 147-70.
- (5) Daniel, J.A. et al. (2005) *Cell Cycle* 4, 919-26.
- (6) Shi, X. et al. (2006) *Nature* 442, 96-9.
- (7) Wysocka, J. et al. (2006) *Nature* 442, 86-90.
- (8) Wysocka, J. et al. (2005) *Cell* 121, 859-72.
- (9) Trojer, P. and Reinberg, D. (2006) *Cell* 125, 213-7.

Tween[®] is a registered trademark of ICI Americas, Inc.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween[®]20 at 4°C with gentle shaking, overnight.

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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.

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