Revision 1

#2196 Store at -20C

ESET (C1C12) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IF-IC	H Mk	Endogenous	180	Rabbit IgG	#Q15047	9869

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	1:100

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 (C1C12) Rabbit mAb detects endogenous levels of total ESET protein. The antibody does not cross-react with other SET-domain containing histone methyltransferase proteins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of the 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

WB: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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 **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

Trademarks and Patents

Limited Uses