abcam

Product datasheet

Anti-Dnmt3L antibody ab3493

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Overview

Product name	Anti-Dnmt3L antibody
Description	Rabbit polyclonal to Dnmt3L
Host species	Rabbit
Specificity	This antibody is expected to cross-react with mouse as the sequence of the human immunogen shows 76% identity with mouse.
Tested applications	**Suitable for:** ICC/IF, ELISA, WB, IP
Species reactivity	**Reacts with:** Mouse, Rat, Hamster, Cow, Human
Immunogen	Synthetic peptide corresponding to Human Dnmt3L aa 152-164 conjugated to keyhole limpet haemocyanin. Sequence: C-GLLQRRRKWRSQL Database link: Q9UJW3 Run BLAST with Run BLAST with
General notes	DNMT 3L is a nuclear protein which has similarity to DNA methyltransferases, involved in de novo methylation of CpG islands. 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. This protein is not thought to function as a DNA methyltransferase as it does not contain the amino acid residues necessary for methyltransferase activity. However, this protein does stimulate de novo methylation by DNA cytosine methyltransferase 3 alpha and it is thought to be required for the establishment of maternal genomic imprints. This protein also mediates transcriptional repression through interaction with histone deacetylase 1.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide

	Constituents: 0.42% Potassium phosphate, 0.87% Sodium chloride
Purity	Immunogen affinity purified
Purification notes	This is an affinity purified antibody produced by immunoaffinity chromatography using the immunizing peptide after immobilization to a solid phase. This antibody is expected to cross-react with mouse as the sequence of the human immunogen shows 76% identity with mouse. Reactivity with DNMT3L from other species has not yet been tested.
Primary antibody notes	DNMT 3L is a nuclear protein which has similarity to DNA methyltransferases, involved in de novo methylation of CpG islands. 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. This protein is not thought to function as a DNA methyltransferase as it does not contain the amino acid residues necessary for methyltransferase activity. However, this protein does stimulate de novo methylation by DNA cytosine methyltransferase 3 alpha and it is thought to be required for the establishment of maternal genomic imprints. This protein also mediates transcriptional repression through interaction with histone deacetylase 1.
Clonality	Polyclonal
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab3493** in the following tested applications.

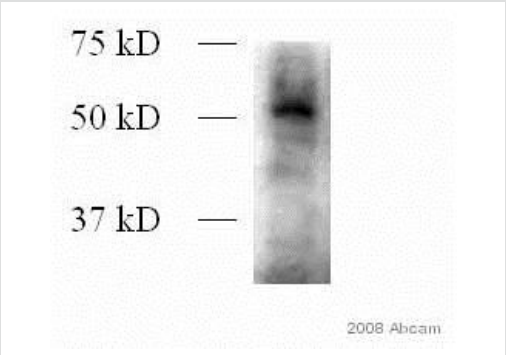
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC/IF	★★★★☆	1/500.
ELISA		1/1000 - 1/3000. 1/1000 - 1/3000 against 0.1µg of the immunizing peptide.
WB	★★★★★	Use a concentration of 0.4 µg/ml. Predicted molecular weight: 43.6 kDa. Use at an assay dependent dilution. The target may need to be immunoprecipitated to identify the target in WB. Predicted molecular weight: 43.6 kDa.
IP	★★★★★	1/100.

Target

Function	Catalytically inactive regulatory factor of DNA methyltransferases. It is essential for the function of DNMT3A and DNMT3B. Activates DNMT3A and DNMT3B by binding to their catalytic domain. Accelerates the binding of DNA and AdoMet to the methyltransferases and dissociates from the complex after DNA binding to the methyltransferases. Recognizes unmethylated histone H3 lysine 4 (H3K4) and induces de novo DNA methylation by recruitment or activation of DNMT3.
Tissue specificity	Expressed at low levels in several tissues including testis, ovary, and thymus.
Sequence similarities	Belongs to the C5-methyltransferase family. Contains 1 ADD-type zinc finger.
Cellular localization	Nucleus.

Images



Western blot - Anti-Dnmt3L antibody (ab3493)

This image is courtesy of an anonymous Abreview

Anti-Dnmt3L antibody (ab3493) at 1/1000 dilution + Rat C6 cells, whole cell lysate at 25 µg

Secondary

HRP conjugated goat anti-rabbit antibody at 1/3000 dilution

Developed using the ECL technique.

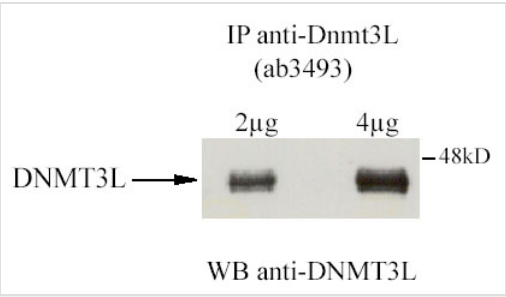
Performed under reducing conditions.

Predicted band size: 43.6 kDa

Observed band size: 52 kDa

why is the actual band size different from the predicted?

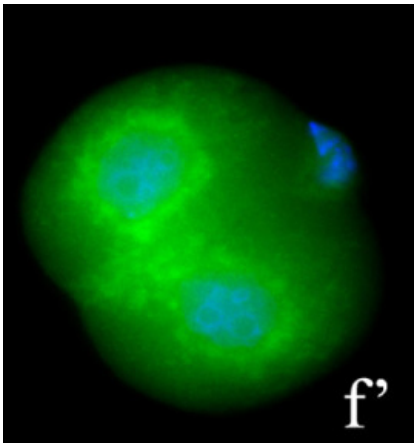
Exposure time: 30 seconds



Immunoprecipitation - Anti-Dnmt3L antibody (ab3493)

Transfection of U2OS cells (10cm dish) using 3µg of GAL4-DNMT3L. Protein extraction using IPH 150mM. IP and WB conditions, see Fuks et al. (2000). Nature Genetics 24: 88-91.WB using 0.4µg/ml in TBS milk 2%, BSA 0.5%. Dectection using ECL.

Note: ab3493 worked in WB following IP, but did not work in a straight WB.



Immunocytochemistry/ Immunofluorescence - Anti-Dnmt3L antibody (ab3493)

Image from Zuccotti M et al., BMC Genomics. 2011 Jul 5;12:1-13. doi: 10.1186/1471-2164-12-345.; Fig 3.; 5 July 2011, BMC Genomics 2011, 12:345

Immunofluorescence analysis of 2-cell mouse embryos, staining Dnmt3L with ab3493.

Embryos were fixed with paraformaldehyde, permeabilized with 0.5% Triton X-100 and blocked with 0.5% blocking reagent in TNT (0.1 M, Tris-HCl, pH 7.5, 0.15 M NaCl, 0.05% Tween-20) buffer for 20 min at 4°C. Embryos were incaubted with primary antibody (1/500) for 1 hour at 37°C. An AlexaFluor®488-conjugated goat anti-rabbit IgG (1/400) was used as the secondary antibody.

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