Technical Data Sheet

Purified Mouse Anti-Human DNMT1

Product Information

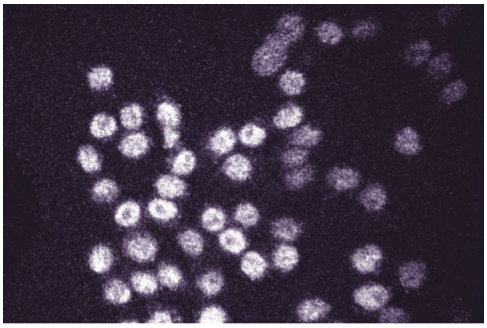
Material Number:	**612618**
Alternate Name:	DNA Methyl Transferase-1
Size:	50 µg
Concentration:	250 µg/ml
Clone:	18/DNMT1
Immunogen:	Human DNMT1 aa. 476-670
Isotype:	Mouse IgG2b
Reactivity:	QC Testing: Human
Target MW:	200 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

DNA methylation of the 5' position of the cytosine ring within CpG dinucleotides is essential for embryonic development. This methylation may affect transcriptional repression, formation of compact chromatin structures, X chromosome inactivation, and imprinting control. Three important DNA (Cytosine-5) methyltransferases (DNMTs) include DNMT1, DNMT3A, and DNMT3B. DNMT1 contains an N-terminal regulatory domain that may target it to replication foci, and a C-terminal catalytic domain that is homologous to bacterial cystosine 5-methylases. DNMT1 knockout mice have reduced DNA methylation, defects in imprinting, and derepression of endogenous retroviruses, and are embryonic lethal. DNMT1 is responsible for DNA methylations that occur after replication, while DNMT3A and DNMT3B act to establish new methylation patterns during embryogenesis. DNMT1 and DNMT3A are expressed in most fetal tissues, while DNMT3B is expressed only in fetal liver. All of these DNMTs are found in various adult tissues and show increased expression in some tumors and cancer cell lines. Thus, DNMT methylation of CpG dinucleotides is important for regulating DNA structure during development.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or repoerted in the literature.

Western blot analysis of DNMT1 on a Jurkat cell lysate (Human T-cell leukemia; ATCC TIB-152). *Lane 1: 1:500, lane 2: 1:1000, lane 3: 1:2000 dilution of the mouse anti- human DNMT1 antibody.*



Immunofluorescence staining of HeLa cells (Human cervical epitheloid carcinoma; ATCC CCL-2.2).

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at -20° C.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

Suggested Companion Products

Catalog Number	Name	Size	Clone
611451	Jurkat Cell Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Igs	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Igs	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.

References

Robertson KD, Ait-Si-Ali S, Yokochi T. DNMT1 forms a complex with Rb, E2F1 and HDAC1 and represses transcription from E2F-responsive promoters. *Nat Genet.* 2000; 25(3):338-342.(Biology)

Robertson KD, Uzvolgyi E, Liang G. The human DNA methyltransferases (DNMTs) 1, 3a and 3b: coordinate mRNA expression in normal tissues and overexpression in tumors. *Nucleic Acids Res.* 1999; 27(11):2291.(Biology)

Yen RW, Vertino PM, Nelkin BD. Isolation and characterization of the cDNA encoding human DNA methyltransferase. *Nucleic Acids Res.* 1992; 20(9):2287. (Biology)

Yoder JA, Yen RW, Vertino PM, Bestor TH, Baylin SB. New 5' regions of the murine and human genes for DNA (cytosine-5)-methyltransferase. *J Biol Chem.* 1996; 271(49):31092-31097.(Biology)