

# ESET (A-7): sc-271553

## BACKGROUND

ERG-associated protein with SET domain (ESET), also designated Histone H3-K9 methyltransferase 4 or SET domain bifurcated 1, is a nuclear protein belonging to the histone-lysine methyltransferase family and to the Suvar3-9 subfamily. It is a highly conserved protein of 150 amino acids that has been implicated in chromatin structure modulation. ESET is excluded from cell nucleoli and areas of condensed chromatin and can associate with the non-pericentromeric regions of chromatin. The gene encoding for this protein, SETDB1, maps to chromosome 1q21.3. ESET is a histone methyltransferase, methylating Lys 9 of Histone H3 and mutations within the SETDB1 gene abolishes its methyltransferase activity. This methylation acts as a tag for epigenetic transcriptional repression by rounding up HP1 proteins to methylated histones. ESET is widely expressed with highest levels found in testis.

## REFERENCES

- Nomura, N., et al. 1994. Prediction of the coding sequences of unidentified human genes. II. The coding sequences of 40 new genes (KIAA0041-KIAA0080) deduced by analysis of cDNA clones from human cell line KG-1. *DNA Res.* 1: 223-229.
- Harte, P.J., et al. 1999. Assignment of a novel bifurcated SET domain gene, SETDB1, to human chromosome band 1q21 by *in situ* hybridization and radiation hybrids. *Cytogenet. Cell Genet.* 84: 83-86.
- Yang, L., et al. 2002. Molecular cloning of ESET, a novel Histone H3-specific methyltransferase that interacts with ERG transcription factor. *Oncogene* 21: 148-152.
- Wang, H., et al. 2003. mAM facilitates conversion by ESET of dimethyl to trimethyl Lysine 9 of Histone H3 to cause transcriptional repression. *Mol. Cell* 12: 475-487.
- Baxter, J., et al. 2004. Histone hypomethylation is an indicator of epigenetic plasticity in quiescent lymphocytes. *EMBO J.* 23: 4462-4472.
- Dodge, J.E., et al. 2004. Histone H3-K9 methyltransferase ESET is essential for early development. *Mol. Cell. Biol.* 24: 2478-2486.

## CHROMOSOMAL LOCATION

Genetic locus: SETDB1 (human) mapping to 1q21.3; Setdb1 (mouse) mapping to 3 F2.1.

## SOURCE

ESET (A-7) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of ESET of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271553 X, 200 µg/0.1 ml.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

ESET (A-7) is recommended for detection of ESET of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ESET (A-7) is also recommended for detection of ESET in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ESET siRNA (h): sc-45659, ESET siRNA (m): sc-45660, ESET shRNA Plasmid (h): sc-45659-SH, ESET shRNA Plasmid (m): sc-45660-SH, ESET shRNA (h) Lentiviral Particles: sc-45659-V and ESET shRNA (m) Lentiviral Particles: sc-45660-V.

ESET (A-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

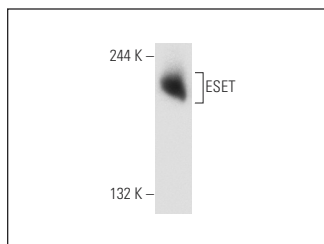
Molecular Weight of ESET: 180 kDa.

Positive Controls: F9 cell lysate: sc-2245, HeLa nuclear extract: sc-2120 or MCF7 nuclear extract: sc-2149.

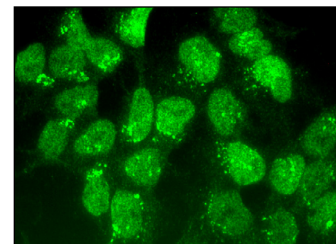
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



ESET (A-7): sc-271553. Western blot analysis of ESET expression in F9 whole cell lysate.



ESET (A-7): sc-271553. Immunofluorescence staining of formalin-fixed HepG2 cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Lin, J., et al. 2021. The SETDB1-TRIM28 complex suppresses antitumor immunity. *Cancer Immunol. Res.* 9: 1413-1424.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.