

Dnmt3b (h): 293 Lysate: sc-128485

BACKGROUND

Methylation at the 5'-position of cytosine is the only known naturally occurring covalent modification of the mammalian genome. DNA methylation requires the enzymatic activity of DNA 5-cytosine methyltransferase (Dnmt) proteins, which catalyze the transfer of a methyl group from S-adenosyl methionine to the 5'-position of cytosines residing in the dinucleotide CpG motif, and this methylation results in transcriptional repression of the target gene. The Dnmt enzymes are encoded by independent genes. Dnmt1 is the most abundant, and it preferentially methylates hemimethylated DNA and coordinates gene expression during development. Additional mammalian Dnmt proteins include Dnmt2 and Dnmt3. Dnmt2 lacks the large N-terminal regulator domain of Dnmt1, is expressed at substantially lower levels in adult tissues, and is likely involved in methylating newly integrated retroviral DNA. Dnmt3a and Dnmt3b are encoded by two distinct genes, but both are abundantly expressed in embryonic stem cells, where they also methylate CpG motifs on DNA.

REFERENCES

1. Yoder, J.A., et al. 1997. DNA (cytosine-5)-methyltransferases in mouse cells and tissues. Studies with a mechanism-based probe. *J. Mol. Biol.* 270: 385-395.
2. Okano, M., et al. 1998. Dnmt2 is not required for *de novo* and maintenance methylation of viral DNA in embryonic stem cells. *Nucleic Acids Res.* 26: 2536-2540.
3. Walsh, C.P. and Bestor, T.H. 1999. Cytosine methylation and mammalian development. *Genes Dev.* 13: 26-34.
4. Hsieh, C.L. 1999. *In vivo* activity of murine *de novo* methyltransferases, Dnmt3a and Dnmt3b. *Mol. Cell. Biol.* 19: 8211-8218.
5. Cardoso, M.C. and Leonhardt, H. 1999. DNA methyltransferase is actively retained in the cytoplasm during early development. *J. Cell Biol.* 147: 25-32.
6. Bigey, P., et al. 2000. Transcriptional regulation of the human DNA methyltransferase (dnmt1) gene. *Gene* 242: 407-418.
7. Fuks, F., et al. 2000. DNA methyltransferase Dnmt1 associates with histone deacetylase activity. *Nat. Genet.* 24: 88-91.

CHROMOSOMAL LOCATION

Genetic locus: DNMT3B (human) mapping to 20q11.21.

PRODUCT

Dnmt3b (h): 293 Lysate represents a lysate of human Dnmt3b transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

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.

APPLICATIONS

Dnmt3b (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive Dnmt3b antibodies. Recommended use: 10-20 µl per lane.

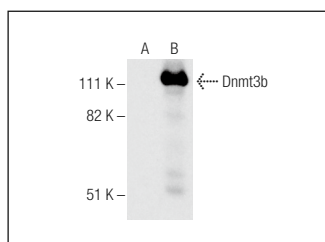
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

Dnmt3b (G-9): sc-376043 is recommended as a positive control antibody for Western Blot analysis of enhanced human Dnmt3b expression in Dnmt3b transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

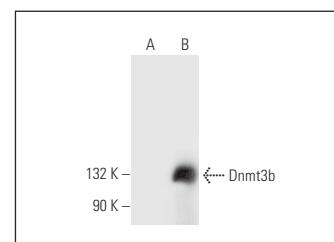
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Dnmt3b (G-9): sc-376043. Western blot analysis of Dnmt3b expression in non-transfected: sc-110760 (A) and human Dnmt3b transfected: sc-128485 (B) 293 whole cell lysates.



Dnmt3b (F-2): sc-393845. Western blot analysis of Dnmt3b expression in non-transfected: sc-110760 (A) and human Dnmt3b transfected: sc-128485 (B) 293 whole cell lysates.

RESEARCH USE

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