

Product datasheet for **TA336395**

MBD1 Mouse Monoclonal Antibody [Clone ID: 100B272.1]

Product data:

Product Type:	Primary Antibodies
Clone Name:	100B272.1
Applications:	ChIP, ICC/IF, IHC, IP, WB
Recommended Dilution:	Knockdown Validated, Chromatin Immunoprecipitation (ChIP): 1:10-1:500, Western Blot: 2-4 ug/ml, Chromatin Immunoprecipitation: 1:10-1:500, Immunoprecipitation: 1:10-1:500, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry: 1:200, Immunohistochemistry-Paraffin: 1:200
Reactivity:	Human
Host:	Mouse
Isotype:	IgG1
Clonality:	Monoclonal
Immunogen:	This antibody was generated by immunizing mice with a synthetic peptide corresponding to amino acids 391-405 (SESEDGAGSPPPYRR) of human MBD1; GenBank no ref NP_056671.2
Formulation:	PBS containing 0.05% BSA, 0.05% Sodium Azide. Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Concentration:	lot specific
Purification:	Protein G purified
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	methyl-CpG binding domain protein 1
Database Link:	NP_056669 Entrez Gene 4152 Human Q9UIS9



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Background:

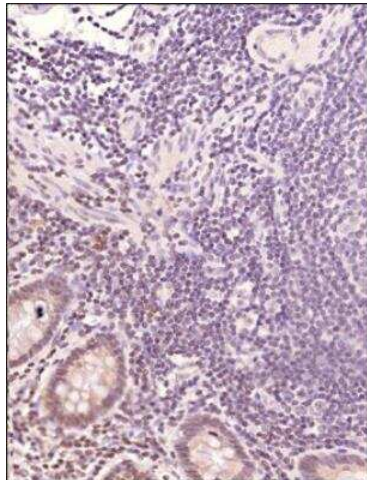
DNA methylation, or the addition of methyl groups to cytosine bases in the dinucleotide CpG, is imperative to proper development and regulates gene expression. The methylation pattern involves the enzymatic processes of methylation and demethylation. The demethylation enzyme was recently found to be a mammalian protein, which exhibits demethylase activity associated to a methyl-CpG-binding domain (MBD). The enzyme is able to revert methylated cytosine bases to cytosines within the particular dinucleotide sequence mdCpG by catalyzing the cleaving of the methyl group as methanol. MeCP2 and MBD1 (PCM1) are first found to repress transcription by binding specifically to methylated DNA. MBD2 and MBD4 (also known as MED1) were later found to colocalize with foci of heavily methylated satellite DNA and believed to mediate the biological functions of the methylation signal. Surprisingly, MBD3 does not bind methylated DNA both in vivo and in vitro. MBD1, MBD2, MBD3, and MBD4 are found to be expressed in somatic tissues, but the expression of MBD1 and MBD2 is reduced or absent in embryonic stem cells, which are known to be deficient in MeCP1 activity. MBD4 have homology to bacterial base excision repair DNA N-glycosylases/lyases. In some microsatellite unstable tumors MBD4 is mutated at an exonic polynucleotide tract.

Synonyms:

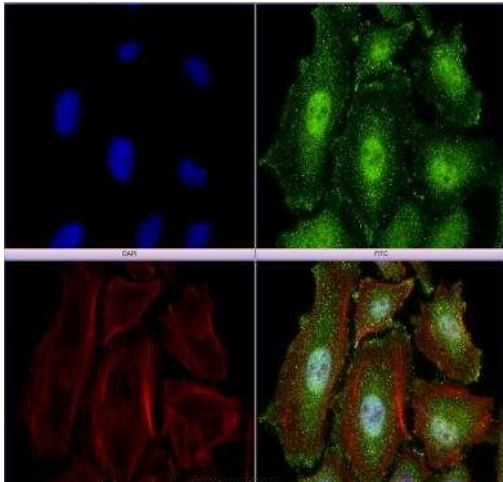
CXXC3; PCM1; RFT

Protein Families:

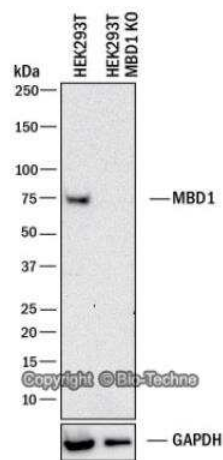
Druggable Genome, Transcription Factors

Product images:

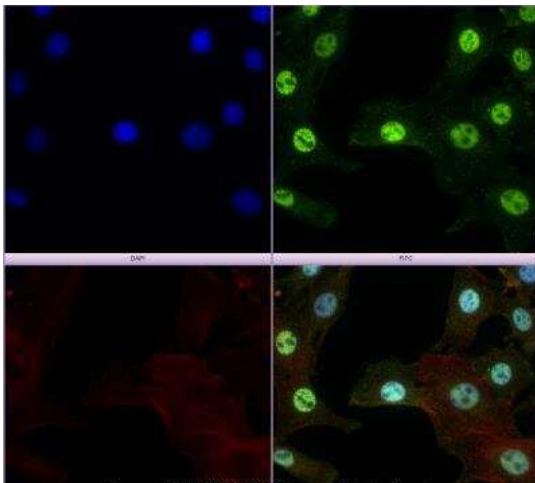
Immunohistochemistry-Paraffin: MBD1 Antibody (100B272.1) TA336395 - Analysis of a FFPE tissue section of human colon using 1:200 dilution of MBD1 (100B272.1) antibody. The staining was developed using HRP labeled anti-mouse secondary antibody and DAB reagent, and nuclei of cells were counter-stained with hematoxylin. Cytoplasmic and nuclear staining was observed.



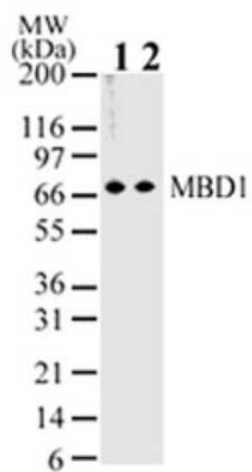
Immunocytochemistry/Immunofluorescence: MBD1 Antibody (100B272.1) TA336395 - HeLa cells were fixed for 10 minutes using 4% PFA and then permeabilized for 5 minutes using 1X PBS + 0.5% Triton-X100. The cells were incubated with anti-MBD1 (100B272.1) at 2 ug/ml overnight at 4C and detected with an anti-mouse Dylight 488 (Green) at a 1:500 dilution. Actin was detected with Phalloidin 568 (Red) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.



Knockdown Validated: MBD1 Antibody (100B272.1) TA336395 - blot shows lysates of HEK293T human embryonic kidney parental cell line and MBD1 knockout (KO) HEK293T cell line. PVDF membrane was probed with 2.0 ug/ml of Mouse Anti-Human MBD1 Monoclonal Antibody (Catalog # TA336395) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog #HAF018). Specific band was detected for MBD1 at approximately 60 kDa (as indicated) in the parental HEK293T cell line, but is not detectable in the knockout HEK293T cell line. This experiment was conducted under reducing conditions.



Immunocytochemistry/Immunofluorescence: MBD1 Antibody (100B272.1) TA336395 - NIH3T3 cells were fixed for 10 minutes using 4% PFA and then permeabilized for 5 minutes using 1X PBS + 0.5% Triton-X100. The cells were incubated with anti-MBD1 (100B272.1) at 2 ug/ml overnight at 4C and detected with an anti-mouse Dylight 488 (Green) at a 1:500 dilution. Actin was detected with Phalloidin 568 (Red) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.



Western Blot: MBD1 Antibody (100B272.1)
TA336395 - Analysis of MBD1 in HeLa lysate using
MBD1 antibody at 2 ug/ml (lane 1) and 1 ug/ml
(lane 2).