

Product datasheet for **RG230153**

SHMT2 (NM_001166359) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	SHMT2 (NM_001166359) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	SHMT2
Synonyms:	GLYA; HEL-S-51e; NEDCASB; SHMT
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>RG230153 representing NM_001166359
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGCTGTACTTCTTTGTTTTGGGCGGCTCGGCCTCGCAGAGATGTGGCAGCTGGTCAGGATGGCCA
 TTCGGGCTCAGCACAGCAACGCAGCCAGACTCAGACTGGGGAAGCAAACAGGGCTGGACAGGCCAGGA
 GAGCCTGTCGGACAGTGATCCTGAGATGTGGGAGTTGCTGCAGAGGGAGAAGACAGGCAGTGTCGTGGC
 CTGGAGCTCATTGCCTCAGAGAATTCTGCAGCCGAGCTGCGCTGGAGGCCCTGGGGTCTGTCTGAACA
 ACAAGTACTCGGAGGGTTATCCTGGCAAGAGATACTATGGGGGAGCAGAGGTGGTGGATGAAATTGAGCT
 GCTGTGCCAGCGCCGGCCTTGAAGCCTTTGACCTGGATCCTGCACAGTGGGGAGTCAATGTCCAGCCC
 TACTCCGGTCCCAGCCAACCTGGCCGTACACAGCCCTTCTGCAACCTCACGACCGGATCATGGGGC
 TGGACCTGCCGATGGGGCCATCTCACCACGGCTACATGTCTGACGTCAAGCGGATATCAGCCACGTC
 CATCTTCTTCGAGTCTATGCCCTATAAGCTCAACCCAAAACCTGGCCTCATTGACTACAACCAGCTGGCA
 CTGACTGCTCGACTTTTCCGGCCACGGCTCATCATAGCTGGCACCAGCGCCTATGCTCGCCTCATTGACT
 ACGCCCGCATGAGAGAGGTGTGTGATGAAGTCAAAGCACACCTGCTGGCAGACATGGCCACATCAGTGG
 CCTGGTGGCTGCCAAGGTGATCCCTCGCCTTTCAAGCACGCGGACATCGTCACCACCACTACTCACAAG
 ACTCTTCGAGGGGCCAGGTCAGGGCTCATCTTCTACCGAAAGGGGTGAAGGCTGTGGACCCCAAGACTG
 GCCGGGAGATCCCTTACACATTTGAGGACCGAATCAACTTTGCCGTGTTCCCATCCCTGCAGGGGGGCC
 CCACAATCATGCCATTGCTGCAGTAGCTGTGGCCCTAAAGCAGGCCTGCACCCCATGTTCCGGGAGTAC
 TCCCTGCAGGTTCTGAAGAATGCTCGGGCATGGCAGATGCCCTGCTAGAGCGAGGCTACTCACTGGTAT
 CAGGTGGTACTGACAACCACCTGGTGTCTGGTGGACCTGCGGCCCAAGGGCCTGGATGGACCTCGGGTGA
 GCGGGTGTAGAGCTTGTATCCATCACTGCCAACAAAGAACCTGTCTGGAGACCGAAGTGCCATCACA
 CCGGGCGGCTGCGGCTTGGGGCCAGCCTTAACTTCTCGACAGTTCCTGAGGATGACTTCCGGAGAG
 TTGTGGACTTTATAGATGAAGGGTCAACATTGGCTTAGAGGTGAAGAGCAAGACTGCCAAGCTCCAGGA
 TTTCAAATCCTTCTGCTTAAGGACTCAGAAACAAGTCAGCGTCTGGCCAACCTCAGGCAACGGGTGGAG
 CAGTTTGCAGGGCCTTCCCATGCCTGGTTTTGATGAGCAT

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>RG230153 representing NM_001166359
 Red=Cloning site Green=Tags(s)

MLYFSLFWAARPLQRCGQLVRMAIRAQHSNAAQTQTGEANRGWTGQESLSDSDPEMWELLQREKDRQCRG
 LELIASENFCSRAALEALGSCLNNKYSEGYPGKRYYGGAEVVDEIELLCQRRALEAFDLPAQWGVNVQP
 YSGSPANLAVYTTALLQPHDRIMGLDLPDGGHLTHGYMSDVKRISATSIFFESMPYKLNPKTGLIDYNQLA
 LTARLFRPRLIIAGTSAYARLIDYARMREVCDEVKAHLLADMAHISGLVAAKVIPSPFKHADIVTTTTHK
 TLRGARSGLIFYRKGVKAVDPKGTGREIPYTFEDRINFVFPSSLQGGPHNHAIAAVAVALKQACTPMFREY
 SLQVLKNARAMADALLERGYSLVSGGTDNHLVLDLRPKGLDGARAERVLELVSITANKNTCPGDRSAIT
 PGGRLRGAPALTSRQFREDDFRRVVDFIDEGVNIGLEVKSKTAKLQDFKSFLLKDETSQRLANLRQRVE
 QFARAFMPMPGFDEH

TRTRPLE - GFP Tag - V

Restriction Sites:

Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Kozac
Consensus

EcoR I *BamH I* *Kpn I* RBS *Sgf I* *Asc I*

CTATAGGGCGGCCGGGAATTCGTGACTGGATCCGGTACCGAGSAGATCTGCCGCCGATCGCCGGCGCCAGATCT

Hind III *Nhe I* *Rsr II* *Mlu I* *Not I* *Xho I* GFP Tag

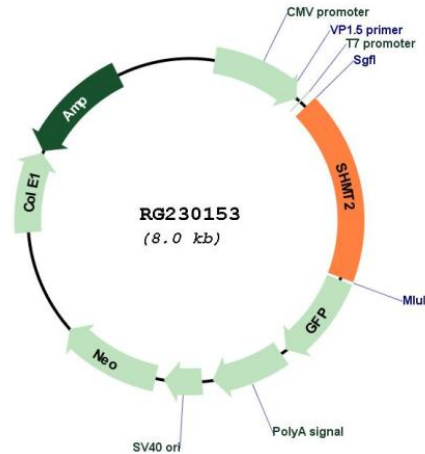
CAAGCTTAAGCTAGCTAGCGGACCG ACG CGT ACG CGG CCG CTC GAG ATG GAG AGC GAC --- --- ---

T R T R P L E M E S D - - -

Pme I *Fse I*

--- --- GAA GAA AGA GTT TAA ACGGCCGGCCGGGAGCT

- - - E E R V Stop

Plasmid Map:


ACCN: NM_001166359

ORF Size: 1515 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:	NM_001166359.1 , NP_001159831.1
RefSeq Size:	2149 bp
RefSeq ORF:	1452 bp
Locus ID:	6472
UniProt ID:	P34897
Cytogenetics:	12q13.3
Protein Pathways:	Cyanoamino acid metabolism, Glycine, serine and threonine metabolism, Metabolic pathways, Methane metabolism, One carbon pool by folate
Gene Summary:	This gene encodes the mitochondrial form of a pyridoxal phosphate-dependent enzyme that catalyzes the reversible reaction of serine and tetrahydrofolate to glycine and 5,10-methylene tetrahydrofolate. The encoded product is primarily responsible for glycine synthesis. The activity of the encoded protein has been suggested to be the primary source of intracellular glycine. The gene which encodes the cytosolic form of this enzyme is located on chromosome 17. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Oct 2009]