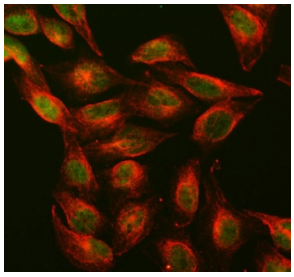
DNMT1 Antibody / DNA Methylation Maintenance Enzyme Antibody (RQ4002)

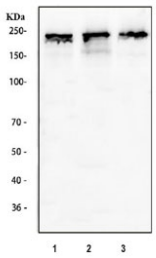
Catalog No.	Formulation	Size
RQ4002	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

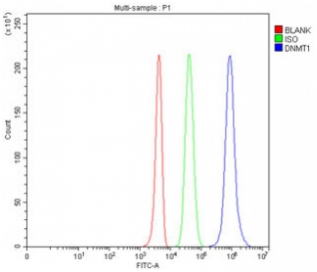
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P26358
Localization	Nuclear
Applications	Western Blot: 0.5-1ug/ml Immumofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This DNMT1 Antibody / DNA Methylation Maintenance Enzyme Antibody is available for research use only.



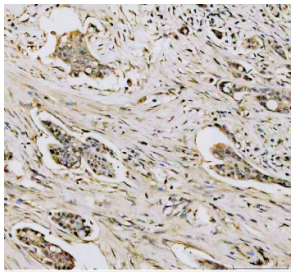
DNMT1 Antibody U-2 OS Cell IF. Immunofluorescence analysis of FFPE human U-2 OS cells using DNMT1 Antibody (green) shows predominant nuclear staining consistent with localization of DNA methyltransferase 1 during epigenetic maintenance. Alpha Tubulin mAb (red) highlights the cytoskeletal network, providing cellular context and contrast. The nuclear enrichment of signal supports DNMT1 function in DNA methylation and chromatin regulation. HIER: steam FFPE sections in pH 6 citrate buffer for 20 min.



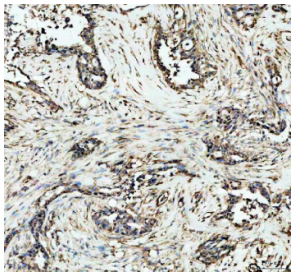
DNMT1 Antibody Multi-Cell Line WB. Western blot analysis of human 1) HeLa, 2) 293T, and 3) SH-SY5Y cell lysates using DNMT1 Antibody detects a band at approximately 180â€“200 kDa, consistent with the predicted molecular weight of DNMT1 / DNA methyltransferase 1. The strong, high-molecular-weight signal across all three cell lines supports detection of this nuclear maintenance methyltransferase, aligning with its role in preserving DNA methylation patterns during cell proliferation.



DNMT1 Antibody 293T Cell FACS. Flow cytometry analysis of fixed and permeabilized human 293T cells using DNMT1 Antibody (blue) shows a clear rightward shift relative to unstained cells (red) and isotype control (green), indicating detection of DNMT1 / DNA methyltransferase 1 expression. The intracellular signal distribution is consistent with localization of this nuclear epigenetic regulator involved in maintenance of DNA methylation during cell proliferation.



DNMT1 Antibody Breast Cancer Tissue IHC. Immunohistochemistry analysis of FFPE human breast carcinoma tissue using DNMT1 Antibody shows nuclear HRP-DAB brown staining in tumor epithelial cells, consistent with localization of DNMT1 / DNA methyltransferase 1 as a nuclear epigenetic regulator. Staining intensity varies across tumor regions, with positive nuclei distributed within malignant cell populations, while surrounding stromal elements display lower signal. Hematoxylin counterstain provides nuclear contrast and tissue architecture. HIER: boil FFPE tissue sections in pH 8 EDTA for 20 min and allow to cool before testing.



DNMT1 Antibody Pancreatic Cancer Tissue IHC. Immunohistochemistry analysis of FFPE human pancreatic carcinoma tissue using DNMT1 Antibody shows nuclear HRP-DAB brown staining in tumor epithelial cells, consistent with localization of DNMT1 / DNA methyltransferase 1 as a nuclear epigenetic regulator. Positive nuclei are observed within malignant glandular structures, while surrounding stromal regions display lower staining intensity. Hematoxylin counterstain provides nuclear contrast and tissue architecture. HIER: boil FFPE tissue sections in pH 8 EDTA for 20 min and allow to cool before testing.

Description

DNA methyltransferase 1 (DNMT1) is a nuclear enzyme responsible for maintaining DNA methylation patterns during DNA replication, ensuring stable inheritance of epigenetic information across cell divisions. DNMT1 Antibody / DNA Methylation Maintenance Enzyme Antibody is designed to detect this essential regulator in biological systems where epigenetic control and gene expression are of interest. DNMT1 preferentially methylates hemimethylated CpG dinucleotides, preserving methylation marks that regulate chromatin structure and transcriptional activity.

DNMT1 antibody, also referred to as DNA methyltransferase 1 antibody in the literature, recognizes a protein localized predominantly in the nucleus, where it associates with replication foci during S phase. DNMT1 interacts with proteins such as UHRF1 and PCNA to coordinate DNA methylation with DNA synthesis, ensuring faithful propagation of epigenetic marks. This activity is critical for maintaining genomic stability, regulating gene expression, and controlling cellular differentiation.

This DNMT1 Antibody / DNA Methylation Maintenance Enzyme Antibody is uniquely positioned for studies of epigenetic regulation and chromatin biology. DNMT1 plays a central role in silencing repetitive elements, regulating imprinting, and maintaining cell-type specific gene expression patterns. In immunohistochemistry, DNMT1 is typically observed as nuclear staining in proliferating cells, reflecting its involvement in DNA replication and methylation maintenance.

Alterations in DNMT1 expression and activity have been widely associated with cancer, where aberrant DNA methylation contributes to tumor suppressor gene silencing and oncogenic transformation. DNMT1 is frequently upregulated in malignancies and is considered a key mediator of epigenetic dysregulation. In addition to cancer, DNMT1 is involved in developmental processes and stem cell maintenance, where precise control of DNA methylation is essential.

This DNMT1 Antibody / DNA Methylation Maintenance Enzyme Antibody is suitable for detecting DNMT1 expression in research applications focused on epigenetic regulation, DNA methylation, and gene expression control. As a rabbit polyclonal antibody, it enables recognition of multiple epitopes, supporting robust detection across diverse experimental conditions. Its performance supports detailed evaluation of DNMT1 localization and function in normal and disease-associated systems.

Explore additional antibodies to DNA methylation enzymes, chromatin regulators, and epigenetic control proteins on Epigenetics Antibodies page.

Application Notes

Optimal dilution of the DNMT1 Antibody / DNA Methylation Maintenance Enzyme Antibody should be determined by the researcher.

Immunogen

A recombinant human partial protein corresponding to amino acids D22-N126 was used as the immunogen for the DNMT1 antibody.

Storage

After reconstitution, the DNMT1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

DNMT1 antibody, DNA methyltransferase 1 antibody, DNMT1 protein antibody, Maintenance methyltransferase antibody, Epigenetic regulator antibody

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