SANTA CRUZ BIOTECHNOLOGY, INC.

ESET (A-1): sc-166621

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. 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.
2. 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.

CHROMOSOMAL LOCATION

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

SOURCE

ESET (A-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1195-1228 near the C-terminus of ESET of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-166621 X, 200 µg/0.1 ml.

ESET (A-1) is available conjugated to agarose (sc-166621 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166621 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166621 PE), fluorescein (sc-166621 FITC), Alexa Fluor® 488 (sc-166621 AF488), Alexa Fluor® 546 (sc-166621 AF546), Alexa Fluor® 594 (sc-166621 AF594) or Alexa Fluor® 647 (sc-166621 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166621 AF680) or Alexa Fluor® 790 (sc-166621 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166621 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

ESET (A-1) 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).

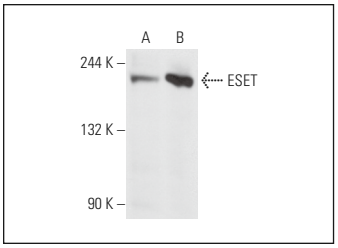
Suitable for use as control antibody for ESET siRNA (h): sc-45659, ESET siRNA (m): sc-45660, ESET shRNA Plasmid (h): sc-45659-SH, ESET shRNA Plasmid (m): sc-45660-SH, ESET shRNA (h) Lentiviral Particles: sc-45659-V and ESET shRNA (m) Lentiviral Particles: sc-45660-V.

ESET (A-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

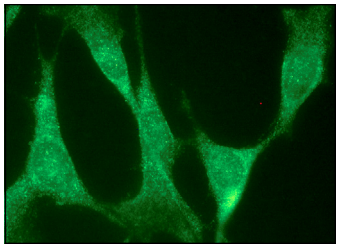
Molecular Weight of ESET: 180 kDa.

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

DATA



ESET (A-1): sc-166621. Western blot analysis of ESET expression in HeLa (**A**) and MCF7 (**B**) nuclear extracts.



ESET (A-1): sc-166621. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Yang, L., et al. 2011. ncRNA- and Pc2 methylation-dependent gene relocation between nuclear structures mediates gene activation programs. Cell 147: 773-788.
2. Liu, R., et al. 2022. SETDB1 regulates porcine spermatogonial adhesion and proliferation through modulating MMP3/10 transcription. Cells 11: 370.
3. Seefried, F., et al. 2022. Nuclear AREG affects a low-proliferative phenotype and contributes to drug resistance of melanoma. Int. J. Cancer 151: 2244-2264.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.