

PRMT3 (PRMT3-367): sc-59649

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 activity. 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.* 273: 16935-16945.
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. 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.
5. 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.
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: PRMT3 (human) mapping to 11p15.1; Prmt3 (mouse) mapping to 7 B5.

SOURCE

PRMT3 (PRMT3-367) is a mouse monoclonal antibody raised against amino acids 501-514 of PRMT3 of rat origin.

PRODUCT

Each vial contains 100 µg IgG₃ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PRMT3 (PRMT3-367) is recommended for detection of PRMT3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with PRMT1, 2, 4, 5 or 6.

Suitable for use as control antibody for PRMT3 siRNA (h): sc-41071, PRMT3 siRNA (m): sc-41072, PRMT3 shRNA Plasmid (h): sc-41071-SH, PRMT3 shRNA Plasmid (m): sc-41072-SH, PRMT3 shRNA (h) Lentiviral Particles: sc-41071-V and PRMT3 shRNA (m) Lentiviral Particles: sc-41072-V.

Molecular Weight of PRMT3: 60 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209.

SELECT PRODUCT CITATIONS

1. Croxatto, A. and Greub, G. 2010. Early intracellular trafficking of Waddlia chondrophila in human macrophages. *Microbiology* 156: 340-355.

STORAGE

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

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.