

# Dnmt1 (C-17): sc-10222

## 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: DNMT1 (human) mapping to 19p13.2; Dnmt1 (mouse) mapping to 9 A3.

## SOURCE

Dnmt1 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Dnmt1 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-10222 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Dnmt1 (C-17) is recommended for detection of Dnmt1 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).

Dnmt1 (C-17) is also recommended for detection of Dnmt1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Dnmt1 siRNA (h): sc-35204, Dnmt1 siRNA (m): sc-35203, Dnmt1 shRNA Plasmid (h): sc-35204-SH, Dnmt1 shRNA Plasmid (m): sc-35203-SH, Dnmt1 shRNA (h) Lentiviral Particles: sc-35204-V and Dnmt1 shRNA (m) Lentiviral Particles: sc-35203-V.

Molecular Weight of Dnmt1: 184 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A549 cell lysate: sc-2413 or F9 cell lysate: sc-2245.

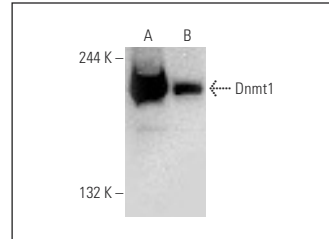
## RESEARCH USE

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

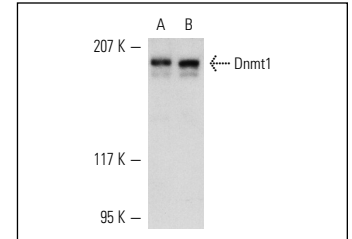
## STORAGE

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

## DATA



Dnmt1 (C-17): sc-10222. Western blot analysis of Dnmt1 expression in untreated (A) and Zebularine (sc-203315) treated (B) HeLa whole cell lysates. Note down regulation of Dnmt1 expression in lane B.



Dnmt1 (C-17): sc-10222. Western blot analysis of Dnmt1 expression in HeLa (A) and A549 (B) 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.
- 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.
- Musch, T., et al. 2010. Nucleoside drugs induce cellular differentiation by caspase-dependent degradation of stem cell factors. *PLoS ONE* 5: e10726.
- Cowin, P.A., et al. 2010. Vinclozolin exposure in utero induces postpubertal prostatitis and reduces sperm production via a reversible hormone-regulated mechanism. *Endocrinology* 151: 783-792.
- Paluszczak, J., et al. 2011. Frequent gene hypermethylation in laryngeal cancer cell lines and the resistance to demethylation induction by plant polyphenols. *Toxicol. In Vitro* 25: 213-221.
- Wang, Z., et al. 2011. Hypoxia-induced down-regulation of neprilysin by histone modification in mouse primary cortical and hippocampal neurons. *PLoS ONE* 6: e19229.
- Barboni, B., et al. 2011. *In vitro* grown sheep preantral follicles yield oocytes with normal nuclear-epigenetic maturation. *PLoS ONE* 6: e27550.
- Ptak, G.E., et al. 2013. Post-implantation mortality of *in vitro* produced embryos is associated with DNA methyltransferase 1 dysfunction in sheep placenta. *Hum. Reprod.* 28: 298-305.


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Try **Dnmt1 (H-12): sc-271729** or **Dnmt1 (D-9): sc-514784**, our highly recommended monoclonal alternatives to Dnmt1 (C-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Dnmt1 (H-12): sc-271729**.