

#9759 Store at -20°C

Di-Methyl-Histone H4 (Lys20) Antibody

100 µl
 (10 western blots)



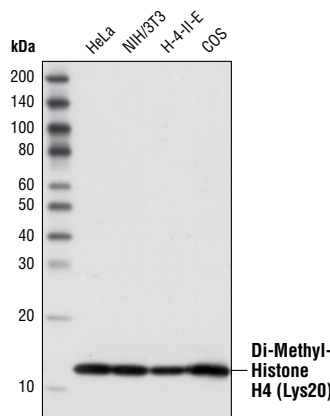
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rev. 01/05/10

This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk, (Pg, B, Dm, Z, Hr)	11 kDa	Rabbit**

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 recent discovery of histone demethylases such as PADI4, LSD1, JMJD1, JMJD2 and JHDM1 has shown that methylation is a reversible epigenetic mark (9).



Western blot analysis of extracts from various cell lines using Di-Methyl-Histone H4 (Lys20) Antibody.

Specificity/Sensitivity: Di-Methyl-Histone H4 (Lys20) Antibody detects endogenous levels of histone H4 only when di-methylated on Lys20. The antibody does not cross-react with non-, mono- or tri-methylated Lys20. In addition, the antibody does not cross-react with mono-, di- or tri-methylated histone H3 at Lys4, Lys9, Lys27 or Lys36.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the amino terminus of histone H4 in which lysine 20 is di-methylated. Antibodies are purified by protein A and peptide affinity chromatography.

Entrez-Gene ID #8370
Swiss-Prot Acc. #P62805

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

*Species cross-reactivity is determined by Western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

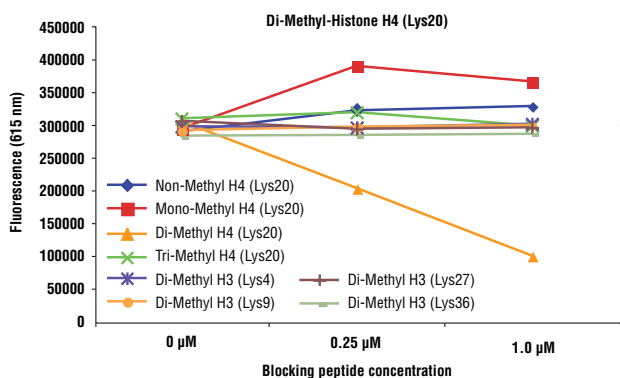
Western blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

- Peterson, C.L. and Laniel, M.A. (2004) *Curr. Biol.* 14, R546-R551.
- Kubicek, S. et al. (2006) *Ernst Schering Res. Found Workshop*, 1-27.
- Lin, W. and Dent, S.Y. (2006) *Curr. Opin. Genet. Dev.* 16, 137-142.
- Lee, D.Y. et al. (2005) *Endocr. Rev.* 26, 147-170.
- Daniel, J.A. et al. (2005) *Cell Cycle* 4, 919-926.
- Shi, X. et al. (2006) *Nature* 442, 96-99.
- Wysocka, J. et al. (2006) *Nature* 442, 86-90.
- Wysocka, J. et al. (2005) *Cell* 121, 859-872.
- Trojer, P. and Reinberg, D. (2006) *Cell* 125, 213-217.



◀ Di-Methyl-Histone H4 (Lys20) Antibody specificity was determined by peptide ELISA. The graph depicts the binding of the antibody to pre-coated di-methyl histone H4 (Lys20) peptide in the presence of increasing concentrations of various competitor peptides. As shown, only the di-methyl histone H4 (Lys20) peptide competed away binding of the antibody.

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 Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: 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.