

## Product datasheet for **RG201278**

### Chk2 (CHEK2) (NM\_007194) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Chk2 (CHEK2) (NM_007194) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Chk2
Synonyms:	CDS1; CHK2; hCds1; HuCds1; LFS2; PP1425; RAD53
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>RG201278 representing NM\_007194  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGTCTCGGGAGTCGGATGTTGAGGCTCAGCAGTCTCATGGCAGCAGTGCCTGTTACAGCCCCATGGCA  
 GGGTTACCCAGTCCCAAGGCTCCTCCTCACAGTCCAGGGCATATCCAGCTCCTCTACCAGCACGATGCC  
 AAACCTCCAGCCAGTCTCTCACTCCAGCTCTGGGACACTGAGCTCCTTAGAGACAGTGTCCACTCAGGAA  
 CTCTATTCTATTCTGAGGACCAAGAACCTGAGGACCAAGAACCTGAGGAGCCTACCCCTGCCCCCTGGG  
 CTCGATTATGGGCCCTTCAGGATGGATTGGCCAACTTGAATGTGTGAATGACAACACTGGTTTGGGAG  
 GGACAAAAGCTGTGAATATTGCTTTGATGAACCACTGCTGAAAAGAACAGATAAATACCGAACATACAGC  
 AAGAAACACTTTCGGATTTTCAGGGAAGTGGTCTAAAACTCTTACATTGCATACATAGAAGATCACA  
 GTGGCAATGGAACCTTTGTAATACAGAGCTTGTAGGAAAGGAAAACGCCGCTCTTTGAATAACAATTC  
 TGAATTGCACTGTCCTAAGCAGAAATAAAGTTTTTGTCTTTTTGATCTGACTGTAGATGATCAGTCA  
 GTTTATCCTAAGGCATTAAGAGATGAATACATCATGTCAAAAACCTTGGAAAGTGGTGCCTGTGGAGAGG  
 TAAAGCTGGCTTTCGAGAGGAAAACATGTAAAGAAAGTAGCCATAAAGATCATCAGCAAAAAGGAAGTTTGC  
 TATTGGTTTTCAGCAAGAGAGGCAGACCCAGCTCTCAATGTTGAAACAGAAATAGAAATTTTAAAAAGCTA  
 AATCATCCTTGCATCATCAAGATTAATAAATTTTTGATGCAGAAGATTATTATATTGTTTTGGAATTGA  
 TGGAAAGGGGAGAGCTGTTTGACAAAAGTGGTGGGAATAAACGCCTGAAAGAAGCTACCTGCAAGCTCTA  
 TTTTTACCAGATGCTCTTGGCTGTGCAGTACCTTCATGAAAACGGTATTATACACCGTGACTTAAAGCCA  
 GAGAATGTTTTACTGTCATCTCAAGAAGAGGACTGTCTATAAAGATTACTGATTTTGGGCACTCCAAGA  
 TTTTGGGAGAGACCTCTCTCATGAGAACCTTATGTGGAACCCCACTACTGGCGCTGAAGTTCTTGT  
 TTCTGTTGGGACTGCTGGGTATAACCGTCTGTGGACTGCTGGAGTTTAGGAGTTATTCTTTTTATCTGC  
 CTTAGTGGGTATCCACCTTCTCTGAGCATAGGACTCAAGTGTCACTGAAGGATCAGATCACAGTGGAA  
 AATACAACCTTATTCTGAAGTCTGGGCAGAAGTCTCAGAGAAAGCTCTGGACCTTGTCAAGAAGTTGTT  
 GGTAGTGGATCCAAAGGCACGTTTTACGACAGAAGAAGCCTTAAGACACCCGTTGGCTTCCAGGATGAAGAC  
 ATGAAGAGAAAGTTTCAAGATCTTCTGTCTGAGGAAAATGAATCCACAGCTCTACCCAGGTTCTAGCCC  
 AGCCTTCTACTAGTCGAAAGCGGCCCGTGAAGGGGAAGCCGAGGGTGCCGAGACCACAAAGCGCCACG  
 TGTGTGTCTGTGTGTTG

**ACGCGTACGCGGCCGCTCGAG** – GFP Tag – GTTTAA

**Protein Sequence:**

>RG201278 representing NM\_007194  
 Red=Cloning site Green=Tags(s)

MSRES DVEAQQSHGSSACSQPHGSVTSQSGSSSSQSQGISSSSTSTMPNSSQSSHSSSGTLLSLETVSTQE  
 LYSIPEDQEPEDQEPEEPTPAPWARLWALQDGFANLECVNDNYWFGDRKSCEYCFDEPLLKRTDKYRTYS  
 KKHFRIFREVGPKNSYIAYIEDHSGNGTFVNTLVGKGRRPLNNSEIALSLRNKVFVFDLTVDDQS  
 VYPKALRDEYIMSKTLGSGACGEVKLAFERKTCKKVAIKIISKRKFAIGSAREADPALNVETEIEILKLL  
 NHPICIIKKNFFDAEDYYIVLELMEGGELFDKVVGNKRLKEATCKLYFYQMLLAVQYLHENGIIHRDLKP  
 ENVLLSSQEEDCLIKITDFGHSKILGETSLMRTLCTPTYLPEVLSVGTAGYNRAVDCWSLGVILFIC  
 LSGYPPFSEHRTQVSLKDQITSGKYNFIPEVWAEVSEKALDLVKKLLVDPKARFTTEEALRHPWLQDED  
 MKRKFQDLLSENESTALPQVLAQPSTSRKRPREGAEGAETTKRPVCAAVL

**TRTRPLE** – GFP Tag – V

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**


**ACCN:** NM\_007194

**ORF Size:** 1629 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](#)

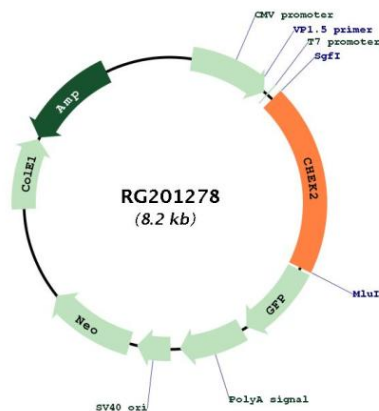
**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**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:	<a href="#">NM_007194.4</a>
RefSeq Size:	1862 bp
RefSeq ORF:	1632 bp
Locus ID:	11200
UniProt ID:	<a href="#">O96017</a>
Cytogenetics:	22q12.1
Domains:	FHA, pkinase, TyrKc, S_TKc
Protein Families:	Druggable Genome, Protein Kinase, Stem cell - Pluripotency
Protein Pathways:	Cell cycle, p53 signaling pathway
Gene Summary:	In response to DNA damage and replication blocks, cell cycle progression is halted through the control of critical cell cycle regulators. The protein encoded by this gene is a cell cycle checkpoint regulator and putative tumor suppressor. It contains a forkhead-associated protein interaction domain essential for activation in response to DNA damage and is rapidly phosphorylated in response to replication blocks and DNA damage. When activated, the encoded protein is known to inhibit CDC25C phosphatase, preventing entry into mitosis, and has been shown to stabilize the tumor suppressor protein p53, leading to cell cycle arrest in G1. In addition, this protein interacts with and phosphorylates BRCA1, allowing BRCA1 to restore survival after DNA damage. Mutations in this gene have been linked with Li-Fraumeni syndrome, a highly penetrant familial cancer phenotype usually associated with inherited mutations in TP53. Also, mutations in this gene are thought to confer a predisposition to sarcomas, breast cancer, and brain tumors. This nuclear protein is a member of the CDS1 subfamily of serine/threonine protein kinases. Several transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Apr 2012]

### Product images:



Circular map for RG201278