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Dnmt3L Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP1040a

Specification

Dnmt3L Antibody (C-term) Blocking Peptide - Product Information

Primary Accession Q9UJW3

Dnmt3L Antibody (C-term) Blocking Peptide - Additional Information

Gene ID 29947

Other Names
DNA (cytosine-5)-methyltransferase 3-like, DNMT3L

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP1040a was selected from the C-term region of human Dnmt3L. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Dnmt3L Antibody (C-term) Blocking Peptide - 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.

Dnmt3L Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

Dnmt3L Antibody (C-term) Blocking Peptide - Images

Dnmt3L Antibody (C-term) Blocking Peptide - Background

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. Alternative splicing results in two transcript variants. An additional splice variant has been described but its biological validity has not been determined.

Dnmt3L Antibody (C-term) Blocking Peptide - References

Chedin, F., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16916-16921 (2002).Kierszenbaum, A.L., Mol. Reprod. Dev. 63(3):269-272 (2002).Deplus, R., et al., Nucleic Acids Res. 30(17):3831-3838 (2002).Hata, K., et al., Development 129(8):1983-1993 (2002).Burgers, W.A., et al., Trends Genet. 18(6):275-277 (2002).