

MBD1 Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP1036a**Specification**

MBD1 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession [O9UIS9](#)
Other Accession [Y10746](#)

MBD1 Antibody (N-term) Blocking Peptide - Additional Information

Gene ID 4152

Other Names

Methyl-CpG-binding domain protein 1, CXXC-type zinc finger protein 3, Methyl-CpG-binding protein MBD1, Protein containing methyl-CpG-binding domain 1, MBD1, CXXC3, PCM1

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

MBD1 Antibody (N-term) Blocking Peptide - Protein Information

Name MBD1 ([HGNC:6916](#))

Synonyms CXXC3, PCM1

Function

Transcriptional repressor that binds CpG islands in promoters where the DNA is methylated at position 5 of cytosine within CpG dinucleotides. Binding is abolished by the presence of 7-mG that is produced by DNA damage by methylmethanesulfonate (MMS). Acts as transcriptional repressor and plays a role in gene silencing by recruiting ATF7IP, which in turn recruits factors such as the histone methyltransferase SETDB1. Probably forms a complex with SETDB1 and ATF7IP that represses transcription and couples DNA methylation and histone 'Lys-9' trimethylation. Isoform 1 and isoform 2 can also repress transcription from unmethylated promoters.

Cellular Location

Nucleus. Nucleus matrix. Nucleus speckle Chromosome Note=Nuclear, in a punctate pattern (PubMed:12711603). Associated with euchromatic regions of the chromosomes, with pericentromeric regions on chromosome 1 and with telomeric regions from several chromosomes (PubMed:10648624, PubMed:10454587).

Tissue Location

Widely expressed..

MBD1 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

MBD1 Antibody (N-term) Blocking Peptide - Images**MBD1 Antibody (N-term) Blocking Peptide - 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) (1). The enzyme is able to revert methylated cytosine bases to cytosines within the particular dinucleotide sequence mCpG 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 (2). 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 (3). In some microsatellite unstable tumors MBD4 is mutated at an exonic polynucleotide tract (4).

MBD1 Antibody (N-term) Blocking Peptide - References

Bhattacharya SK, Ramchandani S, Cervoni N, Szyf. M. Nature, 397 (6720):579-583 1999. Hendrich B and Bird A. Mol Cell Biol, 18: 6538-6547(1998). Petronzelli F, Riccio A, Markham GD, Seeholzer SH, Stoerker J, Genuardi M, Yeung AT, Matsumoto Y, Bellacosa A. J Biol Chem 275 (42): 32422-32429 (2000). Bader S, Walker M, Harrison D. Br J Cancer 83(12): 1646-1649 (2000).