SANTA CRUZ BIOTECHNOLOGY, INC.

SET7/9 (N-20): sc-28113

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Jenuwein, T. 2001. Re-SET-ting heterochromatin by histone methyltransferases. Trends Cell Biol. 11: 266-273.
2. Wang, H., et al. 2001. Purification and functional characterization of a histone H3-lysine 4-specific methyltransferase. Mol. Cell 8: 1207-1217.
3. Wilson, J.R., et al. 2002. Crystal structure and functional analysis of the histone methyltransferase SET7/9. Cell 111: 105-115.
4. 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.
5. Kwon, T., et al. 2003. Mechanism of histone lysine methyl transfer revealed by the structure of SET7/9-AdoMet. EMBO J. 22: 292-303.
6. 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 HCF-1. Genes Dev. 17: 896-911.
7. Xiao, B., et al. 2003. Structure and catalytic mechanism of the human histone methyltransferase SET7/9. Nature 421: 652-656.
8. 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 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SET7/9 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-28113 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 (N-20) is recommended for detection of SET7/9 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

SET7/9 (N-20) is also recommended for detection of SET7/9 in additional species, including equine, canine, bovine and porcine.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Miller, S.A., et al. 2008. Coordinated but physically separable interaction with H3-K27-demethylase and H3-K4-methyltransferase activities are required for T-box protein-mediated activation of developmental gene expression. Genes Dev. 22: 2980-2993.
2. Han, T., et al. 2015. Set7 facilitates hepatitis C virus replication via enzymatic activity-dependent attenuation of the IFN-related pathway. J. Immunol. 194: 2757-2768.

RESEARCH USE

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

PROTOCOLS

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