

# Active Recombinant Full Length Human DNMT1 Protein, C-Flag-tagged

Cat. No. DNMT1-201HFL Lot. No. (See product label)

## SPECIFICATION

### Product Overview

Recombinant Full Length Human DNMT1 Protein, fused to Flag-tag at C-terminus, was expressed in Mammalian cells.

### Species

Human

### Source

Mammalian Cells

### Description

This gene encodes an enzyme that transfers methyl groups to cytosine nucleotides of genomic DNA. This protein is the major enzyme responsible for maintaining methylation patterns following DNA replication and shows a preference for hemi-methylated DNA. Methylation of DNA is an important component of mammalian epigenetic gene regulation. Aberrant methylation patterns are found in human tumors and associated with developmental abnormalities. Variation in this gene has been associated with cerebellar ataxia, deafness, and narcolepsy, and neuropathy, hereditary sensory, type IE. Alternative splicing results in multiple transcript variants.

### Form

25 mM Tris HCl, pH 7.3, 100 mM glycine, 10% glycerol.

### Bio-activity

DNMT1 activity verified in a biochemical assay: DNMT1 (DNA (cytosine-5-)-methyltransferase 1) is a key methyltransferase that is responsible for maintaining methylation patterns established in development. DNMT1 preferentially methylates hemi-methylated CpG di-nucleotides and associates with DNA replication sites in S phase maintaining the methylation pattern in the newly synthesized strand. Varying concentrations of

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DNMT1 were added to a microplate containing a bound methyltransferase substrate. After incubation, the resulting methylated DNA residues were detected immunologically and a colorimetric signal was generated and measured.

**Molecular Mass** 184.6 kDa

**AA Sequence**

MPARTAPARVPTLAVPAISLPDDVRRRLKDLERDSLTEKECVKEKLNLLHEFLQTEIK  
 NQLCDLETCLRK EELSEEGYLAKVKSLLNKDLSLENGAHAYNREVNGRLENGNQAR  
 SEARRVGMADANSPPKPLSKPRTPRR SKSDGEAKRSRDPASASQVTGIRAEPSP  
 SPRITRKSTRQTTITSHFAKGPAPKRPQEESEKAKSDESIK EEDKDQDEKRRRVTSR  
 ERVARPLPAEPPERAKSGTRTEKEEERDEKEEKRLRSQTKEPTKQKLKEEPDR EA  
 RAGVQADEDEDGDEKDEKKHRSQPKDLAAKRRPEEKEPEKVNQISDEKDEDEKE  
 EKRRKTTPEKTE KKMARAKTVMNSKTHPPKCIQCGQYLDDPDLKYGQHPPDAVD  
 EPQMLTNEKLSIFDANESGFESYEALPQ HKLTCFSVYCKHGHLCPIDTGLIEKNIELF  
 FSGSAKPIYDDDPSLEGGVNGKNLGPINEWWITGFDGGEK ALIGFSTSFAYEYILMDP  
 SPEYAPIFGLMQEKIYISKIVVEFLQSNSTYEDLINKIETTVPSPGLNLNR FTEDSLL  
 RHAQFVVEQVESYDEAGDSDEQPIFLTPCMRDLIKLAGVTLGQRRRAQARRQTIRHST  
 REKDRG PTKATTTKLVYQIFDFFAEQIEKDDREDKENAFKRRRCGVCEVCQQPEC  
 GKCKACKDMVKFGGSGRSKQ ACQERRCPNMAMKEADDDEEVDNIPEMPSPKK  
 MHQGKKKKQKNRISWVGEAVKTDGKKSYYKVCIDA ETLEVGDCVSVIPDDSSKP  
 LYLARVTALWEDSSNGQMFHAHWFCAGTDTVLGATSDPLELFLVDECEDMQ LSYI  
 HSKVKVIYKAPSENWAMEGGMDPESLLEGDDGKTYFYQLWYDQDYARFESPPKTQ  
 PTEDNKFKFCV SCARLAEMRQKEIPRVLEQLEDLDSRVLYYSATKNGILYRVGDGV  
 YLPPEAFTFNIKLSPPVKRPRKEPV DEDLYPEHYRKYSYIKGSNLDAPEPYRIGRIK  
 EIFCPKKSNGRPNETDIKIRVNKFYRPENTHKSTPAS YHADINLLYWSDEEAVVDFK  
 AVQGRCTVEYGEDLPECVQVYSMGGPNRFYFLEAYNAKSKSFEDPPNHAR SPGN  
 KGKGGKGGKPKSQACEPSEPEIEIKLPKLRTLDFVSGCGGLSEGFHQAGISDTLW  
 AIEMWDPAA QAFRLNPNGSTVFTEDCNILLKLMAGETTNSRGQRLPQKGDVEML  
 CGGPPCQGFSGMNRFNSTRYSKFK NSLVVSFLSYCDYYRPFLLNVNRFVFSFK  
 RSMVLKLTLRCLVRMGYQCTFGVLQAGQYGVAQTRRAI ILAAAPGEKLPFPPEPL

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HVFAPRACQLSVVVDDKKFVSNITRLSSGPFRTITVRDTMSDLPEVRNGASAL EISY  
 NGEPQSWFQRQLRGAQYQPILRDHICKDMSALVAARMRHIPLAPGSDWRDLPNIEV  
 RLSDGTMARK LRYTHHDRKNGRSSSSGALRGVCSCVEAGKACDPAARQFNTLIPWC  
 LPHTGNRHNHWAGLYGRLEWDGFFS TTVTNPEPMGKQGRVLHPEQHRVVSVREC  
 ARSQGFDPDYRLFGNILDKHRQVGNAVPPPLAKAIGLEIKL  
 CMLAKARESASAKIKEEEAAKDTRTRPLEQKLISEEDLAANDILDYKDDDDKV

<b>Purity</b>	> 80% as determined by SDS-PAGE and Coomassie blue staining.
<b>Stability</b>	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
<b>Storage</b>	Store at -80 centigrade.
<b>Concentration</b>	>50 ug/mL as determined by microplate BCA method.
<b>Preparation</b>	Recombinant protein was captured through anti-DDK affinity column followed by conventional chromatography steps.
<b>Protein Families</b>	Druggable Genome, Transcription Factors
<b>Protein Pathways</b>	Cysteine and methionine metabolism, Metabolic pathways
<b>Full Length</b>	Full L.

## GENE INFORMATION

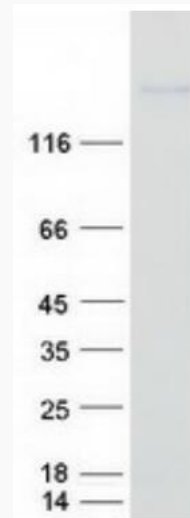
<b>Gene Name</b>	DNMT1 DNA methyltransferase 1 [ Homo sapiens (human) ]
<b>Official Symbol</b>	DNMT1

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<b>Synonyms</b>	AIM; DNMT; MCMT; CXXC9; HSN1E; ADCADN; m.Hsal
<b>Gene ID</b>	1786
<b>mRNA Refseq</b>	NM_001130823.3
<b>Protein Refseq</b>	NP_001124295.1
<b>MIM</b>	126375
<b>UniProt ID</b>	P26358



Coomassie blue staining of purified DNMT1 protein.

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