

# PRMT1 (MAT-B12): sc-59647

## BACKGROUND

A class of proteins termed type 1 protein arginine N-methyltransferase (PRMTs) enzymes contribute to post-translational 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.* 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.

## CHROMOSOMAL LOCATION

Genetic locus: HRMT1L2 (human) mapping to 19q13.33; Hrmt1l2 (mouse) mapping to 7 B3.

## SOURCE

PRMT1 (MAT-B12) is a mouse monoclonal antibody raised against fusion protein PRMT1 of human origin.

## PRODUCT

Each vial contains 100 µl ascites containing IgG<sub>1</sub> with < 0.1% sodium azide.

## RESEARCH USE

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

## APPLICATIONS

PRMT1 (MAT-B12) is recommended for detection of PRMT1 of mouse and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500).

Suitable for use as control antibody for PRMT1 siRNA (h): sc-41069, PRMT1 siRNA (m): sc-41070, PRMT1 shRNA Plasmid (h): sc-41069-SH, PRMT1 shRNA Plasmid (m): sc-41070-SH, PRMT1 shRNA (h) Lentiviral Particles: sc-41069-V and PRMT1 shRNA (m) Lentiviral Particles: sc-41070-V.

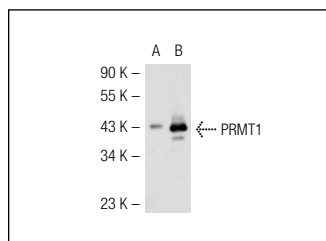
Molecular Weight of PRMT1: 42-45 kDa.

Positive Controls: PRMT1 (m): 293T Lysate: sc-127382, PC-3 cell lysate: sc-2220 or HeLa whole cell lysate: sc-2200.

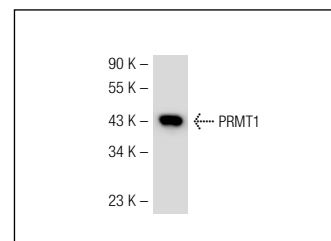
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



PRMT1 (MAT-B12): sc-59647. Western blot analysis of PRMT1 expression in non-transfected: sc-117752 (A) and mouse PRMT1 transfected: sc-127382 (B) 293T whole cell lysates.



PRMT1 (MAT-B12): sc-59647. Western blot analysis of PRMT1 expression in PC-3 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Martin, G., et al. 2010. Arginine methylation in subunits of mammalian pre-mRNA cleavage factor I. *RNA* 16: 1646-1659.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.