

Recombinant Full Length Human Thymidylate Synthase, His tagged

Cat. No. TYMS-490H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human Thymidylate synthase protein, fused to His-tag at N-terminus, was expressed in <i>E.coli</i> and purified by using conventional chromatography techniques.
Species	Human
Source	E.coli
Protein Length	1-313 a.a.
Description	Thymidylate synthase is an intracellular enzyme critical for de novo synthesis of DNA. This function maintains the dTMP(thymidine-5-prime monophosphate) pool critical for DNA replication and repair. In cancer, expression of this protein is often elevated and becomes further elevated as a result of treatment with the most commonly used chemotherapeutic, 5-fluorouracil (5-FU). Resistance or lack of response to 5-FU is attributed to the elevation of thymidylate synthase activity.
Sequences of amino acids	MGSSHHHHHH SSGLVPRGSH MPVAGSELPR RPLPPAAQER DAEPRPPHGE LQYLGQIQHI LRCGVRKDDR TGTGTL SVFG MQARYSLRDE FPLLTTRVF WKG VLEELLW FIKGSTNAKE LSSKG VKIWD ANGSRD FLDS LGFSTREEGD LGPVYGFQWR HFGAEYRDME SDYSGQGVDQ LQRVIDTIKT NPDDRRIIMC AWNPRDLPLM ALPPCHALCQ FYVVNSELSC QLYQRSGDMG LGVPFN IASY ALLTYMIAHI TGLKPGDFIH TLGDAHIYLN HIEPLK IQLQ REPRPF PKLR

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ILRKVEKIDD FKAEDFQIEG YNPHTIKME MAV

Form	Liquid. In 20 mM Tris-HCl buffer (pH8.0) containing 1mM DTT 10% glycerol
Molecular Weight	37.8 kDa (333aa)
Purity	> 95% by SDS - PAGE
Concentration	1 mg/ml (determined by Bradford assay)
Storage	Can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C. Avoid repeated freezing and thawing cycles.
Pathways	Metabolic pathways; One carbon pool by folate; Pyrimidine metabolism; Cell Cycle, Mitotic; Metabolism of nucleotides.

GENE INFORMATION

Gene Name	TYMS thymidylate synthetase [Homo sapiens]
Synonyms	TYMS; TS; HsT422; MGC88736; TMS; TSase; thymidylate synthetase; HST422; MGC88736; EC 2.1.1.45; Tsase.
Gene ID	7298
mRNA Refseq	NM_001071
Protein Refseq	NP_001062
MIM	188350

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UniProt ID	P04818
Chromosome Location	18p11.32
Function	cofactor binding; methyltransferase activity; nucleotide binding; thymidylate synthase activity; transferase activity.
Ribbon diagram of human thymidylate synthetase in complex with dUMP (orange) and raltitrexed (lime green). From PDB 1HVY. Available structures 1hvy, 1hw3, 1hw4, 1hzw, 1i00, 1ju6, 1juj, 1ypv, 2onb	

