

#2161 Store at -20°C

DNMT3B Antibody

✓ 100 µl (10 western blots)

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

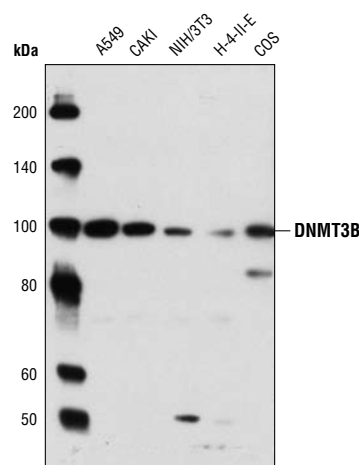
Entrez-Gene ID #1789
Swiss-Prot Acc. #Q9UBC3

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP Endogenous	H, M, R, Mk, (Z)	96 kDa	Rabbit**

Background: Methylation of DNA at cytosine residues in mammalian cells is an 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. DNMT1, DNMT3A and DNMT3B together form a protein complex that interacts with histone deacetylases (HDAC1, HDAC2, Sin3A), transcriptional repressor proteins (RB, TAZ-1) and heterochromatin proteins (HP1, SUV39H1), to maintain proper levels of DNA methylation and facilitate gene silencing (3-8). Improper DNA methylation contributes to diseased states such as cancer (1,2). Hypermethylation of promoter CpG islands within tumor suppressor genes correlates with gene silencing and the development of cancer. In addition, hypomethylation of bulk genomic DNA correlates with and may contribute to the onset of cancer. DNMT1, DNMT3A and DNMT3B are over-expressed in many cancers, including acute and chronic myelogenous leukemias, in addition to colon, breast and stomach carcinomas (9-12)..

Specificity/Sensitivity: DNMT3B Antibody detects endogenous levels of total DNMT3B protein (isoforms 1,2,3 and 6). The antibody does not cross-react with other DNMT proteins, including DNMT3A.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the carboxy-terminus of the human DNMT3B protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell types using DNMT3B Antibody.

Background References:

- (1) Hermann, A. et al. (2004) *Cell. Mol. Life Sci.* 61, 2571–2587.
- (2) Turek-Plewa, J. and Jagodzinski, P.P. (2005) *Cell. Mol. Biol. Lett.* 10, 631–647.
- (3) Kim, G.D. et al. (2002) *EMBO J.* 21, 4183–4195.
- (4) Fuks, F. et al. (2001) *EMBO J.* 20, 2536–2544.
- (5) Geiman, T.M. et al. (2004) *Biochem. Biophys. Res. Commun.* 318, 544–555.
- (6) Rountree, M.R. et al. (2000) *Nat. Genet.* 25, 269–277.
- (7) Pradhan, S. and Kim, G.D. (2002) *EMBO J.* 21, 779–788.
- (8) Fuks, F. et al. (2003) *Nucleic Acids Res.* 31, 2305–2312.
- (9) Mizuno, S. et al. (2001) *Blood* 97, 1172–1179.
- (10) Robertson, K.D. et al. (1999) *Nucleic Acids Res.* 27, 2291–2298.
- (11) Xie, S. et al. (1999) *Gene* 236, 87–95.
- (12) Kanai, Y. et al. (2001) *Int. J. Cancer* 91, 205–212.

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	1:25

For application 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 companion products.

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.