SANTA CRUZ BIOTECHNOLOGY, INC.

MBD3 (C-18): sc-9402

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Methylation of DNA contributes to the regulation of gene transcription in both mammalian and invertebrate systems. DNA methylation predominates on cytosine residues that are present in dinucleotide motifs consisting of a 5' cytosine followed by guanosine (CpG), and it requires the enzymatic activity of DNA methyltransferase, which results in transcriptional repression of the methylated gene. Several proteins have been identified that associate with the methyl-CpG sites; they include methyl-CpG binding protein 1 (MBD1), MBD2, MBD3, MBD4 and MeCP2. Expression of the MBD proteins is highest in somatic tissues. MBD1 binds in a context specific manner to methyl-CpG rich domains and, in turn, mediates the transcriptional inhibition that is commonly observed with DNA methylation. Similarly, MBD2 inhibits transcription of methylated genes by associating with histone deacetylase (HDAC1) within the MeCP1 repressor complex. In addition, MBD4, which is also designated MED1, associates with the mismatch repair protein MLH1 and preferentially binds to methylated cytosine residues in mismatched base pairs. MeCP2 binds tightly to chromosomes in a methylation-dependent manner and associates with a corepressor complex containing the transcriptional repressor mSin3A and histone deacetylases. MeCP2 binds tightly to chromosomes in a methylation-dependent manner and associates with a corepressor complex containing the transcriptional repressor mSin3A and histone deacetylases.

CHROMOSOMAL LOCATION

Genetic locus: MBD3 (human) mapping to 19p13.3; Mbd3 (mouse) mapping to 10 C1.

SOURCE

MBD3 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MBD3 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-9402 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MBD3 (C-18) is recommended for detection of MBD3 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).

MBD3 (C-18) is also recommended for detection of MBD3 in additional species, including equine, canine, bovine and porcine.

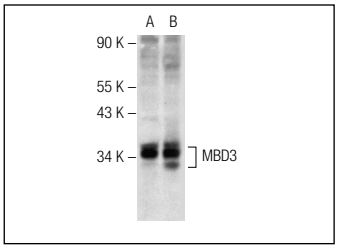
Suitable for use as control antibody for MBD3 siRNA (h): sc-35867, MBD3 siRNA (m): sc-35868, MBD3 shRNA Plasmid (h): sc-35867-SH, MBD3 shRNA Plasmid (m): sc-35868-SH, MBD3 shRNA (h) Lentiviral Particles: sc-35867-V and MBD3 shRNA (m) Lentiviral Particles: sc-35868-V.

Molecular Weight of MBD3: 34 kDa.

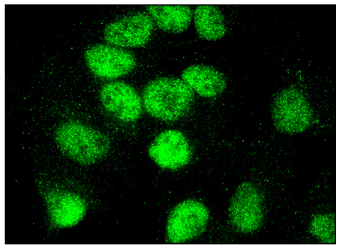
STORAGE

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

DATA



MBD3 (C-18): sc-9402. Western blot analysis of MBD3 expression in HeLa (**A**) and Jurkat (**B**) nuclear extracts.



MBD3 (C-18): sc-9402. Immunofluorescence staining of formalin-fixed HepG2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Zegerman, P., et al. 2002. Histone H3 lysine 4 methylation disrupts binding of nucleosome remodeling and deacetylase (NuRD) repressor complex. J. Biol. Chem. 277: 11621-11624.
2. Yang, Z., et al. 2010. AOF1 is a histone H3K4 demethylase possessing demethylase activity-independent repression function. Cell Res. 20: 276-287.
3. Xu, J., et al. 2010. Transcriptional silencing of γ-globin by BCL11A involves long-range interactions and cooperation with SOX6. Genes Dev. 24: 783-798.
4. Cui, S., et al. 2011. Nuclear receptors TR2 and TR4 recruit multiple epigenetic transcriptional corepressors that associate specifically with the embryonic β-type globin promoters in differentiated adult erythroid cells. Mol. Cell. Biol. 31: 3298-3311.
5. Sims, J.K. and Wade, P.A. 2011. Mi-2/NuRD complex function is required for normal S phase progression and assembly of pericentric heterochromatin. Mol. Biol. Cell 22: 3094-3102.
6. Aguilera, C., et al. 2011. c-Jun N-terminal phosphorylation antagonises recruitment of the Mbd3/NuRD repressor complex. Nature 469: 231-235.
7. 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.

RESEARCH USE

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