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(Mouse) Dnmt1 Blocking Peptide (Center)

Synthetic peptide
Catalog # BP21131a

Specification

(Mouse) Dnmt1 Blocking Peptide (Center) - Product Information

Primary Accession P13864

(Mouse) Dnmt1 Blocking Peptide (Center) - Additional Information

Gene ID 13433

Other Names
DNA (cytosine-5)-methyltransferase 1, Dnmt1, Met-1, DNA methyltransferase Mmul, DNA MTase Mmul, MMmul, MCMT, Dnmt1, Dnmt, Met1, Uim

Target/Specificity
The synthetic peptide sequence is selected from aa 881-894 of HUMAN Dnmt1

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.

(Mouse) Dnmt1 Blocking Peptide (Center) - Protein Information

Name Dnmt1

Synonyms Dnmt, Met1, Uim

Function
Methylates CpG residues. Preferentially methylates hemimethylated DNA.

(Mouse) Dnmt1 Blocking Peptide (Center) - Background

Methylates CpG residues. Preferentially methylates hemimethylated DNA. Associates with DNA replication sites in S phase maintaining the methylation pattern in the newly synthesized strand, that is essential for epigenetic inheritance. Associates with chromatin during G2 and M phases to maintain DNA methylation independently of replication. It is responsible for maintaining methylation patterns established in development. DNA methylation is coordinated with methylation of histones. Mediates transcriptional repression by direct binding to HDAC2. In association with DNMT3B and via the recruitment of CTCFL/BORIS, involved in activation of BAG1 gene expression by modulating dimethylation of promoter histone H3 at H3K4 and H3K9.

(Mouse) Dnmt1 Blocking Peptide (Center) - References

Bestor T.H.,et al.J. Mol. Biol. 203:971-983(1988).
Yoder J.A.,et al.J. Biol. Chem. 271:31092-31097(1996).
Aguirre-Arteta A.M.,et al.Cell Growth Differ. 11:551-559(2000).
Margot J.B.,et al.J. Mol. Biol. 297:293-300(2000).
Mertineit C.,et al.Development 125:889-897(1998).

Associates with DNA replication sites in S phase maintaining the methylation pattern in the newly synthesized strand, that is essential for epigenetic inheritance. Associates with chromatin during G2 and M phases to maintain DNA methylation independently of replication. It is responsible for maintaining methylation patterns established in development. DNA methylation is coordinated with methylation of histones. Mediates transcriptional repression by direct binding to HDAC2. In association with DNMT3B and via the recruitment of CTCFL/BORIS, involved in activation of BAG1 gene expression by modulating dimethylation of promoter histone H3 at H3K4 and H3K9. Probably forms a corepressor complex required for activated KRAS- mediated promoter hypermethylation and transcriptional silencing of tumor suppressor genes (TSGs) or other tumor-related genes in colorectal cancer (CRC) cells (By similarity). Also required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs) (By similarity). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing (By similarity). Promotes tumor growth (By similarity).

Cellular Location

Nucleus. Cytoplasm. Note=It is nucleoplasmic through most of the cell cycle and associates with replication foci during S-phase. In germ cells, spermatogonia, preleptotene and leptotene spermatocytes all express high levels of nuclear protein, while the protein is not detected in pachytene spermatocytes, despite the fact they expressed high levels of mRNA. In females, the protein is not detected in non- growing oocytes, in contrast to the growing oocytes. During the growing, the protein is no longer detectable in nuclei but accumulates to very high levels first throughout the cytoplasm. At the time of ovulation, all the protein is cytoplasmic and is actively associated with the oocyte cortex. After fecondation, in the preimplantation embryo, the protein remains cytoplasmic and after implantation, it is exclusively nuclear in all tissue types. Isoform 2 is sequestered in the cytoplasm of maturing oocytes and of preimplantation embryos, except for the 8-cell stage, while

isoform 1 is exclusively nuclear

Tissue Location
Isoform 1 is expressed in embryonic stem cells and in somatic tissues. Isoform 2 is expressed in oocytes, preimplantation embryos, testis and in skeletal muscle during myogenesis

(Mouse) Dnmt1 Blocking Peptide (Center) - Protocols

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

- Blocking Peptides