

Product datasheet for **RG204814**

Thymidylate Synthase (TYMS) (NM_001071) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Thymidylate Synthase (TYMS) (NM_001071) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Thymidylate Synthase
Synonyms:	HST422; TMS; TS
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG204814 representing NM_001071 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGC**

ATGCCTGTGGCCGGCTCGGAGCTGCCGCGCCGGCCCTTGCCCCCGCCGACAGGAGCGGGACGCCGAGC
CGCGTCCGCCGCACGGGAGCTGCAGTACCTGGGCAGATCCAACACATCCTCCGCTCGGCGTCAGGAA
GGACGACCGCACGGGCACCGGCACCTGTCGGTATTCGGCATGCAGGCGCGCTACAGCCTGAGAGATGAA
TTCCCTCTGCTGACAACAAACGTGTCTGGAAGGGTGTTCGAGGAGTTGCTGTGGTTTATCAAGG
GATCCACAAATGCTAAAGAGCTGTCTTCAAGGGAGTGAAATCTGGGATGCCAATGGATCCCGAGACTT
TTTGGACAGCCTGGGATTCTCCACCAGAGAAGAAGGGGACTTGGGCCAGTTTATGGCTTCCAGTGGAGG
CATTTTGGGGCAGAATACAGAGATATGGAATCAGATTATTCAGGACAGGGAGTTGACCAACTGCAAAGAG
TGATTGACACCATCAAAACCAACCCTGACGACAGAAGAATCATCATGTGCGCTTGAATCCAAGAGATCT
TCCTCTGATGGCGCTGCCTCCATGCCATGCCCTCTGCCAGTTCTATGTGGTGAACAGTGAGCTGTCTGC
CAGCTGTACCAGAGATCGGGAGACATGGGCCTCGGTGTGCCTTCAACATCGCCAGCTACGCCCTGCTCA
CGTACATGATTGCGCACATCACGGGCCTGAAGCCAGGTGACTTTATACACACTTTGGGAGATGCACATAT
TTACCTGAATCACATCGAGCCACTGAAAATTGAGTTTCAAGCTTCAAGCTTTCAGATTGAAGGTACAATCCGC
ATCCAACTATTTAAATGGAATGGCTGTT

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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Protein Sequence: >RG204814 representing NM_001071
 Red=Cloning site Green=Tags(s)

MPVAGSELPRRPLPPAAQERDAEPRPPHGELQYLQIQHILRCGVRKDDRTGTGTLVFGMQARYSLRDE
 FPLLTTRKRVFWKGVLEELLWFIKGSTNAKELSSKGVKIWDANGSRDFLDSLGFSTREEGDLGPVYGFQWR
 HFGAEYRDMESDYSQGVDQLQRVIDTIKTNPDERRIIMCAWNPRDLPLMALPPCHALCQFYVVNSELS
 QLYQRSGDMGLGVFNIASYALLTYMIAHITGLKPGDFIHTLGAHIYLNHIEPLKIQLRQREPRPFKLR
 ILRKVEKIDDFKAEDFQIEGYNPHPTIKMEMAV

TRTRPLE – GFP Tag – V

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_001071

ORF Size: 939 bp

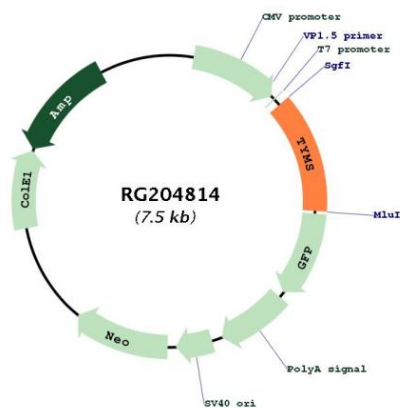
OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

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_001071.4</u>
RefSeq Size:	1536 bp
RefSeq ORF:	942 bp
Locus ID:	7298
UniProt ID:	<u>P04818</u>
Cytogenetics:	18p11.32
Protein Families:	Druggable Genome
Protein Pathways:	Metabolic pathways, One carbon pool by folate, Pyrimidine metabolism
Gene Summary:	Thymidylate synthase catalyzes the methylation of deoxyuridylate to deoxythymidylate using, 10-methylenetetrahydrofolate (methylene-THF) as a cofactor. This function maintains the dTMP (thymidine-5-prime monophosphate) pool critical for DNA replication and repair. The enzyme has been of interest as a target for cancer chemotherapeutic agents. It is considered to be the primary site of action for 5-fluorouracil, 5-fluoro-2-prime-deoxyuridine, and some folate analogs. Expression of this gene and that of a naturally occurring antisense transcript, mitochondrial enolase superfamily member 1 (GeneID:55556), vary inversely when cell-growth progresses from late-log to plateau phase. Polymorphisms in this gene may be associated with etiology of neoplasia, including breast cancer, and response to chemotherapy. [provided by RefSeq, Aug 2017]

Product images:



Circular map for RG204814