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Mouse Monoclonal Antibody to DNMT3L

Purified Mouse Monoclonal Antibody
Catalog # AO2324a

Product Information

Application	WB, FC, E
Primary Accession	Q9UJW3
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	2D10H11
Isotype	Mouse IgG1
Calculated MW	43583
Description	CpG methylation is an epigenetic modification that is important for embryonic development, imprinting, and X-chromosome inactivation. Studies in mice have demonstrated that DNA methylation is required for mammalian development. This gene encodes a nuclear protein with similarity to DNA methyltransferases, but is not thought to function as a DNA methyltransferase as it does not contain the amino acid residues necessary for methyltransferase activity. However, it does stimulate de novo methylation by DNA cytosine methyltransferase 3 alpha and is thought to be required for the establishment of maternal genomic imprints. This protein also mediates transcriptional repression through interaction with histone deacetylase 1. Alternatively spliced transcript variants encoding different isoforms have been found for this gene.;
Immunogen	Purified recombinant fragment of human DNMT3L (AA: 147-386) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide
Application Note	ELISA: 1/10000; WB: 1/500 - 1/2000; FCM: 1/200 - 1/400

Additional Information

Gene ID	29947
Other Names	DNA (cytosine-5)-methyltransferase 3-like, DNMT3L
Dilution	WB~~1:1000 FC~~1:10~50 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Monoclonal Antibody to DNMT3L is for research use only and not for use in diagnostic or therapeutic procedures.

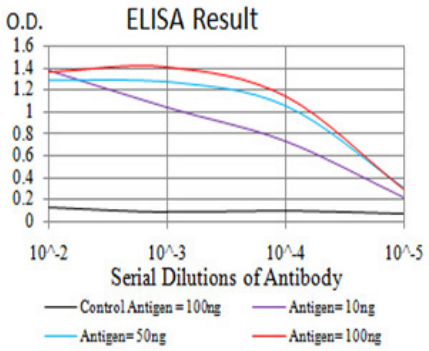
Protein Information

Name	DNMT3L
Function	Catalytically inactive regulatory factor of DNA methyltransferases that can either promote or inhibit DNA methylation depending on the context (By similarity). Essential for the function of DNMT3A and DNMT3B: activates DNMT3A and DNMT3B by binding to their catalytic domain (PubMed:17687327). Acts by accelerating the binding of DNA and S-adenosyl-L-methionine (AdoMet) to the methyltransferases and dissociates from the complex after DNA binding to the methyltransferases (PubMed:17687327). Recognizes unmethylated histone H3 lysine 4 (H3K4me0) and induces de novo DNA methylation by recruitment or activation of DNMT3 (PubMed:17687327). Plays a key role in embryonic stem cells and germ cells (By similarity). In germ cells, required for the methylation of imprinted loci together with DNMT3A (By similarity). In male germ cells, specifically required to methylate retrotransposons, preventing their mobilization (By similarity). Plays a key role in embryonic stem cells (ESCs) by acting both as an positive and negative regulator of DNA methylation (By similarity). While it promotes DNA methylation of housekeeping genes together with DNMT3A and DNMT3B, it also acts as an inhibitor of DNA methylation at the promoter of bivalent genes (By similarity). Interacts with the EZH2 component of the PRC2/EED-EZH2 complex, preventing interaction of DNMT3A and DNMT3B with the PRC2/EED-EZH2 complex, leading to maintain low methylation levels at the promoters of bivalent genes (By similarity). Promotes differentiation of ESCs into primordial germ cells by inhibiting DNA methylation at the promoter of RHOX5, thereby activating its expression (By similarity).
Cellular Location	Nucleus.
Tissue Location	Expressed at low levels in several tissues including testis, ovary, and thymus.

References

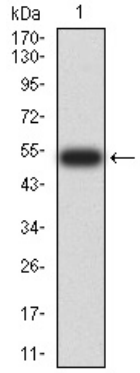
1.Clin Cancer Res. 2010 May 15;16(10):2751-9. ; 2.Epigenetics. 2009 Jul 1;4(5):322-9. ;

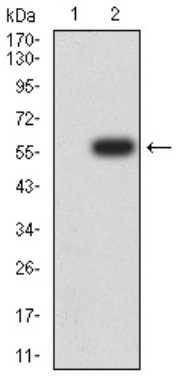
Images



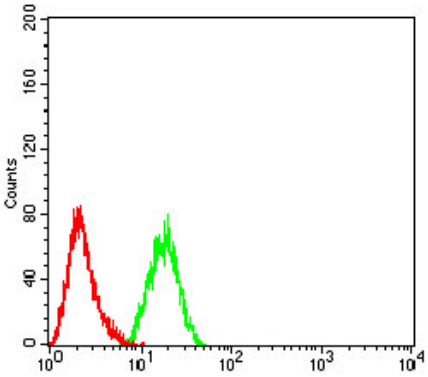
Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

Western blot analysis using DNMT3L mAb against human DNMT3L (AA: 147-386) recombinant protein. (Expected MW is 53.9 kDa)

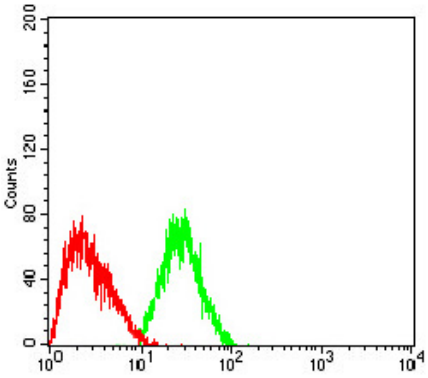




Western blot analysis using DNMT3L mAb against HEK293 (1) and DNMT3L (AA: 147-386)-hIgGFc transfected HEK293 (2) cell lysate.



Flow cytometric analysis of Hela cells using DNMT3L mouse mAb (green) and negative control (red).



Flow cytometric analysis of HepG2 cells using DNMT3L mouse mAb (green) and negative control (red).