

## Product datasheet for **RC203095**

### **MTHFD2 (NM\_001040409) Human Tagged ORF Clone**

#### Product data:

Product Type:	Expression Plasmids
Product Name:	MTHFD2 (NM_001040409) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	MTHFD2
Synonyms:	methylenetetrahydrofolate dehydro; methylene tetrahydrofolate dehydrogenase (NAD <sup>+</sup> dependent), methenyltetrahydrofolate cyclohydrolase; methylene tetrahydrofolate dehydrogenase 2; NAD-dependent methylene tetrahydrofolate dehydrogenase cyclohydrolase; NMDMC
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC203095 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGAAACCAGCTTCAATTCAGAGGAAGAATTGTTGAATTTAATCAATAAACTGAATAATGATGATAATG  
TAGATGGCCTCCTTGTTTCAGTTGCCTCTCCAGAGCATATTGATGAGAGAAGGATCTGCAATGCTGTTTC  
TCCAGACAAGGATGTTGATGGCTTTCATGTAATTAATGTAGGACGAATGTGTTTGGATCAGTATTCATG  
TTACCGGCTACTCCATGGGGTGTGTGGAAATAATCAAGCGAACTGGCATTCCAACCTAGGAAGAATG  
TGGTTGTGGCTGGAAGGTCAAAAAACGTTGGAATGCCATTGCAATGTTACTGCACACAGATGGGGCGCA  
TGAACGTCCCGGAGGTGATGCCACTGTTACAATATCTCATCGATATACTCCCAAAGAGCAGTTGAAGAAA  
CATACAATTCTTGCAGATATTGTAATATCTGCTGCAGGTATTCCAAATCTGATCACAGCAGATATGATCA  
AGGAAGGAGCAGCAGTCATTGATGTGGGAATAAATAGAGTTCACGATCCTGTAAGTCCAAACCAAGTT  
GGTTGGAGATGTGGATTTGAAGGAGTCAGACAAAAGCTGGGTATCACTCCAGTTCTGGAGGTGTT  
GGCCCCATGACAGTGGCAATGCTAATGAAGAATACCATTATTGCTCAAAAAAGGTGCTGAGGCTTGAAG  
AGCGAGAAGTCTGAAGTCTAAAGAGCTTGGGGTAGCCACTAAT

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA



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**Protein Sequence:** >RC203095 protein sequence  
Red=Cloning site Green=Tags(s)

MKPASISEEELLNLINKLNDDNDVGLLVQLPLPEHIDERRICNAVSPDKDVDGFHVINVGRMCLDQYSM  
 LPATPWGVWEIIKRTGIPTLGNVAVGRSKNVGMPIAMLLHTDGAHERPGGDATVTISHRYTPKEQLKK  
 HTILADIVISAAGIPNLITADMIKEGAAVIDVGINRVHDPVTAKPKLVGDVDFEGVRQKAGYITPVPGGV  
 GPMTVAMLMKNTIIAAKKVLRLEEREVLKSKELGVATN

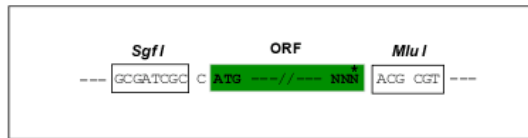
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** [https://cdn.origene.com/chromatograms/mk6550\\_e11.zip](https://cdn.origene.com/chromatograms/mk6550_e11.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\_001040409

**ORF Size:** 744 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:**

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\\_001040409.1](#), [NP\\_001035499.1](#)

**RefSeq Size:** 2306 bp

**RefSeq ORF:** 746 bp

**Locus ID:** 10797

**Cytogenetics:** 2p13.1

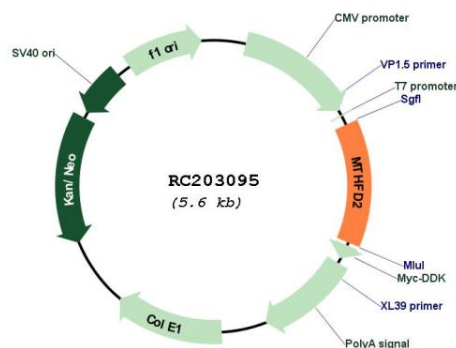
**Protein Families:** Druggable Genome

**Protein Pathways:** Glyoxylate and dicarboxylate metabolism, Metabolic pathways, One carbon pool by folate

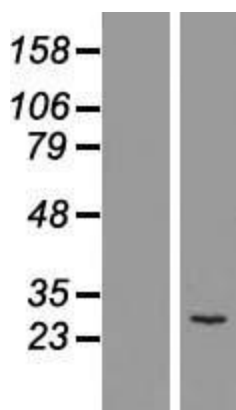
**MW:** 26.8 kDa

**Gene Summary:** 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 RC203095



Western blot validation of overexpression lysate (Cat# [LY421742]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC203095 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).