

Product datasheet for **RC200297**

MTHFD1 (NM_005956) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	MTHFD1 (NM_005956) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	MTHFD1
Synonyms:	CIMAH; MTHFC; MTHFD
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>RC200297 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGGCGCCAGCAGAAATCCTGAACGGGAAGGAGATCTCCGCGCAAATAAGGGCGAGACTGAAAAATCAAG
 TCACTCAGTTGAAGGAGCAAGTACCTGGTTTCACACCACGCTGGCAATATTACAGGTTGGCAACAGAGA
 TGATTCCAATCTTTATATAAATGTGAAGCTGAAGGCTGCTGAAGAGATTGGGATCAAAGCCACTCACATT
 AAGTTACCAAGAACAACCACAGAATCTGAGGTGATGAAGTACATTACATCTTTGAATGAAGACTCTACTG
 TACATGGGTTCTTAGTGCAGCTACCTTTAGATTACAGAAATCCATTAACACTGAAGAAGTGATCAATGC
 TATTGCACCCGAGAAGGATGTGGATGGATTGACTAGCATCAATGCTGGGAGACTTGCTAGAGGTGACCTC
 AATGACTGTTTCATTCTGTACGCTAAGGGATGCTTGAAGTCAATCAAAGAGACAGGGGTGCCGATTG
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 ATCCTGGTGGTTGCAACTGGTACGCTGAAATGGTTAAAGGGGAGTGGATCAAACCTGGGCAATAGTCA
 TCGACTGTGGAATCAATTATGTCCCAGATGATAAAAAACCAAATGGGAGAAAAAGTTGTGGGTGATGTGGC
 ATACGACGAGGCCAAAGAGAGGGCGAGCTTCATCACTCCTGTTCTGGCGCGTAGGGCCATGACAGTT
 GCAATGCTCATGCAGAGCACAGTAGAGAGTGCCAAAGCCTTCTGGAGAAATTAAGCCAGGAAAGTGGA
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 ACCGAAGCCATTGGTAAGCTGGCTCGAGAAATGGTCTGCTGTCTGAAGAGGTAGAATTATGGTGAA
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 GTGCCCTTAGCCCTGGCTCAGGCCGTCCAGAGAGCAGCACAAGCACCCAGCAGCTTCCAGCTCCTTTATGA
 CCTCAAGCTCCCAGTTGAGGATAAAATCAGGATCATTGCACAGAAGATCTATGGAGCAGATGACATTGAA
 TTACTTCCCGAAGCTCAACACAAAGCTGAAGTCTACACGAAGCAGGGCTTTGGGAATCTCCCATCTGCA
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 CATTTCGCGACATCCGCGCCAGCCTGGGGCTGGTTTTCTGTACCCCTTAGTAGGAACGATGACACAATG
 CCTGGACTCCCCACCCGGCCCTGTTTTATGATATTGATTTGGACCCTGAAACAGAACAGGTGAATGGAT
 TATTC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RC200297 protein sequence
 Red=Cloning site Green=Tags(s)

MAPAEILNGKEISAQIRARLKNQVTQLKEQVPGFTPRLA ILQVGNRDDS NLYINVKLKAAEEIGIKATHI
 KLPRTTTESEVMKYITSLNEDSTVHGFLVQLPLDSENSINTEEVINAI APEKDV DGLT SINAGRLARGDL
 NDCFIPCTPKGCLELIKETGVPIAGRHAVVVGRSKIVGAPMHDLLLWNNATVTTCHSKTAHLDEEVNKGD
 ILVVATGQPEMVKGEWIKPGAIVIDCGINYPDDKKPNGRKVVDVAYDEAKERASFITPVPGGVPMTV
 AMLMQSTVESAKRFLEKFKPGKWIQYNNLNLKTPVPSDIDISRSCPKPIGKLAREIGLLSEEVELYGE
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 KGGAAGGYSQVIPMEEFNLHLTGDIHAITAANNLVAAAIDARIFHELTQTDKALFNRLVPSVNGVRRFS
 DIQIRRLKRLGIEKTDPTTLTDEEINRFARLDIDPETITWQRVLDTDRFLRKITIGQAPTEKGHTRTAQ
 FDISVASEIMAVLALTTSL EDMRERLGMVVASSKKGEPVSAEDLGVSGALTVLMKDAIKPNLMQTLEGT
 PVFVHAGPFI ANIAHGNSIIADQIALKLVGPEGFVVTEAGFGADIGMEKFFNIKCRYSLCPHVVLVAT
 VRALKMHGGGPTV TAGLPLPKAYIQENLELVEKGF SNLKKQIENARMFGIPVVAVNAFKTDTSELDLI
 SRLSREHGAFDAVKCTHWAEGGKALALAQAVQRAAQAPSSFQLLYDLKLPVEDKIRIIAQKIYGADDIE
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 PGLPTRPCFYDIDLDPETE QVNGLF

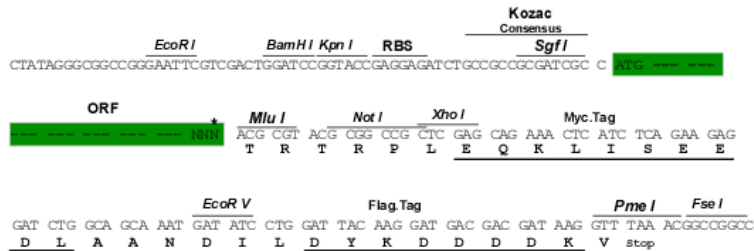
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6691_g01.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



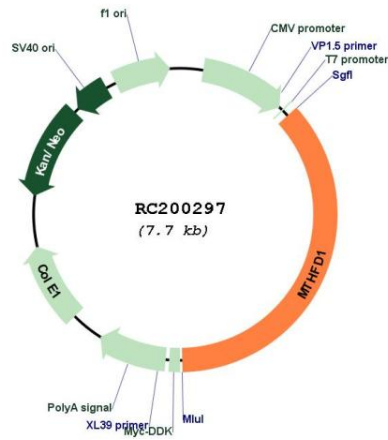
* The last codon before the Stop codon of the ORF

ACCN: NM_005956

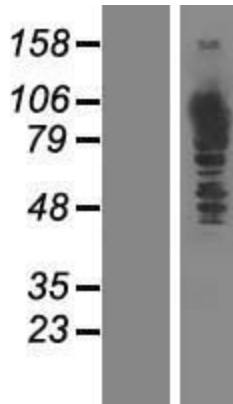
ORF Size: 2805 bp

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.
Note:	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
RefSeq:	NM_005956.2 , NP_005947.2
RefSeq Size:	3466 bp
RefSeq ORF:	2808 bp
Locus ID:	4522
UniProt ID:	P11586
Cytogenetics:	14q23.3
Domains:	FTHFS, THF_DHG_CYH
Protein Families:	Druggable Genome, Stem cell - Pluripotency
Protein Pathways:	Glyoxylate and dicarboxylate metabolism, Metabolic pathways, One carbon pool by folate
MW:	101.5 kDa
Gene Summary:	This gene encodes a protein that possesses three distinct enzymatic activities, 5,10-methylenetetrahydrofolate dehydrogenase, 5,10-methenyltetrahydrofolate cyclohydrolase and 10-formyltetrahydrofolate synthetase. Each of these activities catalyzes one of three sequential reactions in the interconversion of 1-carbon derivatives of tetrahydrofolate, which are substrates for methionine, thymidylate, and de novo purine syntheses. The trifunctional enzymatic activities are conferred by two major domains, an aminoterminal portion containing the dehydrogenase and cyclohydrolase activities and a larger synthetase domain. [provided by RefSeq, Jul 2008]

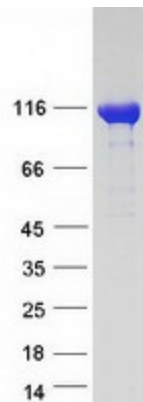
Product images:



Circular map for RC200297



Western blot validation of overexpression lysate (Cat# [LY416959]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC200297 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified MTHFD1 protein (Cat# [TP300297]). The protein was produced from HEK293T cells transfected with MTHFD1 cDNA clone (Cat# RC200297) using MegaTran 2.0 (Cat# [TT210002]).