SANTA CRUZ BIOTECHNOLOGY, INC.

MBD4 (m): 293T Lysate: sc-121541

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 and 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.

REFERENCES

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4. 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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CHROMOSOMAL LOCATION

Genetic locus: Mbd4 (mouse) mapping to 6 E3.

PRODUCT

MBD4 (m): 293T Lysate represents a lysate of mouse MBD4 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

MBD4 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive MBD4 antibodies. Recommended use: 10-20 µl per lane.

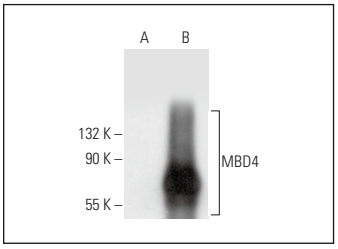
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

MBD4 (A-8): sc-365974 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse MBD4 expression in MBD4 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

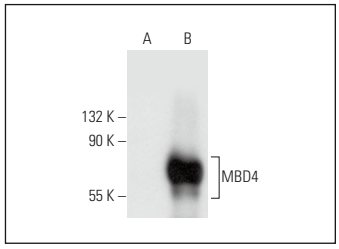
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



MBD4 (A-8): sc-365974. Western blot analysis of MBD4 expression in non-transfected: sc-117752 (**A**) and mouse MBD4 transfected: sc-121541 (**B**) 293T whole cell lysates.



MBD4 (G-7): sc-398249. Western blot analysis of MBD4 expression in non-transfected: sc-117752 (**A**) and mouse MBD4 transfected: sc-121541 (**B**) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.