

# Dnmt3b (G-9): sc-376043

## 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 (G-9) is a mouse monoclonal antibody raised against amino acids 1-230 mapping near the N-terminus of Dnmt3b of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Dnmt3b (G-9) is available conjugated to agarose (sc-376043 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376043 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376043 PE), fluorescein (sc-376043 FITC), Alexa Fluor® 488 (sc-376043 AF488), Alexa Fluor® 546 (sc-376043 AF546), Alexa Fluor® 594 (sc-376043 AF594) or Alexa Fluor® 647 (sc-376043 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376043 AF680) or Alexa Fluor® 790 (sc-376043 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Dnmt3b (G-9) is recommended for detection of Dnmt3b of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

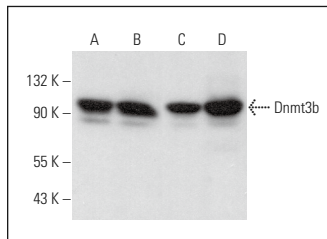
Suitable for use as control antibody for Dnmt3b siRNA (h): sc-37759, Dnmt3b siRNA (m): sc-37760, Dnmt3b siRNA (r): sc-270020, Dnmt3b shRNA Plasmid (h): sc-37759-SH, Dnmt3b shRNA Plasmid (m): sc-37760-SH, Dnmt3b shRNA Plasmid (r): sc-270020-SH, Dnmt3b shRNA (h) Lentiviral Particles: sc-37759-V, Dnmt3b shRNA (m) Lentiviral Particles: sc-37760-V and Dnmt3b shRNA (r) Lentiviral Particles: sc-270020-V.

Molecular Weight of Dnmt3b: 97 kDa.

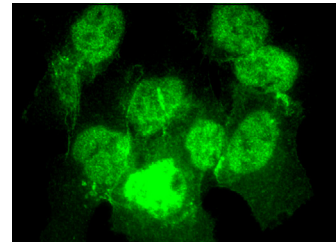
## STORAGE

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

## DATA



Dnmt3b (G-9): sc-376043. Western blot analysis of Dnmt3b expression in A549 (A), NTERA-2 cl.D1 (B), F9 (C) and C6 (D) whole cell lysates.



Dnmt3b (G-9): sc-376043. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Agarwal, S., et al. 2013. Mahanine restores RASSF1A expression by down-regulating DNMT1 and Dnmt3b in prostate cancer cells. *Mol. Cancer* 12: 99.
- Zhu, B., et al. 2017. Atorvastatin treatment modulates p16 promoter methylation to regulate p16 expression. *FEBS J.* 284: 1868-1881.
- Lewinska, A., et al. 2018. Reduced levels of methyltransferase Dnmt2 sensitize human fibroblasts to oxidative stress and DNA damage that is accompanied by changes in proliferation-related miRNA expression. *Redox Biol.* 14: 20-34.
- Hao, J., et al. 2018. Circulating adipose fatty acid binding protein is a new link underlying obesity-associated breast/mammary tumor development. *Cell Metab.* 28: 689-705.e5.
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- Ravichandran, M., et al. 2019. Rinf regulates pluripotency network genes and Tet enzymes in embryonic stem cells. *Cell Rep.* 28: 1993-2003.e5.
- Fang, W., et al. 2019. Protective effects of trimetazidine in retarding selenite-induced lens opacification. *Curr. Eye Res.* 44: 1325-1336.
- Starlard-Davenport, A., et al. 2019. MIR29B mediates epigenetic mechanisms of HBG gene activation. *Br. J. Haematol.* 186: 91-100.
- Jiang, Z., et al. 2020. Oxidative DNA damage modulates DNA methylation pattern in human breast cancer 1 (BRCA1) gene via the crosstalk between DNA polymerase β and a *de novo* DNA methyltransferase. *Cells* 9: 225.

## RESEARCH USE

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

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