

DNMT / DNMT1 Antibody (Internal)
Goat Polyclonal Antibody
Catalog # ALS13338**Specification**

DNMT / DNMT1 Antibody (Internal) - Product Information

Application	WB, IHC-P, E
Primary Accession	P26358
Reactivity	Human, Mouse, Rat, Rabbit, Monkey, Pig, Sheep, Horse, Bovine, Dog
Host	Goat
Clonality	Polyclonal
Calculated MW	183kDa KDa
Dilution	WB~~1:1000 IHC-P~~N/A E~~N/A

DNMT / DNMT1 Antibody (Internal) - 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 Hsal, DNA MTase Hsal, M.Hsal, MCMT, DNMT1, AIM, CXXC9, DNMT

Target/Specificity

Human DNMT1.

Reconstitution & Storage

Store at -20°C. Minimize freezing and thawing.

Precautions

DNMT / DNMT1 Antibody (Internal) is for research use only and not for use in diagnostic or therapeutic procedures.

DNMT / DNMT1 Antibody (Internal) - 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

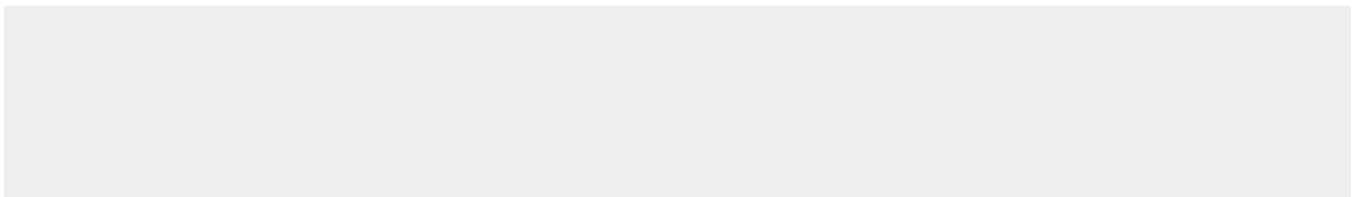
Ubiquitous; highly expressed in fetal tissues, heart, kidney, placenta, peripheral blood mononuclear cells, and expressed at lower levels in spleen, lung, brain, small intestine, colon, liver, and skeletal muscle. Isoform 2 is less expressed than isoform 1.

DNMT / DNMT1 Antibody (Internal) - Protocols

Provided below are standard protocols that you may find useful for product applications.

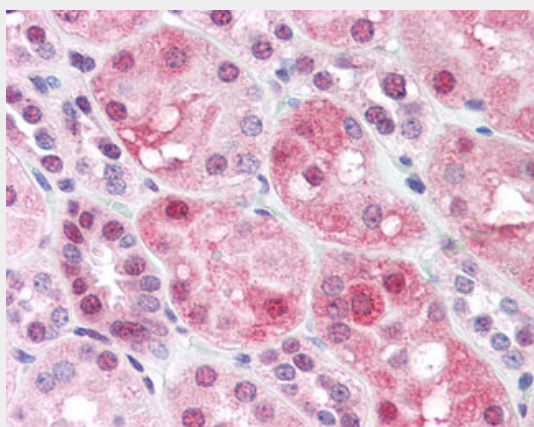
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

DNMT / DNMT1 Antibody (Internal) - Images





Antibody (0.5 ug/ml) staining of Jurkat cell lysate (35 ug protein in RIPA buffer).



Anti-DNMT1 antibody IHC of human kidney.

DNMT / DNMT1 Antibody (Internal) - Background

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.

DNMT / DNMT1 Antibody (Internal) - References

- Yen R.-W.C., et al. *Nucleic Acids Res.* 20:2287-2291(1992).
- Yoder J.A., et al. *J. Biol. Chem.* 271:31092-31097(1996).
- Li L.C., et al. Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
- Grimwood J., et al. *Nature* 428:529-535(2004).
- Hsu D.-W., et al. *Proc. Natl. Acad. Sci. U.S.A.* 96:9751-9756(1999).