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Anti-Dnmt1 Rabbit Monoclonal Antibody

Catalog # ABO13740

Product Information

Application	WB, IHC, IF, ICC
Primary Accession	P26358
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Liquid
Description	Anti-Dnmt1 Rabbit Monoclonal Antibody . Tested in WB, IHC, ICC/IF applications. This antibody reacts with Human, Mouse, Rat.

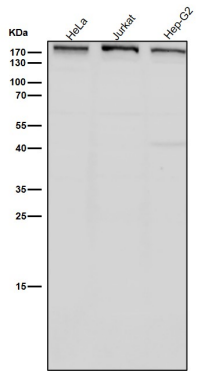
Additional Information

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
Calculated MW	183165
Application Details	WB 1:500-1:2000 IHC 1:50-1:200 ICC/IF 1:50-1:200
Subcellular Localization	Nucleus.
Tissue Specificity	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..
Source	Eukaryota
Contents	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
Clone Names	Clone: AODB-4
Immunogen	A synthesized peptide derived from human Dnmt1
Purification	Affinity-chromatography
Storage	Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Protein Information

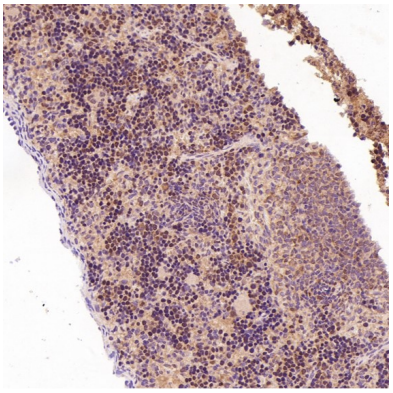
Name	DNMT1 {ECO:0000303|Ref.3, ECO:0000312|HGNC:HGNC:2976}
Function	DNA methyltransferase that methylates CpG residues (PubMed: 17200670, PubMed:18754681, PubMed:21745816, PubMed:26070743). Preferentially methylates hemimethylated DNA (PubMed:21745816, PubMed:26070743). Associates with DNA replication 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.

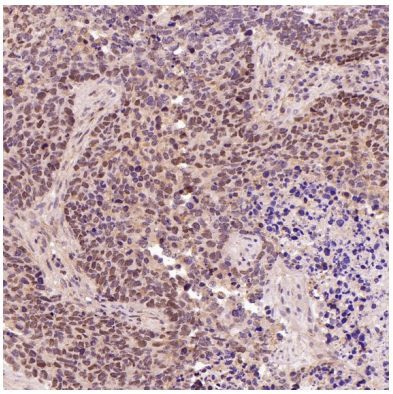
Images



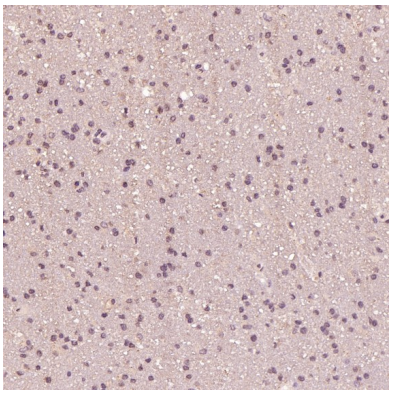
All lanes use the Antibody at 1:3K dilution for 1 hour at room temperature.

Immunohistochemical analysis of paraffin-embedded Rat spleen, using the Antibody at 1:100 dilution.

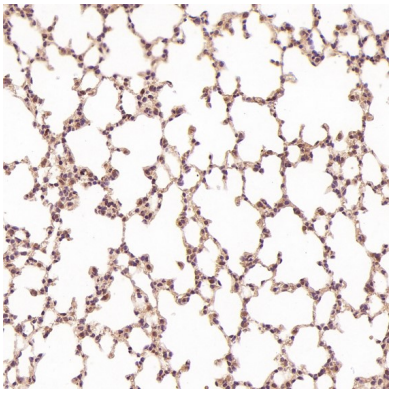




Immunohistochemical analysis of paraffin-embedded Human lung large cell cancer, using the Antibody at 1:100 dilution.

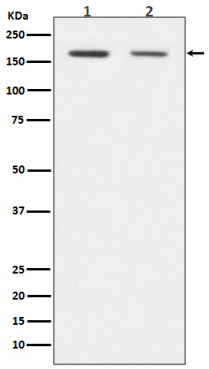


Immunohistochemical analysis of paraffin-embedded Human glioblastoma, using the Antibody at 1:100 dilution.



Immunohistochemical analysis of paraffin-embedded Mouse lung, using the Antibody at 1:100 dilution.

Western blot analysis of Dnmt1 expression in (1) HEK293 cell lysate; (2) NIH/3T3 cell lysate.



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