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Mouse Dnmt3L Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1062a

Product Information

Application	WB, E
Primary Accession	Q9CWR8
Other Accession	Q1LZ50
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB2393
Calculated MW	47993
Antigen Region	389-421

Additional Information

Gene ID	54427
Other Names	DNA (cytosine-5)-methyltransferase 3-like, Dnmt3l
Target/Specificity	This Mouse Dnmt3L antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 389-421 amino acids from mouse Dnmt3L.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Dnmt3L Antibody 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 (PubMed:11719692, PubMed:15318244, PubMed:15671018,

PubMed:24074865). Essential for the function of DNMT3A and DNMT3B: activates DNMT3A and DNMT3B by binding to their catalytic domain (PubMed:15671018). 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:15671018). Recognizes unmethylated histone H3 lysine 4 (H3K4me0) and induces de novo DNA methylation by recruitment or activation of DNMT3 (By similarity). Plays a key role in embryonic stem cells and germ cells (PubMed:11719692, PubMed:15318244, PubMed:24074865). In germ cells, required for the methylation of imprinted loci together with DNMT3A (PubMed:11719692). In male germ cells, specifically required to methylate retrotransposons, preventing their mobilization (PubMed:15318244). Plays a key role in embryonic stem cells (ESCs) by acting both as an positive and negative regulator of DNA methylation (PubMed:24074865). 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 (PubMed:24074865). 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 (PubMed:24074865). Promotes differentiation of ESCs into primordial germ cells by inhibiting DNA methylation at the promoter of RHOX5, thereby activating its expression (PubMed:24074865).

Cellular Location Nucleus.

Tissue Location Expressed in testis, thymus, ovary, and heart (PubMed:11306809).

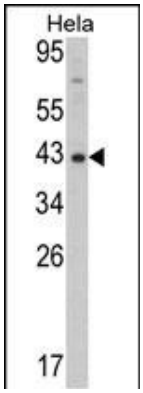
Background

mDnmt3L (DNA methyltransferase 3L) does not appear to be catalytically active due to loss of the critical active site residues. It may function not directly as a DNA methyltransferase but rather as a regulator of methylation at imprinted loci. It is required specifically for the establishment of genomic imprints but is dispensable for their propagation. It is essential for the de novo methylation of single-copy DNA sequences. The protein is well-express in testis, thymus, ovary, and heart. mDnmt3L, which belongs to the 5-cytosine methyltransferase family, contains 1 ADD-type zinc finger.

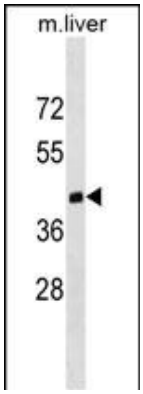
References

Okazaki, Y., et al., Nature 420(6915):563-573 (2002).
Bourc'his, D., et al., Science 294(5551):2536-2539 (2001).
Aapola, U., et al., Cytogenet. Cell Genet. 92 (1-2), 122-126 (2001).

Images



Western blot analysis of Mouse Dnmt3L Antibody (Cat. #AP1062a) in Hela cell line lysates (35ug/lane). Dnmt3l (arrow) was detected using the purified Pab.



Dnmt3l Antibody (C403) (Cat. #AP1062a) western blot analysis in mouse liver tissue lysates (35ug/lane).This demonstrates the Dnmt3l antibody detected the Dnmt3l protein (arrow).

Citations

- Co-option of the PRDM14-CBFA2T complex from motor neurons to pluripotent cells during vertebrate evolution.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.