SANTA CRUZ BIOTECHNOLOGY, INC.

Dnmt2 (H-271): sc-20702

SANTA CRUZ BIOTECHNOLOGY

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: TRDMT1 (human) mapping to 10p13; Trdmt1 (mouse) mapping to 2 A1.

SOURCE

Dnmt2 (H-271) is a rabbit polyclonal antibody raised against amino acids 121-391 of Dnmt2 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

Dnmt2 (H-271) is recommended for detection of Dnmt2 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Dnmt2 (H-271) is also recommended for detection of Dnmt2 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for Dnmt2 siRNA (h): sc-35205, Dnmt2 siRNA (m): sc-35206, Dnmt2 shRNA Plasmid (h): sc-35205-SH, Dnmt2 shRNA Plasmid (m): sc-35206-SH, Dnmt2 shRNA (h) Lentiviral Particles: sc-35205-V and Dnmt2 shRNA (m) Lentiviral Particles: sc-35206-V.

Molecular Weight of Dnmt2: 45 kDa.

Positive Controls: Dnmt2 (h): 293T Lysate: sc-116114.

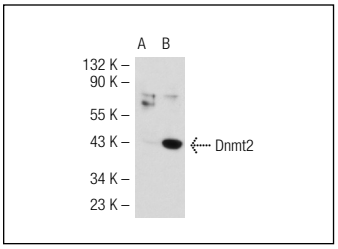
STORAGE

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

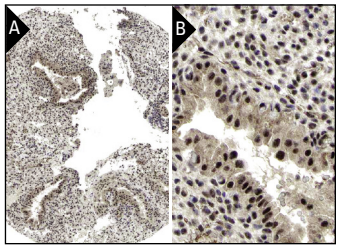
RESEARCH USE

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

DATA



Dnmt2 (H-271): sc-20702. Western blot analysis of Dnmt2 expression in non-transfected: sc-117752 (**A**) and human Dnmt2 transfected: sc-116114 (**B**) 293T whole cell lysates.



Dnmt2 (H-271): sc-20702. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of decidual and trophoblastic cells at low (**A**) and high magnification (**B**). Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Gallais, R., et al. 2007. Deoxyribonucleic acid methyl transferases 3a and 3b associate with the nuclear orphan receptor COUP-TFI during gene activation. Mol. Endocrinol. 21: 2085-2098.
2. Métivier, R., et al. 2008. Cyclical DNA methylation of a transcriptionally active promoter. Nature 452: 45-50.
3. Schaefer, M., et al. 2009. Azacytidine inhibits RNA methylation at DNMT2 target sites in human cancer cell lines. Cancer Res. 69: 8127-8132.
4. Thiagarajan, D., et al. 2011. The DNA methyltranferase Dnmt2 participates in RNA processing during cellular stress. Epigenetics 6: 103-113.
5. Bonnin, N., et al. 2014. DNA methyl transferases are differentially expressed in the human anterior eye segment. Acta Ophthalmol. E-published.

PROTOCOLS

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