SANTA CRUZ BIOTECHNOLOGY, INC.

Pr-Set7 (A-19): sc-54995

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. Pr-Set7, also referred to as SET8, is a nucleosome-specific monomethylase that specifically methylates H4 at Lys 20, a mark of constitutive and facultative heterochromatin. Pr-Set7 is a single subunit enzyme and prefers nucleosomal substrates. It functions to regulate cell-cycle-dependent transcriptional silencing and mitotic regulation in metazoans. The amino acid sequence RHRKVLRDN (17-25) is required for the SET domain of Pr-Set7 to function and, thus, for multiplicity of methylation of Lys 20 of H4 to occur. The methylation mark is very stable and is maintained even in the absence of Pr-Set7.

REFERENCES

1. Fang, J., et al. 2002. Purification and functional characterization of SET8, a nucleosomal Histone H4-Lysine 20-specific methyltransferase. Curr. Biol. 12: 1086-1099.
2. Rice, J.C., et al. 2002. Mitotic-specific methylation of Histone H4 Lys 20 follows increased PR-Set7 expression and its localization to mitotic chromosomes. Genes Dev. 16: 2225-2230.
3. Nishioka, K., et al. 2002. PR-Set7 is a nucleosome-specific methyltransferase that modifies Lysine 20 of Histone H4 and is associated with silent chromatin. Mol. Cell 9: 1201-1213.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607240. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Karachentsev, D., et al. 2005. PR-Set7-dependent methylation of Histone H4 Lys 20 functions in repression of gene expression and is essential for mitosis. Genes Dev. 19: 431-435.
6. Xiao, B., et al. 2005. Specificity and mechanism of the histone methyltransferase Pr-Set7. Genes Dev. 19: 1444-1454.

CHROMOSOMAL LOCATION

Genetic locus: SETD8 (human) mapping to 12q24.31; Setd8 (mouse) mapping to 5 F.

SOURCE

Pr-Set7 (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Pr-Set7 of mouse 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-54995 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Pr-Set7 (A-19) is recommended for detection of Pr-Set7 of mouse and, to a lesser extent, 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).

Pr-Set7 (A-19) is also recommended for detection of Pr-Set7 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for Pr-Set7 siRNA (h): sc-62852, Pr-Set7 siRNA (m): sc-155946, Pr-Set7 shRNA Plasmid (h): sc-62852-SH, Pr-Set7 shRNA Plasmid (m): sc-155946-SH, Pr-Set7 shRNA (h) Lentiviral Particles: sc-62852-V and Pr-Set7 shRNA (m) Lentiviral Particles: sc-155946-V.

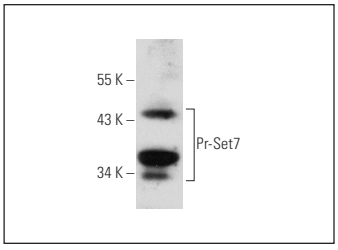
Molecular Weight of Pr-Set7: 43 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, NIH/3T3 nuclear extract: sc-2138 or RAW 264.7 nuclear extract: sc-24961.

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.

DATA



Pr-Set7 (A-19): sc-54995. Western blot analysis of Pr-Set7 expression in A-431 nuclear extract.

STORAGE

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

MONOS Satisfaction Guaranteed

Try **Pr-Set7 (D-4): sc-515433** or **Pr-Set7 (D-11): sc-377034**, our highly recommended monoclonal alternatives to Pr-Set7 (A-19).