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Mouse Monoclonal Antibody to DNMT1

Purified Mouse Monoclonal Antibody
Catalog # AO2326a

Product Information

Application	WB, E
Primary Accession	P26358
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	1D5G2
Isotype	Mouse IgG1
Calculated MW	183165
Description	DNA (cytosine-5-)-methyltransferase 1 has a role in the establishment and regulation of tissue-specific patterns of methylated cytosine residues. Aberrant methylation patterns are associated with certain human tumors and developmental abnormalities. Two transcript variants encoding different isoforms have been found for this gene.;
Immunogen	Purified recombinant fragment of human DNMT1 (AA: 1317-1616) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide
Application Note	ELISA: 1/10000; WB: 1/500 - 1/2000;

Additional Information

Gene ID	1786
Other Names	AIM; DNMT; MCMT; CXXC9; HSN1E; ADCADN
Dilution	WB~~1:1000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Monoclonal Antibody to DNMT1 is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

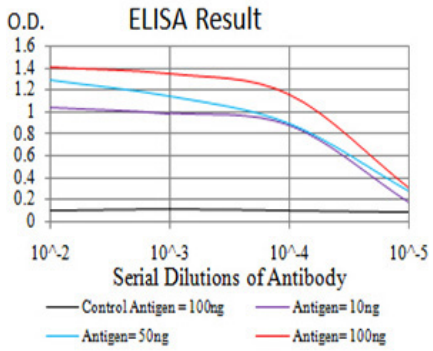
Name	DNMT1
Synonyms	AIM, CXXC9, DNMT

Function	Methylates CpG residues. Preferentially methylates hemimethylated DNA. Associates with DNA replication sites in S phase maintaining the methylation pattern in the newly synthesized strand, that is essential for epigenetic inheritance. Associates with chromatin during G2 and M phases to maintain DNA methylation independently of replication. It is responsible for maintaining methylation patterns established in development. DNA methylation is coordinated with methylation of histones. Mediates transcriptional repression by direct binding to HDAC2. In association with DNMT3B and via the recruitment of CTCFL/BORIS, involved in activation of BAG1 gene expression by modulating dimethylation of promoter histone H3 at H3K4 and H3K9. Probably forms a corepressor complex required for activated KRAS- mediated promoter hypermethylation and transcriptional silencing of tumor suppressor genes (TSGs) or other tumor-related genes in colorectal cancer (CRC) cells (PubMed:24623306). Also required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs) (PubMed:24623306). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing (PubMed:24623306). Promotes tumor growth (PubMed:24623306).
Cellular Location	Nucleus. Note=Localized to the perinucleolar region.
Tissue Location	Ubiquitous; highly expressed in fetal tissues, heart, kidney, placenta, peripheral blood mononuclear cells, and expressed at lower levels in spleen, lung, brain, small intestine, colon, liver, and skeletal muscle. Isoform 2 is less expressed than isoform 1.

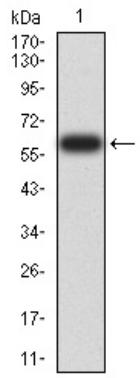
References

1.J Biol Chem. 2013 Jul 5;288(27):19673-84. ; 2.Int J Oncol. 2013 Jul;43(1):228-36.;

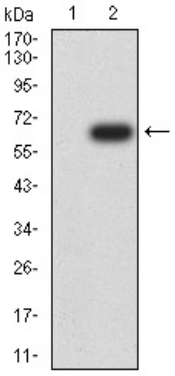
Images



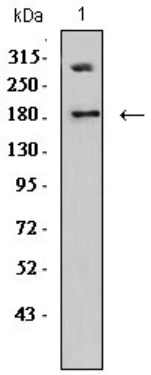
Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)



Western blot analysis using DNMT1 mAb against human DNMT1 (AA: 1317-1616) recombinant protein. (Expected MW is 59.3 kDa)



Western blot analysis using DNMT1 mAb against HEK293 (1) and DNMT1 (AA: 1317-1616)-hIgGFc transfected HEK293 (2) cell lysate.



Western blot analysis using DNMT1 mouse mAb against Jurkat (1) cell lysate.