

#2196 Store at -20°C

ESET (C1C12) Rabbit mAb

✓ 100 µl (10 western blots)

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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.

Entrez-Gene ID #9869
Swiss-Prot Acc. #Q15047

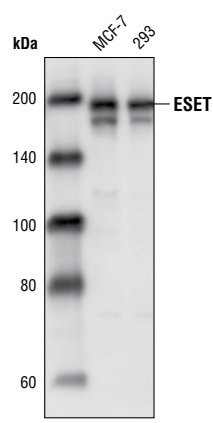
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IF-IC Endogenous	H, Mk	180 kDa	Rabbit IgG**

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).

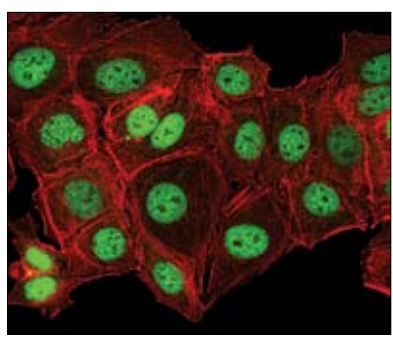
Specificity/Sensitivity: ESET (C1C12) Rabbit mAb detects endogenous levels of total ESET protein. The antibody does not cross-react with other SET-domain containing histone methyltransferase proteins.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the carboxy terminus of the human ESET protein.

- 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.



Western blot analysis of cell lysates from various cell types using ESET (C1C12) Rabbit mAb.



Confocal immunofluorescent analysis of MCF-7 cells using ESET (C1C12) Rabbit mAb (green). Actin filaments have been labeled with Alexa Fluor® 555 phalloidin (red).

- (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.

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.

*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
Immunoprecipitation	1:50
Immunofluorescence (IF-IC)	1:25

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.

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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.