

SET7/9 (s4E5): sc-56774

BACKGROUND

The methylation of histones plays a pivotal role in the regulation of chromatin structure and gene expression. Histone methylation can occur on Arg or Lys residues, with an exquisite site selectivity for Lys methylation at specific positions in the N-termini of Histones H3 and H4. SET7/9, a histone methyltransferase (HMTase), which transfers methyl groups to Lys4 of Histone H3, forms a complex with S-adenosyl-L-methionine. This complex contains an active site consisting of a binding pocket where an AdoMet molecule in an unusual conformation binds, a narrow substrate-specific channel that only unmethylated lysine residues can access and a catalytic tyrosine residue.

REFERENCES

- Jenuwein, T. 2001. Re-SET-ting heterochromatin by histone methyltransferases. *Trends Cell Biol.* 11: 266-273.
- Wang, H., et al. 2001. Purification and functional characterization of a Histone H3-lysine 4-specific methyltransferase. *Mol. Cell* 8: 1207-1217.
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- Nishioka, K., et al. 2002. SET9, a novel Histone H3 methyltransferase that facilitates transcription by precluding histone tail modifications required for heterochromatin formation. *Genes Dev.* 16: 479-489.
- Kwon, T., et al. 2003. Mechanism of histone lysine methyl transfer revealed by the structure of SET7/9-AdoMet. *EMBO J.* 22: 292-303.
- Wysocka, J., et al. 2003. Human Sin3 deacetylase and trithorax-related SET1/ASH2 Histone H3-K4 methyltransferase are tethered together selectively by the cell-proliferation factor HCF1. *Genes Dev.* 17: 896-911.
- Xiao, B., et al. 2003. Structure and catalytic mechanism of the human histone methyltransferase SET7/9. *Nature* 421: 652-656.
- Kouskouti, A., et al. 2004. Gene-specific modulation of TAF10 function by SET9-mediated methylation. *Mol. Cell* 14: 175-182.

CHROMOSOMAL LOCATION

Genetic locus: SETD7 (human) mapping to 4q31.1; Setd7 (mouse) mapping to 3 C.

SOURCE

SET7/9 (s4E5) is a mouse monoclonal antibody raised against full length SET7/9 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

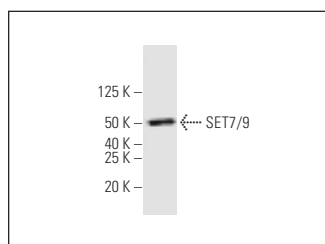
SET7/9 (s4E5) is recommended for detection of recombinant SET7/9 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 SET7/9 siRNA (h): sc-44094, SET7/9 siRNA (m): sc-45883, SET7/9 shRNA Plasmid (h): sc-44094-SH, SET7/9 shRNA Plasmid (m): sc-45883-SH, SET7/9 shRNA (h) Lentiviral Particles: sc-44094-V and SET7/9 shRNA (m) Lentiviral Particles: sc-45883-V.

Molecular Weight of SET7/9: 50 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

DATA



SET7/9 (s4E5): sc-56774. Western blot analysis of recombinant human SET7/9.

SELECT PRODUCT CITATIONS

- Chen, W., et al. 2013. Induction of siglec-G by RNA viruses inhibits the innate immune response by promoting RIG-I degradation. *Cell* 152: 467-478.
- Mishra, M., et al. 2014. Epigenetic modifications of Keap1 regulate its interaction with the protective factor Nrf2 in the development of diabetic retinopathy. *Invest. Ophthalmol. Vis. Sci.* 55: 7256-7265.
- Bravard, A., et al. 2014. FTO contributes to hepatic metabolism regulation through regulation of leptin action and Stat3 signalling in liver. *Cell Commun. Signal.* 12: 4.
- Yu, R., et al. 2019. Methylation of PLK1 by SET7/9 ensures accurate kinetochore-microtubule dynamics. *J. Mol. Cell Biol.* pii: mjz107.

RESEARCH USE

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

PROTOCOLS

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