10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MBD1 Rabbit pAb

Catalog # AP99011

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q9UIS9
Other Accession	Q9UIS9
Reactivity	Rat, Human
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	66607
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human MBD1
Epitope Specificity	101-200/605
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Contains 3 CXXC-type zinc fingers.Contains 1 MBD (methyl-CpG-binding) domain.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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 mdCpdG 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.

Additional Information

Gene ID	4152
Other Names	CXXC3; PCM1; RFT; MBD1_HUMAN; MBD1; CXXC-type zinc finger protein 3;

	Methyl-CpG-binding protein MBD1; Protein containing methyl-CpG-binding domain 1; methyl-CpG binding domain protein 1; protein containing MBD 1
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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:10454587, PubMed:10648624).
Tissue Location	Widely expressed..

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.