

## Product datasheet for RC202143

### MTHFD2 (NM\_006636) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	MTHFD2 (NM_006636) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	MTHFD2
Synonyms:	NMDMC
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC202143 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGCTGCGACTTCTCTAATGTCTGCTTTGGCTGCCCGGCTGCTGCAGCCCGCCACAGCTGCTCCCTTC  
GCCTTCGCCCTTTCCACCTCGCGCAGTTCGAAATGAAGCTGTTGTCATTTCTGGAAGGAACTGGCCCA  
GCAGATCAAGCAGGAAGTGGCGAGGAGGTAGAAGAGTGGGTGGCCTCAGGCAACAAACGCCACACCTG  
AGTGTGATCCTGGTTGGCGAGAATCCTGCAAGTCACTCCTATGTCCTCAACAAAACAGGGCAGCTGCAG  
TTGTGGGAATCAACAGTGAGACAATTATGAAACCAGCTTCAATTTAGAGGAAGAATTGTTGAATTTAAT  
CAATAAACTGAATAATGATGATAATGTAGATGGCCTCCTTGTTGAGTTGCCTCTCCAGAGCATATTGAT  
GAGAGAAGGATCTGCAATGCTGTTTCTCCAGACAAGGATGTTGATGGCTTTCATGTAATTAATGTAGGAC  
GAATGTGTTTGGATCAGTATCCATGTTACCGGCTACTCCATGGGGTGTGTGGGAAATAATCAAGCGAAC  
TGGCATTCCAACCTAGGGAAGAATGTGGTTGTGGCTGGAAGGTCAAAAAACGTTGGAATGCCCATTTGCA  
ATGTTACTGCACACAGATGGGGCGCATGAACGTCCCGGAGGTGATGCCACTGTTACAATATCTCATCGAT  
ATACTCCAAAGAGCAGTTGAAGAAACATACAATCTTGAGATATTGTAATATCTGCTGCAGGTATTCC  
AAATCTGATCACAGCAGATATGATCAAGGAAGGAGCAGCAGTCATTGATGTGGGAATAAATAGAGTTCAC  
GATCCTGTAACGCAACCCAAAGTTGGTTGGAGATGTGGATTTTGAAGGAGTCAGACAAAAAGCTGGGT  
ATATCACTCCAGTTCCTGGAGGTGGGCCCATGACAGTGGCAATGCTAATGAAGAATACCATTATTGC  
TGCAAAAAAGGTGCTGAGGCTTGAAGAGCGAGAAGTGCTGAAGTCTAAAGAGCTTGGGGTAGCCACTAAT

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA



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**Protein Sequence:** >RC202143 protein sequence  
Red=Cloning site Green=Tags(s)

MAATSLMSALAAARLLQPAHSCSLRRLRPFHLAAVRNEAVVISGRKLAQQIKQEVQRQVEEWWASGNKRPHL  
 SVILVGENPASHSYVLNKTRAAAVVGINSETIMKPASISSEELNLINKLNDDNDVGLLVQLPLPEHID  
 ERRICNAVSPDKDVGDFHVINVGRMCLDQYSMLPATPWGWWEIIKRTGIPTLGKNVVVAGRSKNVGMPIA  
 MLLHTDGAHERPGGDATVTISHRYTPKEQLKKHTILADIVI SAAGIPNLITADMIKEGAVIDVGINRVH  
 DPVTAKPKLVGDVDFEGVRQKAGYITPVGVGPMTVAMLKNTIIAAKKVLRLEEREVLKSKELGVATN

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** [https://cdn.origene.com/chromatograms/mk6010\\_e06.zip](https://cdn.origene.com/chromatograms/mk6010_e06.zip)

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_006636

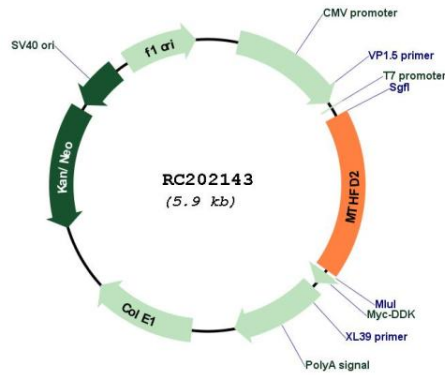
**ORF Size:** 1050 bp

**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](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

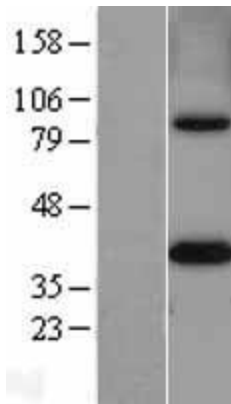
The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>RefSeq:</b>	<a href="#">NM_006636.4</a>
<b>RefSeq Size:</b>	2208 bp
<b>RefSeq ORF:</b>	1053 bp
<b>Locus ID:</b>	10797
<b>UniProt ID:</b>	<a href="#">P13995</a>
<b>Cytogenetics:</b>	2p13.1
<b>Domains:</b>	THF_DHG_CYH
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Glyoxylate and dicarboxylate metabolism, Metabolic pathways, One carbon pool by folate
<b>MW:</b>	37.9 kDa
<b>Gene Summary:</b>	This gene encodes a nuclear-encoded mitochondrial bifunctional enzyme with methylenetetrahydrofolate dehydrogenase and methenyltetrahydrofolate cyclohydrolase activities. The enzyme functions as a homodimer and is unique in its absolute requirement for magnesium and inorganic phosphate. Formation of the enzyme-magnesium complex allows binding of NAD. Alternative splicing results in two different transcripts, one protein-coding and the other not protein-coding. This gene has a pseudogene on chromosome 7. [provided by RefSeq, Mar 2009]

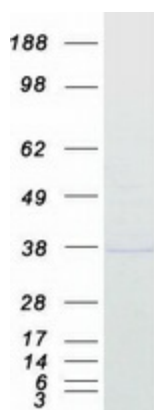
Product images:



Circular map for RC202143



Western blot validation of overexpression lysate (Cat# [LY401984]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC202143 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified MTHFD2 protein (Cat# [TP302143]). The protein was produced from HEK293T cells transfected with MTHFD2 cDNA clone (Cat# RC202143) using MegaTran 2.0 (Cat# [TT210002]).