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Anti-DNMT / DNMT1 Antibody (aa637-650, clone 60B1220.1)

Mouse Anti Human Monoclonal Antibody
Catalog # ALS17587

Product Information

Application	WB, IHC-P, IP, CHIP
Primary Accession	P26358
Predicted	Human, Mouse, Rabbit, Monkey, Horse
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	60B1220.1
Calculated MW	183165
Concentration (mg/ml)	1 mg/ml

Additional Information

Gene ID	1786
Alias Symbol	DNMT1
Other Names	DNMT1, AIM, CXXC finger protein 9, CXXC9, DNA methyltransferase 1, DNMT, DNA methyltransferase HsaI, DNA MTase HsaI, HSN1E, M.HsaI, MCMT
Target/Specificity	A synthetic peptide corresponding to amino acids 637-650 (EKDDREDKENAFKR) of human Dnmt1 (Genbank Accession No. NP_001370). It will cross react with mouse Dnmt1.
Reconstitution & Storage	Protein G purified
Precautions	Anti-DNMT / DNMT1 Antibody (aa637-650, clone 60B1220.1) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DNMT1 {ECO:0000303|Ref.3, ECO:0000312|HGNC:HGNC:2976}
Function	DNA methyltransferase that methylates CpG residues (PubMed: 17200670, PubMed:18754681, PubMed:21745816, PubMed:26070743). Preferentially methylates hemimethylated DNA (PubMed:21745816, PubMed:26070743). Associates with DNA replication sites in S phase maintaining the methylation pattern in the newly synthesized strand, that is essential for epigenetic inheritance (PubMed:17200670, PubMed:21745816). Associates with chromatin during G2 and M phases to maintain DNA methylation independently of replication (PubMed:21745816). It is responsible for

maintaining methylation patterns established in development (PubMed:21745816). DNA methylation is coordinated with methylation of histones (PubMed:16357870). Mediates transcriptional repression by direct binding to HDAC2 (PubMed:10888872). 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 (PubMed:18413740). 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).

Cellular Location

Nucleus. Chromosome Note=Associates with replication foci during S-phase: recruited to hemimethylated DNA sites via its RFTS domain, which specifically recognizes and binds histone H3 ubiquitinated at 'Lys-14', 'Lys-18' and 'Lys-23' (H3K14ub, H3K18ub and H3K23ub, respectively) (PubMed:29053958). Localized to the perinucleolar region (PubMed:24492612).

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.

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