

MBD1 (100B272.1): sc-52901

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 guanine (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 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.

REFERENCES

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- Hendrich, B., Abbott, C., McQueen, H., Chambers, D., Cross, S. and Bird, A. 1999. Genomic structure and chromosomal mapping of the murine and human MBD1, MBD2, MBD3, and MBD4 genes. *Mamm. Genome* 10: 906-912.
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- Ng, H.H., Zhang, Y., Hendrich, B., Johnson, C.A., Turner, B.M., Erdjument-Bromage, H., Tempst, P., Reinberg, D. and Bird, A. 1999. MBD2 is a transcriptional repressor belonging to the MeCP1 histone deacetylase complex. *Nat. Genet.* 23: 58-61.

CHROMOSOMAL LOCATION

Genetic locus: MBD1 (human) mapping to 18q21; Mbd1 (mouse) mapping to 18 E2.

SOURCE

MBD1 (100B272.1) is a mouse monoclonal antibody raised against synthetic MBD1 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

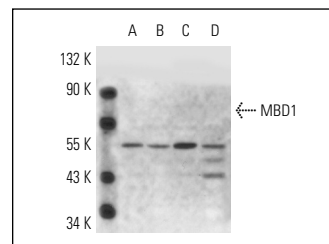
MBD1 (100B272.1) is recommended for detection of MBD1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for MBD1 siRNA (h): sc-35863, MBD1 shRNA Plasmid (h): sc-35863-SH and MBD1 shRNA (h) Lentiviral Particles: sc-35863-V.

Molecular Weight of MBD1: 80 kDa.

Positive Controls: A-431 nuclear extract: sc-2122.

DATA



MBD1 (100B272.1): sc-52901. Western blot analysis of MBD1 expression in Jurkat whole cell lysate (A) and Hep G2 (B), MEG-01 (C) and U-937 (D) nuclear extracts.

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.

PROTOCOLS

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