

# PRMT6 (H-2): sc-365018

## BACKGROUND

A class of proteins termed type one protein arginine N-methyltransferase (PRMT) enzymes contribute to posttranslational modification of RNA-binding proteins, but differ in substrate specificities, oligomerization properties and subcellular localization. PRMTs contain an S-adenosylmethionine motif which functions to add one or two methyl groups to guanidino nitrogens of arginine (R) side chains. PRMT6, also known as HRMT1L6, is a nuclear protein belonging to the PRMT family and is predominantly expressed in testis and kidney. It is known to methylate Histones H3, H4 and H2A. PRMT6 is the major dimethyltransferase for Histone H3 and specifically methylates Histone H3 at R2. Methylation at Histone H3 R2 acts to inhibit Histone H3 K4 trimethylation and ultimately leads to the transcriptional repression of genes that are activated by Histone H3 K4 trimethylation. In addition, PRMT6 methylates HIV TAT, possibly functioning as a form of cellular innate immunity to restrict levels of HIV replication.

## REFERENCES

1. Boulanger, M.C., et al. 2005. Methylation of TAT by PRMT6 regulates human immunodeficiency virus type 1 gene expression. *J. Virol.* 79: 124-131.
2. Miranda, T.B., et al. 2005. Protein arginine methyltransferase 6 specifically methylates the nonhistone chromatin protein HMGA1a. *Biochem. Biophys. Res. Commun.* 336: 831-835.
3. El-Andaloussi, N., et al. 2006. Arginine methylation regulates DNA polymerase  $\beta$ . *Mol. Cell* 22: 51-62.
4. Sgarra, R., et al. 2006. The AT-hook of the chromatin architectural transcription factor high mobility group A1a is arginine-methylated by protein arginine methyltransferase 6. *J. Biol. Chem.* 281: 3764-3772.
5. Hyllus, D., et al. 2007. PRMT6-mediated methylation of R2 in Histone H3 antagonizes H3 K4 trimethylation. *Genes Dev.* 21: 3369-3380.
6. Guccione, E., et al. 2007. Methylation of histone H3R2 by PRMT6 and H3K4 by an MLL complex are mutually exclusive. *Nature* 449: 933-937.
7. Invernizzi, C.F., et al. 2007. Arginine methylation of the HIV-1 nucleocapsid protein results in its diminished function. *AIDS* 21: 795-805.
8. Xie, B., et al. 2007. Arginine methylation of the human immunodeficiency virus type 1 Tat protein by PRMT6 negatively affects Tat interactions with both cyclin T1 and the Tat transactivation region. *J. Virol.* 81: 4226-4234.
9. Iberg, A.N., et al. 2008. Arginine methylation of the Histone H3 tail impedes effector binding. *J. Biol. Chem.* 283: 3006-3010.

## CHROMOSOMAL LOCATION

Genetic locus: PRMT6 (human) mapping to 1p13.3; Prmt6 (mouse) mapping to 3 F3.

## SOURCE

PRMT6 (H-2) is a mouse monoclonal antibody raised against amino acids 181-310 mapping within an internal region of PRMT6 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PRMT6 (H-2) is recommended for detection of PRMT6 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for PRMT6 siRNA (h): sc-106848, PRMT6 siRNA (m): sc-108029, PRMT6 shRNA Plasmid (h): sc-106848-SH, PRMT6 shRNA Plasmid (m): sc-108029-SH, PRMT6 shRNA (h) Lentiviral Particles: sc-106848-V and PRMT6 shRNA (m) Lentiviral Particles: sc-108029-V.

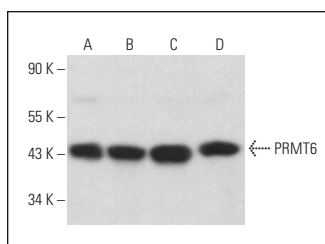
Molecular Weight of PRMT6: 42 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, A-431 whole cell lysate: sc-2201 or KNRK nuclear extract: sc-2141.

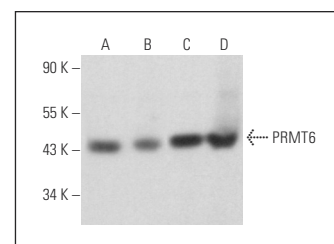
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



PRMT6 (H-2): sc-365018. Western blot analysis of PRMT6 expression in HeLa nuclear extract (A) and SK-BR-3 (B), A2058 (C) and PC-12 (D) whole cell lysates.



PRMT6 (H-2): sc-365018. Western blot analysis of PRMT6 expression in MCF7 (A), A-431 (B) and HEK293 (C) whole cell lysates and KNRK nuclear extract (D).

## 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.