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Product datasheet for RC223312

Thymidine Kinase 2 (TK2) (NM_004614) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Thymidine Kinase 2 (TK2) (NM_004614) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Thymidine Kinase 2
Synonyms:	MTDPS2; MTTK; PEOB3; SCA31
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

ORF Nucleotide Sequence:

>RC223312 representing NM_004614
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGCTGCTGTGGCCGCTGCGGGGCTGGGCCGCCCGGGCGCTGCGCTGCTTTGGGCCGGGAAGTCGCGGGA
GCCCGGCCTCAGGCCCCGGGCCGCGGAGGGTGCAGCGCCGGGCCTGGCCTCCCGATAAAGAACAGGAAAA
AGAGAAAAAATCAGTGATCTGTGTCGAGGGCAATATTGCAAGTGGGAAGACGACATGCCTGGAATTCTTC
TCCAACGCGACAGACGTCGAGGTGTTAACGGAGCCTGTGTCCAAGTGGAGAAATGTCCGTGGCCACAATC
CTCTGGGCCTGATGTACCACGATGCCTCTCGCTGGGGTCTTACGCTACAGACTTATGTGCAGCTCACCAT
GCTGGACAGGCATACTCGTCCTCAGGTGTCATCTGTACGGTTGATGGAGAGGTCGATTCACAGCGCAAGA
TACATTTTTGTAGAAAACCTGTATAGAAGTGGGAAGATGCCAGAAGTGGACTATGTAGTTCTGTCGGAAT
GGTTTGACTGGATCTTGAGGAACATGGACGTGTCTGTTGATTTGATAGTTTACCTTCGGACCAATCCTGA
GACTTGTTACCAGAGGTTAAAGAAGAGATGCAGGGAAGAGGAGAAGGTCATTCCGCTGGAATACCTGGAA
GCAATTCACCATCTCCATGAGGAGTGGCTCATCAAAGGCAGCCTTTTCCCCATGGCAGCCCCTGTTCTGG
TGATTGAGGCTGACCACCACATGGAGAGGATGTTAGAACTCTTTGAACAAAATCGGGATCGAATATTAAC
TCCAGAGAATCGGAAGCATTGCCCA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

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Protein Sequence:

>RC223312 representing NM_004614
Red=Cloning site Green=Tags(s)

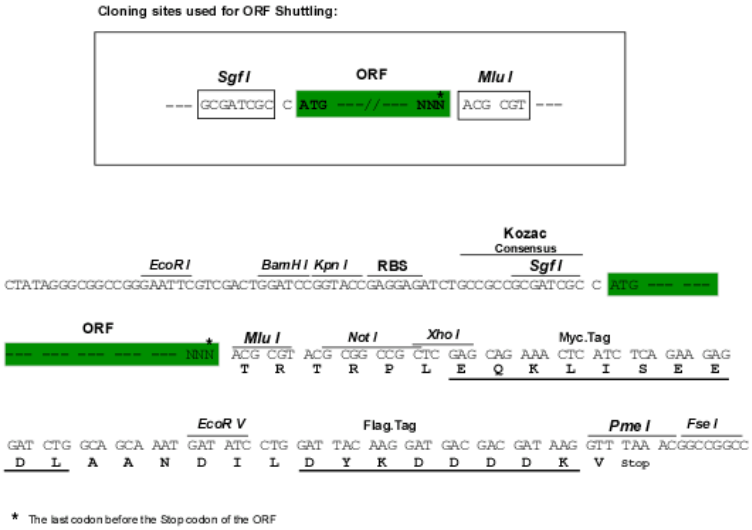
MLLWPLRGWAARALRCFGPGSRGSPASGPGPRRVQRRAWPPDKEQEKEKKSVICVEGNIASGKTTCLEFF
SNATDVEVLTEPVSKWRNVRGHNPLGLMYHDASRWGLTLQTYVQLTMLDRHTRPQVSSVRLMERSIHSAR
YIFVENLYRSGKMPEVDYVVLSEWFDWILRNMDVSVDLIVYLRTNPETCYQRLKKRCREEEKVIPLEYLE
AIHHLHEEWLIKGSLFPMAAPVLVIEADHHMERMLELFEQNRDRILTPENRKHCP

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk8051_h11.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_004614

ORF Size: 795 bp

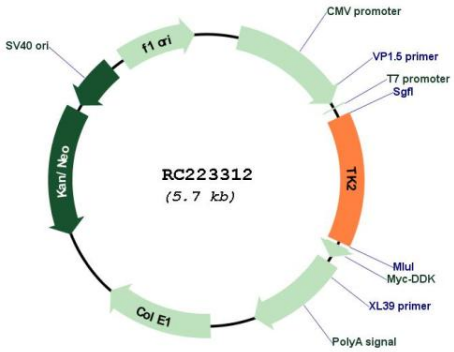
OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA 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 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

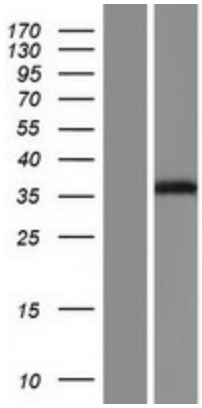
OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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_004614.5
RefSeq Size:	3675 bp
RefSeq ORF:	798 bp
Locus ID:	7084
UniProt ID:	O00142
Cytogenetics:	16q21
Domains:	dNK
Protein Families:	Druggable Genome
Protein Pathways:	Drug metabolism - other enzymes, Metabolic pathways, Pyrimidine metabolism
MW:	31 kDa
Gene Summary:	This gene encodes a deoxyribonucleoside kinase that specifically phosphorylates thymidine, deoxycytidine, and deoxyuridine. The encoded enzyme localizes to the mitochondria and is required for mitochondrial DNA synthesis. Mutations in this gene are associated with a myopathic form of mitochondrial DNA depletion syndrome. Alternate splicing results in multiple transcript variants encoding distinct isoforms, some of which lack transit peptide, so are not localized to mitochondria. [provided by RefSeq, Dec 2012]

Product images:



Circular map for RC223312



Western blot validation of overexpression lysate (Cat# [LY401459]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC223312 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).