

## Product datasheet for MC224751

### Dnmt1 (NM\_010066) Mouse Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Dnmt1 (NM_010066) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Dnmt1
Synonyms:	Cxxc9; Dnmt; Dnmt1o; m.Mmul; MCMT; Met-1; Met1; MommeD; MommeD2; MTa; MTase
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>MC224751 representing NM_010066 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGCCAGCGGAACAGCTCCAGCCGAGTGCCTGCGCTTGCCTCCCCGGCAGGCTCGCTCCCGGACCATG  
TCCGCAGGCGGCTCAAAGACTTGGAAAGAGATGGCTTAACAGAAAAGGAGTGTGTGAGGGAGAAATTA  
CTTACTGCATGAATTCCTGCAAACAGAAATAAAAAGCCAGTTGTGTGACTTGGAAACCAATTACATAAA  
GAGGAATTATCTGAGGAAGGCTACCTGGCTAAAGTCAAGTCCCTCTAAATAAGGATTTGCCTTGGAGA  
ACGGAACACACTCTCACTCAAAAAGCCAACGGTTGTCCGCCAACGGGAGCCGGCCAACCTGGAGAGC  
AGAAATGGCAGACTCAAATAGATCCCCAAGATCCAGGCCAAGCCTCGGGGACCCAGGAGAAGCAAGTCCG  
GACAGTGACACCCTTTTTGAACCTTACCTAGTTCCTGGCTACGAGGAGAACCCAGGAGACCCACCA  
TCACGGCTCACTTCACGAAGGGCCCCACTAAACGGAAACCAAGGAAGAGTCGGAAGAGGGGAACTCGGC  
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GCTGCTGTGGAGAACTGGAAGAGGTAACAGCGGGAACCCAGCTGGGTCCGGAAGAGCCATGTGAACAGG  
AAGATGACAACAGGAGTCTTCGACGTACACCAGAGAGCTATCATTGAGGCGGAAATCAAAGGAGGATCC  
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CTCCAGAGACTCCCGAGGACAGAGACGAGGATGAGAGGGAGGAGAAGAGACGAAAAACGACACGTAAAAA  
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CCGAAGATCAACTACCAAAGTGCCCGAGTGTGGCCAGCACCTAGACGACCCTAACCTGAAGTACCAGC  
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CGCGGGCACCTGTGCTGTCGACACCGGTCTCATTGAGAAGATGTAGAGCTCTACTTTCTGGGTGTG  
CCAAAGCAATTCATGACGAGAATCCATCTATGGAAGTGGTATTAATGGCAAAAACCTCGGGCAATCAA  
TCAGTGGTGGCTCAGTGGCTTTGATGGTGGCAGAAGGTGCTCATTGGCTTCTCCACTGCATTTGCTGAA



TACATTTTGATGGAGCCAGCAAAGAGTATGAGCCAATATTTGGGCTGATGCAGGAGAAAAATTTACATCA  
 GCAAGATTGTTGTTGAGTTCCTGCAAAAACATCTGATGCTGTATATGAAGACCTGATCAATAAGATTGA  
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 CCTGTATGAGAGCCCTGATCCATTTGGCTGGTGTCTCCCTGGGACAGAGGCGAGCAACAAGGCGCGTCA  
 GGGTGTACCAAGGAGAAGGACAAGCACCCACGAAAGCCACCACCACCAAGCTGGTCTATCAGATCTTT  
 GACACTTTCTTCTCAGAGCAGATTGAGAAGTATGATAAGGAGGACAAGGAGAATGCCATGAAGCGCCGC  
 GCTGTGGTGTCTGTGAGTCTGTGACGCTGAGTGTGGGAAGTGAAGGCGTGAAGATATGGTGAA  
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 GATTCTCCAAACCCTCTATCTAGCCAGGTCACAGCTCTGTGGGAAGACAAAAATGGTCAGATGATGT  
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 GACCGAGGACAACAAGCACAAGTTCTGCCTATCTTGATCCGGCTGGCTGAGCTGAGACAAAAAGAAATG  
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 CCCCCTGAAACGCCCAAGAAGGATCCTGTGAACGAGACCCTGTACCCTGAGCACTACCGCAAGTATTCT  
 GACTACATCAAGGGGAGCAACCTGGATGCTCCAGAGCCCTATCGCATCGGTGCGATAAAAAGAGATCCACT  
 GTGGCAAGAAGAAGGCAAGGTCAACGAGGCAGACATCAAGCTGAGGCTCTACAAGTTCTACAGGCTGA  
 GAATACCCACAGTCTACAACGGATCCTATCACACTGACATCAACATGCTTTACTGGAGCGACGAGAA  
 GCTGTGGTGAAGTTCAGCGACGTGACGGCCGCTGTACCGTGGAGTACGGGAAGACCTACTTGAGAGCA  
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 CTTTGAAGACCCACCAACCATGCCCGACCCCTGGGAACAAAGGAAAGGGAAGGGGAAAGGGGAAAGGGG  
 AAGGGGAAGCATCAGGTGTGAGACCCAAAGAGCCTGAGGACCCATCAAAGTCCCAAGCTCCGGACCC  
 TGGATGTGTTTTCCGGCTGTGGAGGTTATCGGAAGGATCCACCAAGCAGGCATCTCGGAAACGCTGTG  
 GGCCATCGAGATGTGGACCCGGCAGCCAGGCATTTCCGGCTGAACAACCCGGCACCACAGTGTTCACA  
 GAGGACTGCAACGTGCTTCTTAAGCTGGTATGGCTGGGAGGTGACCACTCTCTGGGCCAAAGGCTGC  
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 CAACTCCCGCACTTACTCCAAGTTCAAAAACCTCCCTAGTGGTCTCCTTCTCAGCTACTGTGACTACTAC  
 CGGCTCGGTTCTTCTTCTGGAGAAGCTCAGGAACCTCGTGTCTACAGACGCTCCATGGTGTGAAGC  
 TCACACTGCGCTGCCTGGTCCGCATGGGCTACCAGTGCACCTTTGGTGTGCTCCAGGCTGGACAGTATGG  
 CGTGGCCAGACACGAAGGAGGGCCATCATCTGGCTGCAGCCCCAGGAGAAAAGCTGCCTCTGTTCCCA  
 GAGCCTCTGCATGTGTTTGCGCCCGTGCCTGCCAGCTGAGCGTTGTGGTGGATGACAAGAAGTTTGTTA  
 GCAACATAACGAGGCTGAGCTCGGGGCCCTCCGAACCATCACCGTGCAGACACCATGTCTGACCTCCC  
 CAGATCCAGAATGGAGCCTCGAATCTGAGATCCCCTACAATGGAGAGCCACTGCTCTGGTCCAGAGG  
 CAGCTGCGAGGATCACACTACCAGCCATCCTCAGGGACCATATCTGCAAGGACATGAGCCCATGGTGG  
 CTGCCCGCATGCGGCACATCCCCTGTTCCAGGATCAGATTGGCGTGACCTGCCAACATACAGGTGCG  
 GCTGGGAGATGGCGTCATAGCCATAAGCTACAGTACACCTTTTATGATGTGAAAAATGGCTACAGCAGC  
 ACCGGTGCCTGCGTGGAGTCTGTTCTGTGCAGAAGGCAAGGCCTGCGACCCCTGAGTCCAGGCAATTCA  
 GCACCCTCATCCCCTGGTGCCTGCCGCACACTGGGAACCGGCACAACCACTGGGCTGGCCTCTACGGGCG  
 TCTGGAGTGGGATGGCTTCTCAGCACCCTGTACCAACCCTGAGCCCATGGGCAAGCAGGCTCGGGTG  
 CTCACCCCGAGCAGCACCAGGTCGTGAGTGTTCGGGAATGTGCCGCTCCAGGGCTTTCCAGATAGCT  
 ACCGGTCTTCCGCAACATCCTGGACAGACACCGGCAGGTGGGTAAATGCTGTGCCACCACCCTGGCCAA  
 AGCCATTGGCCTGGAGATTAAGCTCTGCCTGCTGTCCAGTGTCCGGAGAGCGCATCAGTGCAGTTAA  
 GCAAAAGAGGAGGCTGCTACCAAGGACTAG

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

<b>Restriction Sites:</b>	Sgfl-Mlul
<b>ACCN:</b>	NM_010066
<b>Insert Size:</b>	4860 bp
<b>OTI Disclaimer:</b>	<p>Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. <a href="#">More info</a></p>
<b>Components:</b>	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li> </ol>
<b>RefSeq:</b>	<a href="#">NM_010066.4</a> , <a href="#">NP_034196.5</a>
<b>RefSeq Size:</b>	5367 bp
<b>RefSeq ORF:</b>	4860 bp
<b>Locus ID:</b>	13433
<b>UniProt ID:</b>	<a href="#">P13864</a>
<b>Cytogenetics:</b>	9 7.66 cM

**Gene Summary:**

This gene encodes a methyltransferase that preferentially methylates cytosines of CpG residues in hemimethylated DNA to generate fully methylated CpG base pairs during DNA replication. This enzyme plays roles in diverse cellular processes including cell cycle regulation, DNA repair, and telomere maintenance. The encoded protein is composed of an N-terminal domain with a nuclear localization sequence and replication fork-targeting domain, a DNA-binding CXXC domain, two bromo-adjacent homology domains, and a C-terminal catalytic domain. Mouse embryonic stem cells mutant for this gene are viable, but when introduced into the germ line, cause a recessive lethal phenotype with mutant embryos displaying stunted growth and developmental defects. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Sep 2015]

Transcript Variant: This variant (2) uses an alternate in-frame splice site in the 5' coding region compared to variant 1. The resulting protein (isoform 2) is one amino acid shorter than isoform 1. This variant has two upstream in-frame AUGs but N-terminal sequencing and western analysis from PMID: 9830015 (Table I and Figure 2) support the use of the third in-frame AUG.