

Product datasheet for **MR230267**

Shmt2 (NM_001252316) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Shmt2 (NM_001252316) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Shmt2
Synonyms:	2700043D08Rik; AA408223; AA986903
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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ORF Nucleotide Sequence:

>MR230267 representing NM_001252316
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCCCGCATCGCC

ATGGTATCCTTCTCTTTGCTTCGGACCACTCGGAGATGTGGTCAGCTGGTCTGCATGGCTGCCCGGGCCC
 AGCACAGCAAGGTGGCCAGACGACAGGCTGGGGAAGCAGCTGGAGGTTGGACGGCCAGGAGAGTTTATC
 AGACAGTGACCTGAGATGTGGGAGCTTCTGCAGAGGGAGAAGGACAGACAGTGTGCGCGCCTGGAGCTC
 ATCGCCTCAGAGAACTTCTGCAGCCGAGCTGCGCTGGAGGCCCTGGGGTCTGTCTCAACAACAAGTACT
 CGGAGGGTTACCTGGCAAGAGATACTACGGAGGAGCGGAAGTGGTGGACGAGATCGAGCTGCTCTGCCA
 GCGCCGGGCTTGAAGCCTTTGACCTGGATCCGGCACAGTGGGAGTCAATGTGCAGCCATACTCAGGG
 TCCCCAGCCAATCTGGCTGCCTATACGGCCCTTCTGCAGCCTCATGATCGAATCATGGGTTGGACCTGC
 CCGATGGGGGCCATCTACCCATGGCTACATGTCTGATGTCAAGCGGATCTCCGCCACATCCATTTTCTT
 CGAGTCTATGCCCTATAAGCTCAATCCCAAACTGGCCTCATCGACTACGACCAGCTGGCGCTGACCGCT
 CGGCTTTTCCGACCGCGCTCATCATAGCTGGCAGAGTGCCTATGCCCGCCTCATTGACTATGCACGCA
 TGAGAGAGGTCTGTGATGAGGTCAAGGCACACCTGCTGGCAGACATGGCCACATCAGTGGCCTGGTGGC
 TGCCAAGGTGATCCCCTCCCCTTTCAAGTACGCGGATGTTGTTACCACCACCACTCACAAGACACTGCGA
 GGGCCAGGTCAGGGCTCATCTTCTACCGGAAGGGAGTACGAACCGTAGACCCCAAGACTGGCAAAGAGA
 TCCCTTATACCTTTGAGGACCGAATCAACTTCGCTGTGTTCCCATCCCTACAGGGTGGCCCCACAACCA
 CGCCATTGCTGCAGTAGCCGTGGCTCTCAAGCAGGCCATGACCCCTATGTTCCGCGAGTACTCCTTACAA
 GTGTGAGGAACGCCAGGCCATGGCTGATGCCCTGCTCAAGCAGGATACTCGCTGGTGTCTGGTGGCA
 CTGACACCCACCTGGTGTGGTGGACCTGCGGCCCAAGGCCTGGATGGAGCCGAGCCGAACCGCTGTT
 GGAACCTGCTCCATCACAGCCAACAAGAACACCTGTCCTGGAGACCGGAGCGCCATTACTCCGGGGGGC
 TTGAGGCTTGGGGCCCCGCGTTGACCTCTCGCCAGTTCGCTGAGGACGACTTCCGTAGAGTCTGCGATT
 TTATCGATGAGGGAGTCAACATTGGCTTGGAGGTGAAGCGCAAGACTGCCAAGCTCCAGGATTTCAAATC
 CTTCTGCTCAAAGACCCAGAGACAAGCCAGCGTTTGGCCAACCTCCGGCAACAGGTGGAACAGTTTGCC
 AGGGGCTTCCCCATGCCTGGATTTGATGAACGT

AGCGGACCGACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>MR230267 representing NM_001252316
 Red=Cloning site Green=Tags(s)

MVSFSLLRTRRCGQLVCMAARAQHSKVAQTQAGEAAGGWTGQESLSDSDPEMWELLQREKDRQCRGLEL
 IASENFCSRAALEALGSCLNNKYSEGYPGKRYYGGAEVVDEIELLCQRRALEAFDLPAQWGVNVQPYSG
 SPANLAAYTALLQPHDRIMGLDLPDGGHLTHGYMSDVKRISATSIFFESMPYKLNPOQGLIDYDQLALTA
 RLFRPRLIIAGTSAYARLIDYARMREVCDEVRAHLLADMAHISGLVAAKVIPSPFKYADVTTTTHTKTLR
 GARSGLIFYRKGVRTVDPKTGKEIPYTFEDRINFVFPVSLQGGPHNHAIAAVAVALKQACTPMFREYSLQ
 VLRNAQAMADALLKRGYSLVSGGTDTHLVLDLRPKGLDGARAERVLELVSITANKNTCPGDRSAITPGG
 LRLGAPALTSRQFREDDFRRVDFIDEGVNIGLEVKRKTAKLQDFKSFLLKDPETSQRLANLRQVQEQFA
 RGFPMPGFDER

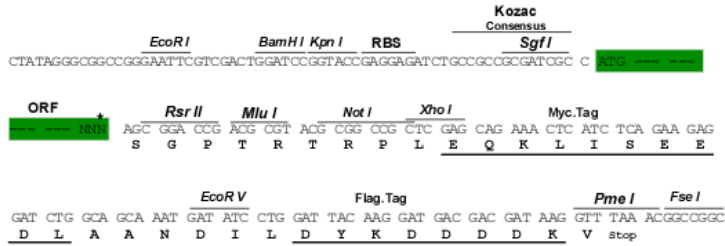
SGPTRTRPLEQKLI SEEDLAANDILDYKDDDDKV

Restriction Sites:

Sgfl-RsrII

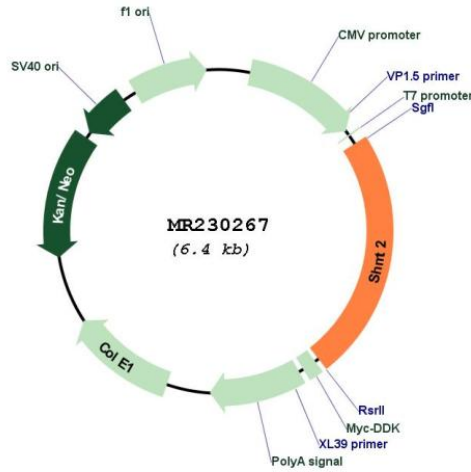
Cloning Scheme:

Cloning sites used for ORF Shuttling:



* The last codon before the Stop codon of the ORF

Plasmid Map:



ACCN: NM_001252316

ORF Size: 1503 bp

OTI Disclaimer: 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. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

Components: 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).

Reconstitution Method:	<ol style="list-style-type: none">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.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.
RefSeq:	<u>NM_001252316.1, NP_001239245.1</u>
RefSeq Size:	2296 bp
RefSeq ORF:	1506 bp
Locus ID:	108037
UniProt ID:	<u>Q9CZN7</u>
Cytogenetics:	10 D3
MW:	55.9 kDa
Gene Summary:	<p>Catalyzes the cleavage of serine to glycine accompanied with the production of 5,10-methylenetetrahydrofolate, an essential intermediate for purine biosynthesis (By similarity). Serine provides the major source of folate one-carbon in cells by catalyzing the transfer of one carbon from serine to tetrahydrofolate (By similarity). Contributes to the de novo mitochondrial thymidylate biosynthesis pathway via its role in glycine and tetrahydrofolate metabolism: thymidylate biosynthesis is required to prevent uracil accumulation in mtDNA (By similarity). Also required for mitochondrial translation by producing 5,10-methylenetetrahydrofolate; 5,10-methylenetetrahydrofolate providing methyl donors to produce the taurinomethyluridine base at the wobble position of some mitochondrial tRNAs (PubMed:29452640). Associates with mitochondrial DNA (By similarity). In addition to its role in mitochondria, also plays a role in the deubiquitination of target proteins as component of the BRISC complex: required for IFNAR1 deubiquitination by the BRISC complex (By similarity). [UniProtKB/Swiss-Prot Function]</p>