

Dnmt3b (N-19): sc-10235

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.

CHROMOSOMAL LOCATION

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

SOURCE

Dnmt3b (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Dnmt3b of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-10235 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Dnmt3b (N-19) is recommended for detection of Dnmt3b of human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Dnmt3b siRNA (h): sc-37759, Dnmt3b shRNA Plasmid (h): sc-37759-SH and Dnmt3b shRNA (h) Lentiviral Particles: sc-37759-V.

Molecular Weight of Dnmt3b: 97 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or Dnmt3b (h): 293 Lysate: sc-128485.

RESEARCH USE

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

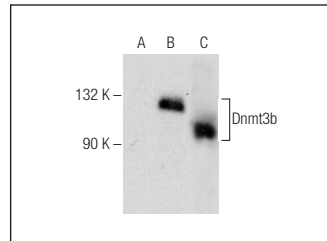
PROTOCOLS

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

STORAGE

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

DATA



Dnmt3b (N-19): sc-10235. Western blot analysis of Dnmt3b expression in non-transfected 293: sc-110760 (A), human Dnmt3b transfected 293: sc-128485 (B) and K-562 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Chadwick, B.P., et al. 2002. Cell cycle-dependent localization of macroH2A in chromatin of the inactive X chromosome. *J. Cell Biol.* 157: 1113-1123.
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- Hough, S.R., et al. 2009. A continuum of cell states spans pluripotency and lineage commitment in human embryonic stem cells. *PLoS ONE* 4: e7708.
- Jeong, S., et al. 2009. Selective anchoring of DNA methyltransferases 3A and 3B to nucleosomes containing methylated DNA. *Mol. Cell. Biol.* 29: 5366-5376.
- Shin, D.M., et al. 2009. Novel epigenetic mechanisms that control pluripotency and quiescence of adult bone marrow-derived Oct4⁺ very small embryonic-like stem cells. *Leukemia* 23: 2042-2051.
- Kuck, D., et al. 2010. Nanaomycin A selectively inhibits DNMT3B and reactivates silenced tumor suppressor genes in human cancer cells. *Mol. Cancer Ther.* 9: 3015-3023.
- Dou, S., et al. 2012. Anti-Her2 single-chain antibody mediated DNMTs-siRNA delivery for targeted breast cancer therapy. *J. Control. Release* 161: 875-883.


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