ARG20541
anti-Dnmt1 antibody [60B1220.1]

Package: 50 µg
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [60B1220.1] recognizes Dnmt1
Tested Reactivity	Hu, Ms, Fsh, Zfsh
Tested Application	ChIP, IHC-P, IP, WB
Specificity	Cross-react with mouse DNMT1.
Host	Mouse
Clonality	Monoclonal
Clone	60B1220.1
Isotype	IgG1, kappa
Target Name	Dnmt1
Species	Human
Immunogen	Synthetic peptide around aa. 637-650 of Human DNMT1.
Conjugation	Un-conjugated
Alternate Names	AIM; DNMT; MCMT; CXXC9; HSN1E; ADCADN; DNA (cytosine-5)-methyltransferase 1; Dnmt1; EC 2.1.1.37; CXXC-type zinc finger protein 9; DNA methyltransferase HsaI; DNA MTase HsaI; M.HsaI; MCMT

Application Instructions

Application table

Application	Dilution
ChIP	Assay-dependent
IHC-P	Assay-dependent
IP	Assay-dependent
WB	1:1000

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

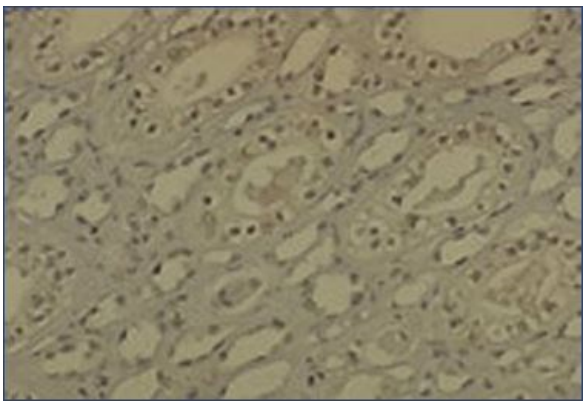
Form	Liquid
Purification	Purification with Protein G.
Buffer	PBS, 0.05% BSA and 0.05% Sodium azide
Preservative	0.05% Sodium azide
Stabilizer	0.05% BSA
Concentration	1 mg/ml

Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

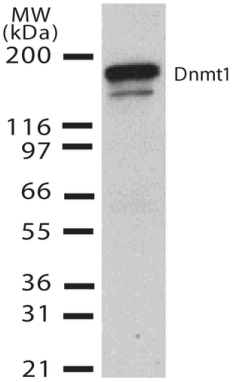
Database links	GeneID: 13433 Mouse GeneID: 1786 Human Swiss-port # P13864 Mouse Swiss-port # P26358 Human
Gene Symbol	DNMT1
Gene Full Name	DNA (cytosine-5-)-methyltransferase 1
Background	Methylation of DNA at cytosine residues plays an important role in regulation of gene expression, genomic imprinting 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 E2F-binding 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.
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. [UniProt]
Research Area	Gene Regulation antibody
Calculated Mw	183 kDa
PTM	Sumoylated; sumoylation increases activity. Acetylation on multiple lysines, mainly by KAT2B/PCAF, regulates cell cycle G(2)/M transition. Deacetylation of Lys-1349 and Lys-1415 by SIRT1 increases methyltransferase activity. Phosphorylation of Ser-154 by CDKs is important for enzymatic activity and protein stability. Phosphorylation of Ser-143 by AKT1 prevents methylation by SETD7 therebye increasing DNMT1 stability. Methylation at Lys-142 by SETD7 promotes DNMT1 proteasomal degradation. Ubiquitinated by UHRF1; interaction with USP7 counteracts ubiquitination by UHRF1 by promoting deubiquitination and preventing degradation by the proteasome.
Cellular Localization	Nucleus

Images



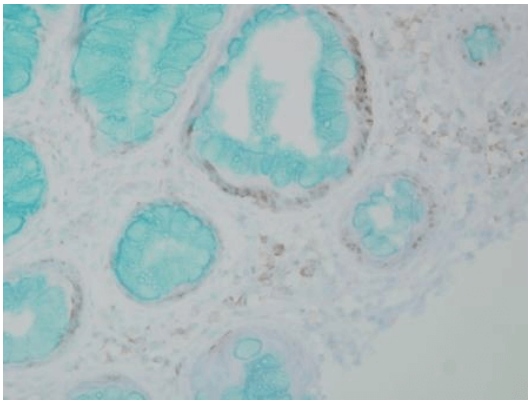
ARG20541 anti-Dnmt1 antibody [60B1220.1] IHC image

Immunohistochemistry: Medullar kidney tissue sections stained with ARG20541 anti-Dnmt1 antibody [60B1220.1].



ARG20541 anti-Dnmt1 antibody [60B1220.1] WB image

Western blot: Human H1299 cell lysate stained with ARG20541 anti-Dnmt1 antibody [60B1220.1] at 1:1000 dilution.



ARG20541 anti-Dnmt1 antibody [60B1220.1] IHC image

Immunohistochemistry: Formalin-fixed Human colon carcinoma stained with ARG20541 anti-Dnmt1 antibody [60B1220.1] at 1:10,000 for 12 hours at 4°C. Secondary Antibody: Biotin Goat anti-Mouse at 1:2000 for 1 hour at RT. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain at 200 µl for 2 minutes at RT. Magnification: 40x.