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Tri-Methyl-Histone H3 (Lys36) (D5A7) XP[®] Rabbit mAb (PE Conjugate)

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: FC-FP	Reactivity: H M R Mk	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #P68431	Entrez-Gene Id: 8350
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Product Usage Information

Application

Flow Cytometry (Fixed/Permeabilized)

Dilution

1:50

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.

Specificity/Sensitivity

Tri-Methyl-Histone H3 (Lys36) (D5A7) XP[®] Rabbit mAb (PE Conjugate) detects endogenous levels of histone H3 only when tri-methylated on Lys36. The antibody does not cross-react with non-methylated, mono-methylated, or di-methylated Lys36. In addition, the antibody does not cross-react with histone H3 methylated at Lys4, Lys9, Lys27 or histone H4 methylated at Lys20.

Species predicted to react based on 100% sequence homology

Hamster, Chicken, *D. melanogaster*, *Xenopus*, Zebrafish, Bovine

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the amino terminus of histone H3 in which Lys36 is tri-methylated.

Description

This Cell Signaling Technology antibody is conjugated to phycoerythrin (PE) and tested in-house for direct flow cytometry analysis in human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated Tri-Methyl-Histone H3 (Lys36) (D5A7) XP[®] Rabbit mAb #4909.

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).

Background References

- Peterson, C.L. and Laniel, M.A. (2004) *Curr Biol* 14, R546-51.
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- Lin, W. and Dent, S.Y. (2006) *Curr Opin Genet Dev* 16, 137-42.
- Lee, D.Y. et al. (2005) *Endocr Rev* 26, 147-70.
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- Shi, X. et al. (2006) *Nature* 442, 96-9.
- Wysocka, J. et al. (2006) *Nature* 442, 86-90.
- Wysocka, J. et al. (2005) *Cell* 121, 859-72.
- Trojer, P. and Reinberg, D. (2006) *Cell* 125, 213-7.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

FC-FP: Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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