

Product datasheet for **RC204814**

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:	Myc-DDK
Symbol:	TYMS
Synonyms:	HST422; TMS; TS
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC204814 representing NM_001071 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGGATCGCC**

ATGCTGTGGCCGGCTCGGAGCTGCCGCGCCGGCCCTTGCCCCCGCCGACAGGAGCGGGACGCCGAGC
CGCGTCCGCCGCACGGGGAGCTGCAGTACCTGGGCAGATCCAACACATCCTCCGCTGCGGCGTCAGGAA
GGACGACCGCACGGGCACCGGCACCCTGTCGGTATTCGGCATGCAGGCGCGCTACAGCCTGAGAGATGAA
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TGATTGACACCATCAAACCAACCCTGACGACAGAAGAATCATCATGTGCGCTTGAATCCAAGAGATCT
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CAGCTGTACCAGAGATCGGGAGACATGGGCCTCGGTGTGCCTTCAACATCGCCAGCTACGCCCTGTCTCA
CGTACATGATTGCGCACATCACGGGCTGAAGCCAGGTGACTTTATACACTTTGGGAGATGCACATAT
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ATTCTTCGAAAAGTTGAGAAAATTGATGACTTCAAAGCTGAAGACTTTTCAAGGTTACAATCCG
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ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
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Protein Sequence: >RC204814 representing NM_001071
Red=Cloning site Green=Tags(s)

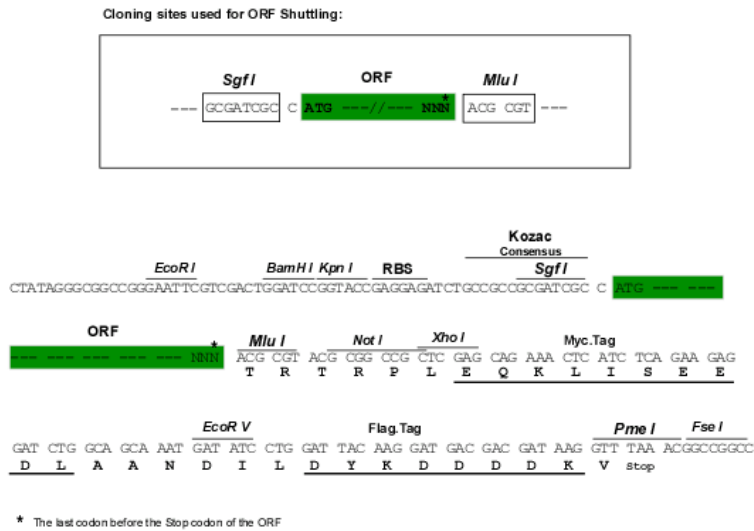
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 HFGAEYRDMESDYSGQVDQLQRVIDTIKTNPDDRRRIIMCAWNPRDLPLMALPPCHALCQFYVNVSELSC
 QLYQRSGDMGLGVPFNIAASYALLTYMIAHITGLKPGDFIHTLGDAAHIYLNHIEPLKIQLQREPRPFKLR
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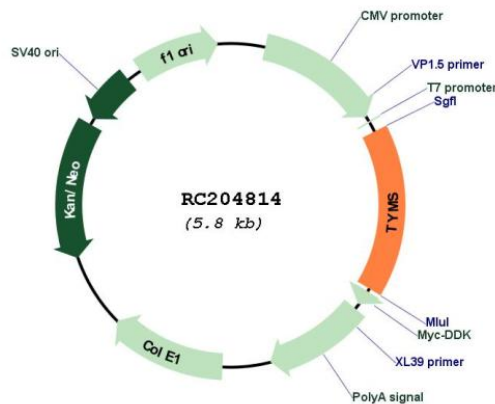
Chromatograms: https://cdn.origene.com/chromatograms/mg4345_g06.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



Plasmid Map:

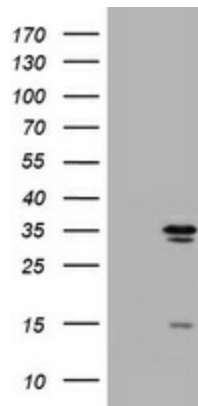


ACCN: NM_001071

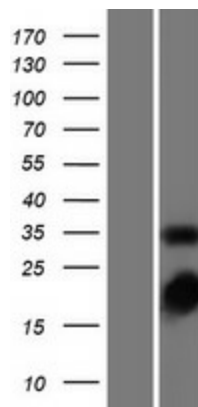
ORF Size:	939 bp
OTI Disclaimer:	<p>Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional 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 custsupport@origene.com 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. More info</p>
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_001071.4
RefSeq Size:	1536 bp
RefSeq ORF:	942 bp
Locus ID:	7298
UniProt ID:	P04818
Cytogenetics:	18p11.32
Protein Families:	Druggable Genome
Protein Pathways:	Metabolic pathways, One carbon pool by folate, Pyrimidine metabolism
MW:	35.5 kDa

Gene Summary:

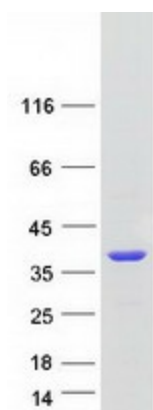
Thymidylate synthase catalyzes the methylation of deoxyuridylate to deoxythymidylate using 10-methylenetetrahydrofolate (methylene-THF) as a cofactor. This function maintains the dTMP (thymidine-5-prime monophosphate) pool critical for DNA replication and repair. The enzyme has been of interest as a 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:


HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY TYMS (Cat# RC204814, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-TYMS (Cat# [TA801551]). Positive lysates [LY420700] (100ug) and [LC420700] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY420700]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC204814 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified TYMS protein (Cat# [TP304814]). The protein was produced from HEK293T cells transfected with TYMS cDNA clone (Cat# RC204814) using MegaTran 2.0 (Cat# [TT210002]).