Revision 12

Store at -20C

#93212

ESET (D4M8R) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P, IF-IC, ChIP, ChIP-seq	H M R Mk	Endogenous	180	Rabbit IgG	#Q15047	9869

Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:1000
Immunofluorescence (Immunocytochemistry)	1:800
Chromatin IP	1:50
Chromatin IP-seq	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

ESET (D4M8R) XP® Rabbit mAb recognizes endogenous levels of total ESET protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the amino terminus of human ESET protein.

Background

The Erg-associated protein with SET domain (ESET), also known as SET-domain, bifurcated 1 (SETDB1) protein, is a member of a family of histone lysine methyltransferases, each of which contains a conserved catalytic SET domain originally identified in Drosophila Su[var]3-9, Enhancer of zeste, and Trithorax proteins (1). ESET also contains tudor and methyl-CpG-binding domains, which may coordinate binding to methylated histones and methylated DNA, respectively (1). ESET methylates histone H3 Lys9, creating a transcriptionally repressive mark that facilitates gene silencing (1-3). However, unlike SUV39H histone H3 Lys9 methyltransferases, which function mainly in heterochromatin regions such as pericentric heterochromatin, ESET functions mainly in euchromatic regions to repress gene promoters (3). ESET interacts with a variety of proteins, including transcription factors (ERG), histone deacetylases (HDAC1/2), DNA methyltransferases (DNMT3A/B) and transcriptional co-repressors (mSin3A/B, MBD1, KAP-1, the ATFa-associated modulator mAM) (1-6). mAM forms a complex with ESET, stimulating its methyltransferase activity, specifically the conversion of di-methyl to tri-methyl histone H3 Lys9 (2). MBD1 recruits ESET to the CAF-1 complex to facilitate methylation of histone H3 Lys9 during replication-coupled chromatin assembly in S phase (5). DNMT3A recruits ESET to silenced promoters in cancer cells (7). ESET may play a role in the pathogenesis of Huntington's disease, since levels of ESET protein and tri-methyl histone H3 Lys9 are both increased in diseased brains (8).

Background References

1. Yang, L. et al. (2002) *Oncogene* 21, 148-152.
2. Wang, H. et al. (2003) *Mol. Cell* 12, 475-487.
3. Schultz, D.C. et al. (2002) *Genes Dev.* 16, 919-932.
4. Yang, L. et al. (2003) *Biochem. J.* 369, 651-657.
5. Sarraf, S.A. and Stancheva, I. (2004) *Mol. Cell* 15, 595-605.
6. Ichimura, T. et al. (2005) *J. Biol. Chem.* 280, 13928-13935.
7. Li, H. et al. (2006) *J. Biol. Chem.* 281, 19489-19500.
8. Ryu, H. et al. (2006) *Proc. Natl. Acad. Sci. USA* 103, 19176-19181.

Species Reactivity

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

Western Blot Buffer

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

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry) **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq

Cross-Reactivity Key

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

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Limited Uses