

# MBD3 (F-11): sc-166319

## 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, 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 methyl-ation-dependent manner and associates with a corepressor complex containing the transcriptional repressor mSin3A and histone deacetylases.

## REFERENCES

- Boyes, J. and Bird, A. 1991. DNA methylation inhibits transcription indirectly via a methyl-CpG binding protein. *Cell* 64: 1123-1134.
- Nan, X., et al. 1998. Transcriptional repression by the methyl-CpG-binding protein MeCP2 involves a histone deacetylase complex. *Nature* 393: 386-389.

## CHROMOSOMAL LOCATION

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

## SOURCE

MBD3 (F-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 234-267 near the C-terminus of MBD3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MBD3 (F-11) is available conjugated to agarose (sc-166319 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166319 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166319 PE), fluorescein (sc-166319 FITC), Alexa Fluor® 488 (sc-166319 AF488), Alexa Fluor® 546 (sc-166319 AF546), Alexa Fluor® 594 (sc-166319 AF594) or Alexa Fluor® 647 (sc-166319 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166319 AF680) or Alexa Fluor® 790 (sc-166319 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166319 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

MBD3 (F-11) is recommended for detection of MBD3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 (F-11) is also recommended for detection of MBD3 in additional species, including 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.

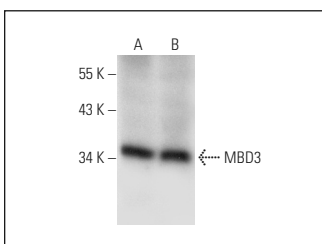
Molecular Weight of MBD3: 34 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

## 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



MBD3 (F-11): sc-166319. Western blot analysis of MBD3 expression in HeLa (A) and Jurkat (B) whole cell lysates.

## 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.

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