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Dnmt1 Antibody (C-term S1602)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1032A

Specification

Dnmt1 Antibody (C-term S1602) - Product Information

Application	**WB, FC,E**
Primary Accession	P26358
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**1588-1616**

Dnmt1 Antibody (C-term S1602) - Additional Information

Gene ID 1786

Other Names
DNA (cytosine-5)-methyltransferase 1, Dnmt1, CXXC-type zinc finger protein 9, DNA methyltransferase HsaI, DNA MTase HsaI, MHsaI, MCMT, DNMT1, AIM, CXXC9, DNMT

Target/Specificity
This Dnmt1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1588-1616 amino acids from the C-terminal region of human Dnmt1.

Dilution
WB~~1:1000
FC~~1:10~50

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Dnmt1 Antibody (C-term S1602) is for research use only and not for use in diagnostic or therapeutic procedures.

Dnmt1 Antibody (C-term S1602) - 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.

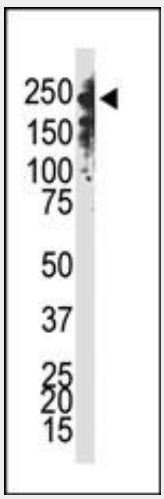
Tissue Location
Ubiquitous; highly expressed in fetal tissues, heart, kidney, placenta, peripheral blood mononuclear cells, and expressed at lower levels in spleen, lung, brain, small intestine, colon, liver, and skeletal muscle. Isoform 2 is less expressed than isoform 1.

Dnmt1 Antibody (C-term S1602) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Dnmt1 Antibody (C-term S1602) - Images



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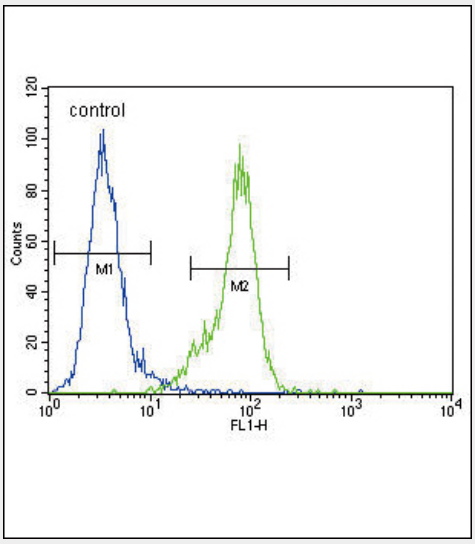
The anti-Dnmt1 C-term Pab (Cat. #AP1032a) is used in Western blot to detect Dnmt1 in Jurkat cell lysate.



Dnmt1 Antibody (C-term S1602) (Cat. #AP1032a) flow cytometric analysis of MDA-MB435 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Dnmt1 Antibody (C-term S1602) - Background

Methylation of DNA at cytosine residues plays an important role in regulation of gene expression, genomic imprinting and is essential for mammalian development. Hypermethylation of CpG islands in tumor suppressor genes or hypomethylation of bulk genomic DNA may be linked with development of cancer. To date, 3 families of mammalian DNA methyltransferase genes have been identified which include Dnmt1, Dnmt2 and Dnmt3. Dnmt1 is constitutively expressed in proliferating cells and inactivation of this gene causes global demethylation of genomic DNA and embryonic lethality. Dnmt2 is expressed at low levels in adult tissues and its inactivation does not affect DNA methylation or maintenance of methylation. The Dnmt3 family members, Dnmt3a and Dnmt3b, are strongly expressed in ES cells but their expression is down regulated in differentiating ES cells and is low in adult somatic tissue. Dnmt1 co-purifies with the retinoblastoma (Rb) tumour suppressor gene product, E2F1, and HDAC1. Dnmt1 also cooperates with Rb to repress transcription from promoters containing E2Fbinding sites suggesting a link between DNA methylation, histone deacetylase and sequence-specific DNA binding activity, as well as a growth-regulatory pathway that is disrupted in nearly all cancer cells.

Dnmt1 Antibody (C-term S1602) - References

Peterson, E.J., et al., Cancer Res. 63(20):6579-6582 (2003). Leu, Y.W., et al., Cancer Res. 63(19):6110-6115 (2003). Saito, Y., et al., Int. J. Cancer 105(4):527-532 (2003). Siedlecki, P., et al., Biochem. Biophys. Res. Commun. 306(2):558-563 (2003). Macaluso, M., et al., Oncogene 22(23):3511-3517 (2003).

Dnmt1 Antibody (C-term S1602) - Citations

- DNA methylation and regulation of DNA methyltransferases in a freeze tolerant vertebrate.
- Glucocorticoid-induced S-adenosylmethionine enhances the interferon signaling pathway by restoring STAT1 protein methylation in hepatitis B virus-infected cells.
- Epigenetic mechanisms of age-dependent KIR2DL4 expression in T cells.
- Age-related changes in Usp9x protein expression and DNA methylation in mouse brain.
- Sex- and tissue-specific expression of maintenance and de novo DNA methyltransferases upon low dose X-irradiation in mice.

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