

# Dnmt3a (H-295): sc-20703

## 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 2p23.2; Dnmt3a (mouse) mapping to 12 A1.1.

## SOURCE

Dnmt3a (H-295) is a rabbit polyclonal antibody raised against amino acids 1-295 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.

## APPLICATIONS

Dnmt3a (H-295) 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), 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).

Dnmt3a (H-295) is also recommended for detection of Dnmt3a in additional species, including equine and canine.

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: MIA PaCa-2 cell lysate: sc-2285 or mouse testis extract: sc-2405.

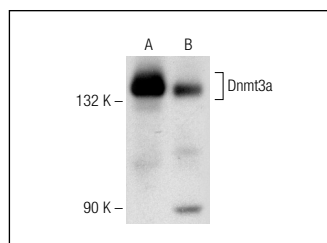
## STORAGE

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

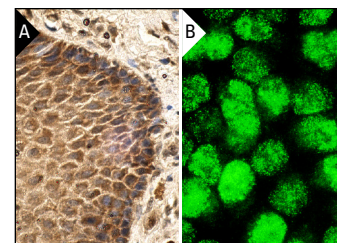
## RESEARCH USE

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

## DATA



Dnmt3a (H-295): sc-20703. Western blot analysis of Dnmt3a expression in MIA PaCa-2 whole cell lysate (A) and mouse testis tissue extract (B).



Dnmt3a (H-295): sc-20703. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervix tissue showing nuclear and cytoplasmic staining of squamous epithelial cells (A). Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (B).

## SELECT PRODUCT CITATIONS

- Lin, C.H., et al. 2001. Genome-wide hypomethylation in hepatocellular carcinogenesis. *Cancer Res.* 61: 4238-4243.
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- Kolodkin, M.H. and Auger, A.P. 2011. Sex difference in the expression of DNA methyltransferase 3a in the rat amygdala during development. *J. Neuroendocrinol.* 23: 577-583.
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- Karius, T., et al. 2011. Reversible epigenetic fingerprint-mediated glutathione-S-transferase P1 gene silencing in human leukemia cell lines. *Biochem. Pharmacol.* 81: 1329-1342.
- Zhu, Q., et al. 2012. Increased expression of DNA methyltransferase 1 and 3a in human temporal lobe epilepsy. *J. Mol. Neurosci.* 46: 420-426.
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Try **Dnmt3a (C-12): sc-365769** or **Dnmt3a (A-10): sc-373905**, our highly recommended monoclonal alternatives to Dnmt3a (H-295). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Dnmt3a (C-12): sc-365769**.