SANTA CRUZ BIOTECHNOLOGY, INC.

Dnmt3b (H-230): sc-20704

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The Power to Question

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; Dnmt3b (mouse) mapping to 2 H1.

SOURCE

Dnmt3b (H-230) is a rabbit polyclonal antibody raised against amino acids 1-230 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.

APPLICATIONS

Dnmt3b (H-230) is recommended for detection of Dnmt3b of mouse, rat and 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 siRNA (m): sc-37760, Dnmt3b shRNA Plasmid (h): sc-37759-SH, Dnmt3b shRNA Plasmid (m): sc-37760-SH, Dnmt3b shRNA (h) Lentiviral Particles: sc-37759-V and Dnmt3b shRNA (m) Lentiviral Particles: sc-37760-V.

Molecular Weight of Dnmt3b: 97 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

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.

SELECT PRODUCT CITATIONS

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9. Beyrouthy, M.J., et al. 2009. High DNA methyltransferase 3B expression mediates 5-aza-deoxycytidine hypersensitivity in testicular germ cell tumors. Cancer Res. 69: 9360-9366.
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10. Zhang, L., et al. 2011. Age-related changes in the localization of DNA methyltransferases during meiotic maturation in mouse oocytes. Fertil. Steril. 95: 1531.e1-1534.e1.
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12. An, H.J., et al. 2011. Silencing of BNIP3 results from promoter methylation by DNA methyltransferase 1 induced by the mitogen-activated protein kinase pathway. Mol. Cells 31: 579-583.
13. Rangel-Salazar, R., et al. 2011. Human native lipoprotein-induced *de novo* DNA methylation is associated with repression of inflammatory genes in THP-1 macrophages. BMC Genomics 12: 582.