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Recombinant Human DNMT1 Protein

Catalog No.: RP01868LQ Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Human	1786	P26358-2

Tags
C-His

Synonyms
DNMT1; AIM; CXXC9; DNMT;DNA (cytosine-5)-methyltransferase 1; Dnmt1; 2.1.1.37; CXXC-type zinc finger protein 9; DNA methyltransferase HsaI; DNA MTase HsaI; M.HsaI; MCMT

Product Information

Source
HEK293 cells

Purification
≥ 85% as determined by SDS-PAGE.

Calculated MW
185.53 kDa

Observed MW
250-280 kDa

Endotoxin
< 1 EU/μg of the protein by LAL method.

Formulation
Supplied as 0.22 μm filtered solution in 25mM Hepes-NaOH,500mM NaCl,0.04%, tritonX 100, 0.5mM TCEP, 10%glycerol,pH7.5.

Reconstitution

Contact

400-999-6126

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Background

DNMT1 (DNA (Cytosine-5-)-Methyltransferase 1) proteins are involved in DNA methylation in which a methyl group is added to a cytosine residue on DNA, commonly at the C5 position of a CpG dinucleotide. Three families of DNMTs have been identified: DNMT1, DNMT2, and DNMT3 (comprised of DNMT3A and DNMT3B).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.

Basic Information

Description
Recombinant Human DNMT1 Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Pro2-Asp1632) of Human DNMT1 (Accession #NP_001124295.1) fused with a His tag at the C-terminus.

Bio-Activity
The 42 base pair of DNA duplex containing three hemimethylation sites (2.5 μM) was methylated with the recombinant DNMT1 (0.18 mg/mL) including 20 μM SAM in reaction buffer (20 mM Tris-HCl [pH 8.0], 50 mM NaCl, 1 mM EDTA, 3 mM MgCl2, 0.1 mg/mL BSA, and 1 mM DTT) at 37 °C for 1 hr. Then methyltransferase assay was performed using MTase-Glo™ Methyltransferase Assay (Promega, V7601). Enzyme 1-4 represent RP01868LQ, Enzyme 5-8 represent recombinant DNMT1 with a 6×His tag at the N-terminus. (Customer feedback data)

Shipping
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Storage
Store at -70℃. This product is stable at ≤ -70℃ for up to 1 year from the date of receipt. For optimal storage, aliquot into smaller quantities after centrifugation and store at recommended temperature. Avoid repeated freeze-thaw cycles.
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Operational Notes
For your safety and health, please wear a lab coat and disposable gloves for handling.

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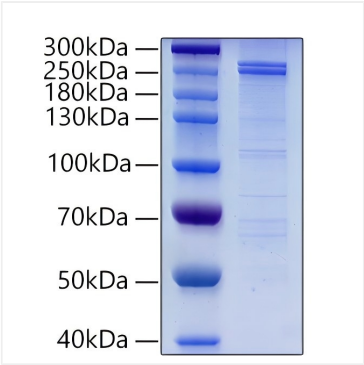
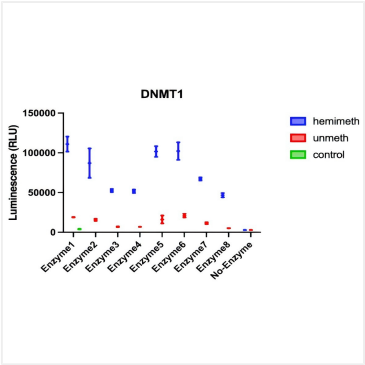
Validation Data



Recombinant Human DNMT1 Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.



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