

# Dnmt1 (N-16): sc-10219

## 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.

## SOURCE

Dnmt1 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-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-10219 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Dnmt1 (N-16) is recommended for detection of Dnmt1 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 Dnmt1 siRNA (h): sc-35204, Dnmt1 shRNA Plasmid (h): sc-35204-SH and Dnmt1 shRNA (h) Lentiviral Particles: sc-35204-V.

Molecular Weight of Dnmt1: 184 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, T24 cell lysate: sc-2292 or HeLa nuclear extract: sc-2120.

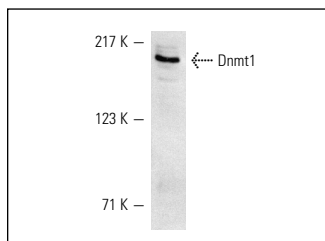
## STORAGE

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.

## DATA



Dnmt1 (N-16): sc-10219. Western blot analysis of Dnmt1 expression in HeLa whole cell lysate.

## SELECT PRODUCT CITATIONS

- Craig, J.M., et al. 2003. Analysis of mammalian proteins involved in chromatin modification reveals new metaphase centromeric proteins and distinct chromosomal distribution patterns. *Hum. Mol. Genet.* 12: 3109-3121.
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- Ye, W., et al. 2011. Zeranol down-regulates p53 expression in primary cultured human breast cancer epithelial cells through epigenetic modification. *Int. J. Mol. Sci.* 12: 1519-1532.
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- Rahman, W.F., et al. 2015. Overexpression of DNA methyltransferase 1 (DNMT1) protein in astrocytic tumour and its correlation with O6-methylguanine-DNA methyltransferase (MGMT) expression. *Int. J. Clin. Exp. Pathol.* 8: 6095-6106.


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