

## **DNMT1** Antibody

Rabbit Polyclonal Antibody Catalog # ABV10734

## **Specification**

## **DNMT1 Antibody - Product Information**

Application WB
Primary Accession Q9Z330

Reactivity Human, Mouse, Rat

Host Rabbit
Clonality Polyclonal
Isotype Rabbit IgG
Calculated MW 182774

# **DNMT1** Antibody - Additional Information

Positive Control Rat kidney tissue lysate

Application & Usage Western blot analysis (0.5-4 μg/ml).

However, the optimal conditions should be determined individually. Rat kidney tissue lysate can be used as a positive control.

## **Other Names**

DNA (cytosine-5)-methyltransferase 1, Dnmt1, CXXC-type zinc finger protein 9, DNA methyltransferase Hsal, DNA MTase Hsal, M.Hsal, MCMT

# **Target/Specificity**

DNMT1

## **Antibody Form**

Liquid

## **Appearance**

Colorless liquid

#### **Formulation**

 $100 \mu g$  (0.5 mg/ml) affinity purified rabbit anti-DNMT1 polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 30% glycerol, 0.5% BSA, 0.01% thimerosal

#### Handling

The antibody solution should be gently mixed before use.

## **Reconstitution & Storage**

-20 °C

## **Background Descriptions**

## **Precautions**

DNMT1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.



## **DNMT1 Antibody - Protein Information**

#### Name Dnmt1

#### **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. Also required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing. Promotes tumor growth.

**Cellular Location** Nucleus.

#### **Tissue Location**

Isoforms 0 and 8 are highly expressed in placenta, brain, lung, spleen, kidney, heart, and at much lower levels in liver Isoform 1 is expressed in cerebellum, isoform 2 in muscle and testis, isoform 3 in lung, isoform 4 in spleen and brain, and isoform 5 in brain

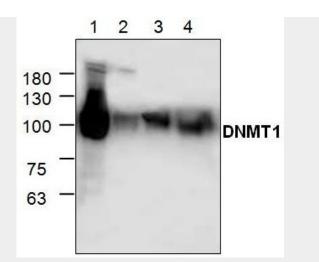
# **DNMT1 Antibody - Protocols**

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 - Images**





Western blot analysis of DMNT1 with lysate from rat kidney tissue (Lane 1), 3T3 cells (Lane 2) and Jurkat cells (Lane 3 & 4).

# **DNMT1 Antibody - 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.