SANTA CRUZ BIOTECHNOLOGY, INC.

Dnmt3a (D-15): sc-10232

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: DNMT3A (human) mapping to 2p23.3; Dnmt3a (mouse) mapping to 12 A1.1.

SOURCE

Dnmt3a (D-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Dnmt3a 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-10232 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Dnmt3a (D-15) is recommended for detection of Dnmt3a 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).

Dnmt3a (D-15) is also recommended for detection of Dnmt3a in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Dnmt3a siRNA (h): sc-37757, Dnmt3a siRNA (m): sc-37758, Dnmt3a shRNA Plasmid (h): sc-37757-SH, Dnmt3a shRNA Plasmid (m): sc-37758-SH, Dnmt3a shRNA (h) Lentiviral Particles: sc-37757-V and Dnmt3a shRNA (m) Lentiviral Particles: sc-37758-V.

Molecular Weight of Dnmt3a: 100-130 kDa.

Positive Controls: Dnmt3a (h): 293T Lysate: sc-115950.

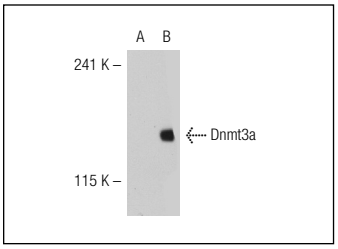
STORAGE

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



Dnmt3a (D-15): sc-10232. Western blot analysis of Dnmt3a expression in non-transfected: sc-117752 (**A**) and human Dnmt3a transfected: sc-115950 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kubarek, L., et al. 2007. Epigenetic upregulation of CXCR-4 and CXCL12 expression by 17 β-estradiol and tamoxifen is associated with formation of DNA methyltransferase 3B4 splice variant in Ishikawa endometrial adenocarcinoma cells. FEBS Lett. 581: 1441-1448.
2. 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.
3. Huang, L., et al. 2011. Prevention of transcriptional silencing by a replicator-binding complex consisting of SWI/SNF, MeCP1, and hnRNP C1/C2. Mol. Cell. Biol. 31: 3472-3484.
4. Gravina, G.L., et al. 2011. Hormonal therapy promotes hormone-resistant phenotype by increasing DNMT activity and expression in prostate cancer models. Endocrinology 152: 4550-4561.
5. Kim, J.W., et al. 2011. Replicative activity of hepatitis B virus is negatively associated with methylation of covalently closed circular DNA in advanced hepatitis B virus infection. Intervirology 54: 316-325.

PROTOCOLS

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

MONOS Satisfaction Guaranteed

Try **Dnmt3a (C-12): sc-365769** or **Dnmt3a (A-10): sc-373905**, our highly recommended monoclonal alternatives to Dnmt3a (D-15). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Dnmt3a (C-12): sc-365769**.