#12309 Store at -20°C

DNMT3L Antibody (Mouse Specific)

☑ 100 µl
(10 western blots)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

Entrez-Gene ID #54427
Swiss-Prot Acc. #Q9CWR8

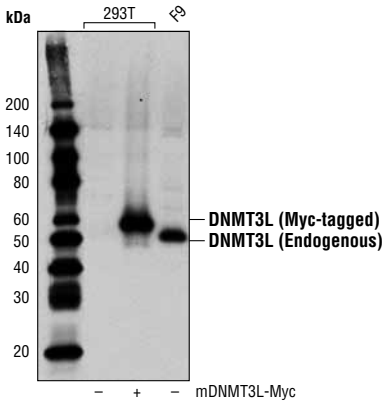
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP	M	49 kDa	Rabbit**
Endogenous			

Background: Methylation of DNA at cytosine residues in mammalian cells is a heritable, epigenetic modification that is critical for proper regulation of gene expression, genomic imprinting, and development (1,2). Three families of mammalian DNA methyltransferases have been identified: DNMT1, DNMT2, and DNMT3 (1,2). DNMT1 is constitutively expressed in proliferating cells and functions as a maintenance methyltransferase, transferring proper methylation patterns to newly synthesized DNA during replication. DNMT3A and DNMT3B are strongly expressed in embryonic stem cells with reduced expression in adult somatic tissues. DNMT3A and DNMT3B function as *de novo* methyltransferases that methylate previously unmethylated regions of DNA. DNMT2 is expressed at low levels in adult somatic tissues and its inactivation affects neither *de novo* nor maintenance DNA methylation.

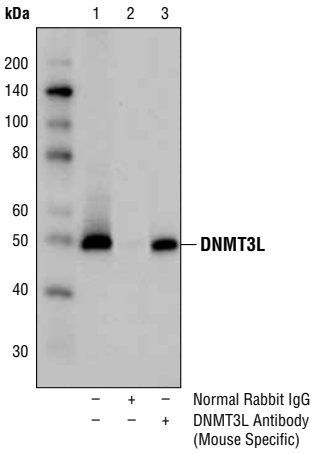
DNMT3L is a catalytically inactive regulatory factor for the DNMT3A and DNMT3B *de novo* methyltransferases that is expressed at low levels in embryonic stem cells, testis, ovaries, and thymus (1,2). These *de novo* methyltransferases consist of a heterotetrameric complex containing two molecules of DNMT3L, and either two molecules of DNMT3A or DNMT3B (3). DNMT3L contains an amino-terminal ATRX-DNMT3-DNMT3L (ADD) domain and a carboxy-terminal methyltransferase-like domain (4-7). The methyltransferase-like domain binds to DNMT3A and DNMT3B to stimulate catalytic activity by increasing the binding of S-adenosylmethionine and DNA (4,5). The ADD domain recruits the methyltransferase complex to transcriptionally inactive regions of the genome by binding to unmethylated histone H3 Lys4 (6,7).

Specificity/Sensitivity: DNMT3L Antibody (Mouse Specific) recognizes endogenous levels of total DNMT3L protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro375 of mouse DNMT3L protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from 293T cells, mock transfected (-) or transfected with a construct expressing Myc-tagged full-length mouse DNMT3L (mDNMT3L-Myc; +), and F9 cells using DNMT3L Antibody (Mouse Specific).



Immunoprecipitation of DNMT3L from F9 cell extracts, using Normal Rabbit IgG #2729 (lane 2) or DNMT3L Antibody (Mouse Specific) (lane 3). Lane 1 is 10% input. Western blot analysis was performed using DNMT3L Antibody (Mouse Specific).

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

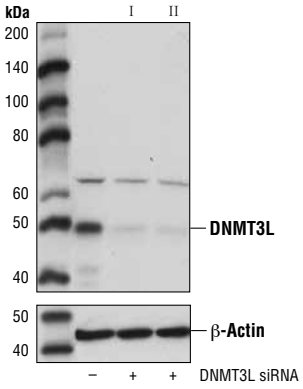
Western blotting	1:1000
Immunoprecipitation	1:50

For product specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended complementary products.

Background References:

(1) Hermann, A. et al. (2004) *Cell Mol Life Sci* 61, 2571-87.
(2) Turek-Plewa, J. and Jagodzinski, P.P. (2005) *Cell Mol Biol Lett* 10, 631-47.
(3) Jia, D. et al. (2007) *Nature* 449, 248-51.
(4) Holz-Schietinger, C. and Reich, N.O. (2010) *J Biol Chem* 285, 29091-100.
(5) Suetake, I. et al. (2004) *J Biol Chem* 279, 27816-23.
(6) Ooi, S.K. et al. (2007) *Nature* 448, 714-7.
(7) Otani, J. et al. (2009) *EMBO Rep* 10, 1235-41.



Western blot analysis of extracts from F9 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® DNMT3L siRNA I (Mouse Specific) (+), or SignalSilence® DNMT3L siRNA II (Mouse Specific) #12308 (+), using DNMT3L Antibody (Mouse Specific) #12309 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The DNMT3L Antibody (Mouse Specific) confirms silencing of DNMT3L expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.