

## Product datasheet for **RG223312**

### 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:	TurboGFP
Symbol:	Thymidine Kinase 2
Synonyms:	MTDPS2; MTTK; PEOB3; SCA31
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG223312 representing NM_004614 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGCGACCGGTCTCTTTAAGGGCCAGGCGCCGGGATCCAGGCGGCGCCCAACGGCTGGACTAGCAGTCG  
TCCGCGCCGACTCGCACAAGAAGGAACCCGGGCTCTGGATCCGCTCGCCCGGCTATGCTGCTGTGGCC  
GCTGCGGGGCTGGGCCCGCCGGGCGCTGCGCTGCTTTGGGCGGGAAGTCGCGGGAGCCCGGCTCAGGC  
CCCGGGCCGCGGAGGGTGCAGCGCCGGGCTGGCCTCCCGATAAAGAACAGGAAAAAGAGAAAAATCAG  
TGATCTGTGTCGAGGGCAATATTGCAAGTGGGAAGACGACATGCCTGGAATCTTCTCCAACGCGACAGA  
CGTCGAGGTGTTAACGGAGCCTGTGTCCAAGTGGAGAAAATGTCCGTGGCCACAATCCTCTGGGCCTGATG  
TACCACGATGCCTCTCGCTGGGGTCTTACGCTACAGACTTATGTGCAGCTCACCATGCTGGACAGGCATA  
CTCGTCTCAGGTGCATCTGTACGGTTGATGGAGAGGTCGATTCACAGCGCAAGATACATTTTTGTAGA  
AAACCTGTATAGAAGTGGGAAGATGCCAGAAGTGGACTATGTAGTTCTGTGCGAATGGTTTGACTGGATC  
TTGAGGAACATGGACGTGTCTGTTGATTTGATAGTTTACCTTCGGACCAATCCTGAGACTTGTACCAGA  
GGTTAAAGAAGAGATGCAGGGAAGAGGAGAAGGTCATTCCGCTGGAATACCTGGAAGCAATTCACCATCT  
CCATGAGGAGTGGCTCATCAAAGGCAGCCTTTTCCCATGGCAGCCCCTGTTCTGGTGATTGAGGCTGAC  
CACCACATGGAGAGGATGTTAGAACTCTTTGAACAAAATCGGGATCGAATATTAACCTCCAGAGAATCGGA  
AGCATTGCCCA

**ACGCGT**ACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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**Protein Sequence:** >RG223312 representing NM\_004614  
 Red=Cloning site Green=Tags(s)

MRPGLFKGQAPGSRRRPTAGLAVVRADSHKKEPRASGSARPAMLLWPLRGWAARALRCFGPGSRGSPASG  
 PGPRRVQRRAWPPDKEQEKEKKSVCVEGNIASGKTTCLEFFSNATDVEVLTEPVSKWRNVRGHNPLGLM  
 YHDASRWGLTLQTYVQLTMLDRHTRPQVSSVRLMERSIHSARYIFVENLYRSGKMPEVDYVVLSEWFDWI  
 LRNMDVSVDLIVYLRTNPETCYQRLKKRCREEEKVIPLEYLEAIIHHLHEEWLIKGSFLPMAAPVLVIEAD  
 HHMERMLELFEQNRDRILTPENRKHCP

TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_004614

**ORF Size:** 921 bp

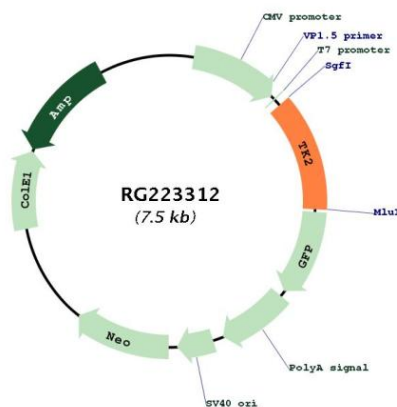
**OTI Disclaimer:** Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of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

**OTI Annotation:** 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>	<u>NM_004614.3</u> , <u>NP_004605.3</u>
<b>RefSeq Size:</b>	3675 bp
<b>RefSeq ORF:</b>	798 bp
<b>Locus ID:</b>	7084
<b>UniProt ID:</b>	<u>O00142</u>
<b>Cytogenetics:</b>	16q21
<b>Domains:</b>	dNK
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Drug metabolism - other enzymes, Metabolic pathways, Pyrimidine metabolism
<b>Gene Summary:</b>	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 RG223312