SANTA CRUZ BIOTECHNOLOGY, INC.

PRMT1 (m): 293T Lysate: sc-127382

BACKGROUND

A class of proteins termed type 1 protein arginine N-methyltransferase (PRMT) enzymes contribute to posttranslational modification of RNA-binding proteins, but differ in substrate specificities, oligomerization properties and subcellular localization. PRMT1, the predominant form in mammalian cells, is located in the nucleus, while PRMT3 is present in the cytoplasm. At the carboxy-terminus, interleukin enhancer-binding factor 3 (ILF3) binds PRMT1, thereby regulating PRMT1 activitiy. Alternative mRNA splicing of the PRMT gene results in three isoforms of PRMT1 that differ in their amino-terminus regions. All three splice variants of PRMT1 are enzymatically active. PRMT3 recognizes and binds to RNA-associated substrates with a zinc-finger domain in its amino-terminus. The zinc-liganded form of this domain is required for the enzyme to recognize RNA-associated substrates.

REFERENCES

1. Tang, J., et al. 1998. PRMT3, a type 1 protein arginine N-methyltransferase that differs from PRMT1 in its oligomerization, subcellular localization, substrate specificity and regulation. J. Biol. Chem. 272: 6935-16945.
2. Tang, J., et al. 2000. PRMT1 is the predominant type 1 protein arginine methyltransferase in mammalian cells. J. Biol. Chem. 275: 7723-7730.
3. Tang, J., et al. 2000. Protein-arginine methyltransferase I, the predominant protein-arginine methyltransferase in cells, interacts with and is regulated by interleukin enhancer-binding factor 3. J. Biol. Chem. 275: 19866-19876.
4. Frankel, A., et al. 2000. PRMT3 is a distinct member of the protein arginine N-methyltransferase family. Conferral of substrate specificity by a zinc-finger domain. J. Biol. Chem. 275: 32974-32982.
5. Scorilas, A., et al. 2000. Genomic organization, physical mapping and expression analysis of the human protein arginine methyltransferase 1 gene. Biochem. Biophys. Res. Commun. 278: 349-359.
6. Zhang, X., et al. 2003. Structure of the predominant protein arginine methyltransferase PRMT1 and analysis of its binding to substrate peptides. Structure 11: 509-520.
7. An, W., et al. 2004. Ordered cooperative functions of PRMT1, p300 and CARM1 in transcriptional activation by p53. Cell 117: 735-748.
8. Boisvert, F.M., et al. 2005. Arginine methylation of MRE11 by PRMT1 is required for DNA damage checkpoint control. Genes Dev. 19: 671-676.

CHROMOSOMAL LOCATION

Genetic locus: Prmt1 (mouse) mapping to 7 B4.

PRODUCT

PRMT1 (m): 293T Lysate represents a lysate of mouse PRMT1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

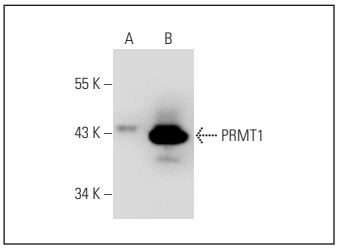
APPLICATIONS

PRMT1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PRMT1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PRMT1 (PRMT1-171): sc-59648 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse PRMT1 expression in PRMT1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



PRMT1 (PRMT1-171): sc-59648. Western blot analysis of PRMT1 expression in non-transfected: sc-117752 (**A**) and mouse PRMT1 transfected: sc-127382 (**B**) 293T whole cell lysates.

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.