SANTA CRUZ BIOTECHNOLOGY, INC.

PRMT5 (23C7): sc-136202

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The Power to Question

BACKGROUND

The formation of the spliceosome includes the assembly of Sm proteins in an ordered manner onto snRNAs. This process is mediated by the survival of a motor neuron (SMN) protein, and is enhanced by modification of specific Arginine residues in the Sm proteins to symmetrical dimethylarginines (sDMAs). sDMA modification of Sm proteins is catalyzed by the methylosome, a complex comprised of the type II methyltransferase PRMT5 (also designated JAK-binding protein 1, JBP1), pICln and two novel factors. PRMT5 binds the Sm proteins via their Arginine- and Glycine-rich (RG) domains, while pICln binds the Sm domains. PRMT5 is a distinct member of the protein-Arginine methyltransferase (PRMT) family, and predominantly localizes to the cytoplasm in a wide variety of tissues. PRMT5 also associates specifically with the transcription start site region of the cyclin E1 promoter and, therefore, is involved in the control of transcription and proliferation. The gene encoding human PRMT5 maps to chromosome 14q11.

REFERENCES

1. Pollack, B.P., et al. 1999. The human homologue of the yeast proteins Skb1 and Hsl7p interacts with JAK kinases and contains protein methyltransferase activity. J. Biol. Chem. 274: 31531-31542.
2. Frankel, A. and Clarke, S. 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.
3. Meister, G., et al. 2001. Methylation of Sm proteins by a complex containing PRMT5 and the putative U snRNP assembly factor pICln. Curr. Biol. 11: 1990-1994.
4. Friesen, W.J., et al. 2001. The methylosome, a 20 S complex containing JBP1 and pICln, produces dimethylarginine-modified Sm proteins. Mol. Cell. Biol. 21: 8289-8300.
5. Rho, J., et al. 2001. PRMT5, which forms distinct homo-oligomers, is a member of the protein-arginine methyltransferase family. J. Biol. Chem. 276: 11393-11401.
6. Branscombe, T.L., et al. 2001. PRMT5 (Janus kinase-binding protein 1) catalyzes the formation of symmetric dimethylarginine residues in proteins. J. Biol. Chem. 276: 32971-32976.
7. Fabbrizio, E., et al. 2002. Negative regulation of transcription by the type II arginine methyltransferase PRMT5. EMBO Rep. 3: 641-645.

CHROMOSOMAL LOCATION

Genetic locus: PRMT5 (human) mapping to 14q11.2.

SOURCE

PRMT5 (23C7) is a mouse monoclonal antibody raised against PRMT5 of human origin.

PRODUCT

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

APPLICATIONS

PRMT5 (23C7) is recommended for detection of PRMT5 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for PRMT5 siRNA (h): sc-41073, PRMT5 shRNA Plasmid (h): sc-41073-SH and PRMT5 shRNA (h) Lentiviral Particles: sc-41073-V.

Molecular Weight of PRMT5: 72 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or ES-2 cell lysate: sc-24674.

SELECT PRODUCT CITATIONS

1. Sohail, M., et al. 2015. Differential expression, distinct localization and opposite effect on Golgi structure and cell differentiation by a novel splice variant of human PRMT5. Biochim. Biophys. Acta 1853: 2444-2452.

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.

CONJUGATES

See **PRMT5 (A-11): sc-376937** for PRMT5 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.