SANTA CRUZ BIOTECHNOLOGY, INC.

PRMT1 (B-2): sc-166963

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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 of which are enzymatically active. PRMT8, also known as HRMT1L3 or HRMT1L4 (heterogenous nuclear ribonucleioprotein methyltransferase-like protein 4), is a distinct member of the type 1 PRMT family with tissue-specific expression and plasma membrane localization. PRMT8 is specifically expressed in the brain where it functions as an arginine methyltransferase with a possible role in neuronal differentiation. It is most closely related to PRMT1 and may have arisen through a gene duplication. PRMT8 can heterodimerize with PRMT1 and has similar substrate preference.

CHROMOSOMAL LOCATION

Genetic locus: PRMT1 (human) mapping to 19q13.33; Prmt1 (mouse) mapping to 7 B4.

SOURCE

PRMT1 (B-2) is a mouse monoclonal antibody raised against amino acids 166-300 mapping within an internal region of PRMT1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PRMT1 (B-2) is available conjugated to agarose (sc-166963 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166963 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166963 PE), fluorescein (sc-166963 FITC), Alexa Fluor® 488 (sc-166963 AF488), Alexa Fluor® 546 (sc-166963 AF546), Alexa Fluor® 594 (sc-166963 AF594) or Alexa Fluor® 647 (sc-166963 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166963 AF680) or Alexa Fluor® 790 (sc-166963 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PRMT1 (B-2) is recommended for detection of PRMT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

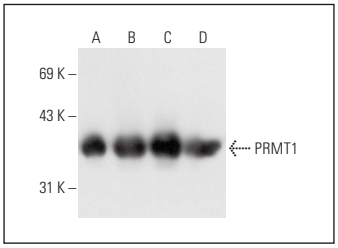
Suitable for use as control antibody for PRMT1 siRNA (h): sc-41069, PRMT1 siRNA (m): sc-41070, PRMT1 shRNA Plasmid (h): sc-41069-SH, PRMT1 shRNA Plasmid (m): sc-41070-SH, PRMT1 shRNA (h) Lentiviral Particles: sc-41069-V and PRMT1 shRNA (m) Lentiviral Particles: sc-41070-V.

Molecular Weight of PRMT1: 42 kDa.

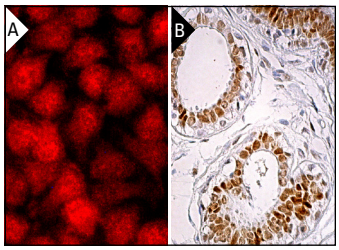
STORAGE

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

DATA



PRMT1 (B-2): sc-166963. Western blot analysis of PRMT1 expression in COLO 320DM (**A**), HeLa (**B**), IMR-32 (**C**) and WI-38 (**D**) whole cell lysates.



PRMT1 (B-2): sc-166963. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Andreu-Pérez, P., et al. 2011. Protein arginine methyltransferase 5 regulates ERK1/2 signal transduction amplitude and cell fate through CRAF. Sci. Signal. 4: ra58.
2. Lai, Y., et al. 2017. Lipopolysaccharide modulates p300 and SIRT1 to promote PRMT1 stability via an SCF^{Fbxl17}-recognized acetyldegron. J. Cell Sci. 130: 3578-3587.
3. Zhang, Y., et al. 2018. Protein arginine methyltransferase 1 coordinates the epithelial-mesenchymal transition/proliferation dichotomy in gastric cancer cells. Exp. Cell Res. 362: 43-50.
4. Sun, W., et al. 2019. Monitoring structural modulation of redox-sensitive proteins in cells with MS-CETSA. Redox Biol. 24: 101168.
5. Plotnikov, A., et al. 2020. PRMT1 inhibition induces differentiation of colon cancer cells. Sci. Rep. 10: 20030.
6. Jiang, L., et al. 2021. Geranylgeranylacetone promotes human osteosarcoma cell apoptosis by inducing the degradation of PRMT1 through the E3 ubiquitin ligase CHIP. J. Cell. Mol. Med. 25: 7961-7972.
7. Amano, Y., et al. 2022. Expression and localisation of methylthioadenosine phosphorylase (MTAP) in oral squamous cell carcinoma and their significance in epithelial-to-mesenchymal transition. Pathology 54: 294-301.
8. Tang, S., et al. 2022. A genome-scale CRISPR screen reveals PRMT1 as a critical regulator of androgen receptor signaling in prostate cancer. Cell Rep. 38: 110417.
9. Goruppi, S., et al. 2023. The ULK3 kinase is a determinant of keratinocyte self-renewal and tumorigenesis targeting the arginine methylome. Nat. Commun. 14: 887.

RESEARCH USE

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