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SANTA CRUZ BIOTECHNOLOGY, INC.

PRMT5 (h): 293T Lysate: sc-173642

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 14q11.2.

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 20S 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.
8. Chie, L., et al. 2003. A protein methyl transferase, PRMT5, selectively blocks oncogenic Ras-p21 mitogenic signal transduction. Ann. Clin. Lab. Sci. 33: 200-207.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

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

PRODUCT

PRMT5 (h): 293T Lysate represents a lysate of human PRMT5 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PRMT5 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PRMT5 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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