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KD-Validated Anti-DNA Methyltransferase 1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1798

Product Information

Application	WB, FC, ICC
Primary Accession	P26358
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	24GB5135
Calculated MW	183165
Gene Name	DNMT1
Aliases	DNMT1; DNA Methyltransferase 1; CXXC9; MCMT; DNMT; DNA (Cytosine-5-)-Methyltransferase 1; DNA (Cytosine-5)-Methyltransferase 1; CXXC-Type Zinc Finger Protein 9; DNA Methyltransferase HsaI; DNA MTase HsaI; EC 2.1.1.37; M.HsaI; AIM; ADCADN; HSN1E; Dnmt1
Immunogen	A synthesized peptide derived from human Dnmt1

Additional Information

Gene ID	1786
Other Names	DNA (cytosine-5)-methyltransferase 1, Dnmt1, 2.1.1.37, CXXC-type zinc finger protein 9, DNA methyltransferase HsaI, DNA MTase HsaI, M.HsaI, MCMT, DNMT1, AIM, CXXC9, DNMT

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.

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