

Product datasheet for **MG207630**

Chek1 (NM_007691) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Chek1 (NM_007691) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Chek1
Synonyms:	C85740; Chk1; rad27
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG207630 representing NM_007691
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCAGTGCCTTTTGTGGAAGACTGGGATTTGGTGCAACTTTGGGAGAAGGTGCCTATGGAGAAGTTC
 AACTTGCTGTGAATAGAATAACTGAAGAAGCTGTTGCAGTGAAAATTGTAGACATGAAGCGGCCATAGA
 CTGTCCAGAAAATATTAAGAAAGAGATCTGCATCAATAAAATGTTAAGCCACGAGAAATGTAGTGAATTC
 TATGGCCACAGGAGGGAAGGCCATATCCAGTATCTGTTTCTGGAGTACTGTAGTGGAGGAGAAGCTTTTGG
 ATAGAATTGAGCCAGACATAGGGATGCCTGAACAAGATGCTCAGAGGTTCTCCACCAACTCATGGCAGG
 GGTGGTTTATCTTCATGGAATTGGAATAACTCACAGGGATATTAACCAGAAAACCTCCTCTGGATGAA
 AGGGATAACCTCAAATCTGACTTTGGCTTGGCAACGGTATTCGGCATAATAATCGTGAACGCTTAC
 TGAACAAGATGTGTGGGACTTTACCTTATGTTGCTCCGGAGCTTCTAAAGAGAAAAGAATTCATGCAGA
 ACCAGTTGATGTTTGGTCTGTGGAATAGTACTTACTGCAATGTTGGCTGGAGAATTGCCGTGGGACCAG
 CCCAGTGATAGCTGTCAGGAATATTCTGATTGGAAAGAAAAAACCCTATCTCAATCCTTGAAAAA
 TTGATTCTGCTCCTCTGGCTTGGCTTCAAAAATCTAGTTGAGACTCCATCAGCAAGGATCACCATCCC
 AGACATTAAGAAAGATAGATGGTACAACAACCACTTAACAGAGGAGCAAAGAGGCCACGCGCCACATCA
 GGTGGTATGTCAGAGTCTTCTAGTGGATTCTCTAAGCACATTCATTCCAATTTGGACTTTTCTCCAGTAA
 ATAATGGTTCCAGTGAAGAAACCGTGAAGTTCTCTAGTCCCAGCCAGAGCCGAGAACAGGGCTTTCCTT
 GTGGGACACTGGTCCCTCGAACGTGGACAACTGGTTCAGGGCATCAGTTTTTCCAGCCTACGTGTCCT
 GAGCATATGCTTGTAAACAGTCAGTTACTCGGTACCCCTGGATCTTACAGAACCCTGGCAGCGCTTGG
 TCAAAAGGATGACACGATTCTTTACTAAATGGATGCGGACAAATCTTACCAATGCCTGAAAGAGACCTT
 CGAGAAGTTGGGCTATCAGTGGAAAGAAGAGTTGTATGAATCAGGTTACTGTATCAACAACCTGATAGAAGA
 AACAAAGTTGATTTTCAAATAAATTTGGTAGAAATGGATGAGAAGTACTGGTTGACTTCCGACTTT
 CTAAGGGTATGGATTAGAGTTCAAGAGACACTTCTGAAGATTAAGGGGAGCTCAGCGATGTTGTGAG
 CAGCCAGAAGGTTTGGTTTCTGTTACA

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG207630 representing NM_007691
 Red=Cloning site Green=Tags(s)

MAVPFVEDWDLVQTLGEGAYGEVQLAVNRITEEAVAVKIVDMKRAIDCPENIKKEICINKMLSHENVVKF
 YGHRREGHIQYLFLEYCSGGELFDRIEPDIGMPEQDAQRFFHQLMAGVVYLHGIGITHRDIKPENLLLDE
 RDNLKISDFGLATVFRHNNRERLLNKMCGTLPYVAPELLKRKEFHAEPVDVWSCGIVLTAMLGELPWDQ
 PSDSCQEYSDWKEKKTLYLNPWKIDSAPLALLHKILVETPSARITIPDIKKDRWYNKPLNRGAKRPRATS
 GGMSSESSGFSKHIHNSLDFSPVNNGSSEETVKFSSSQPEPRTGLSLWDTGPSNVDKLVQGISFSQPTCP
 EHMLVNSQLLGTGSSQNPWQRLVKRMTRFFTKLDADKSYQCLKETFEKLG YQWKSCMNQVTVSTTDRR
 NNKLIFKINLVEMDEKILVDFRLSKGDGLEFKRHLKIKGKLSDVVSSQKVFVFPVT

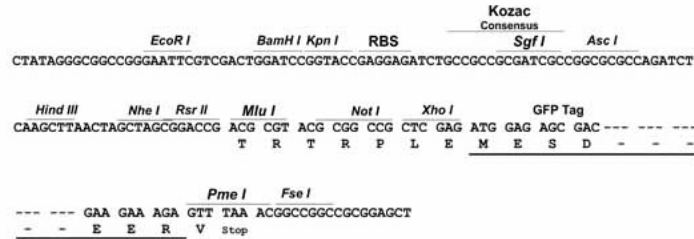
TRTRPLE - GFP Tag - V

Restriction Sites:

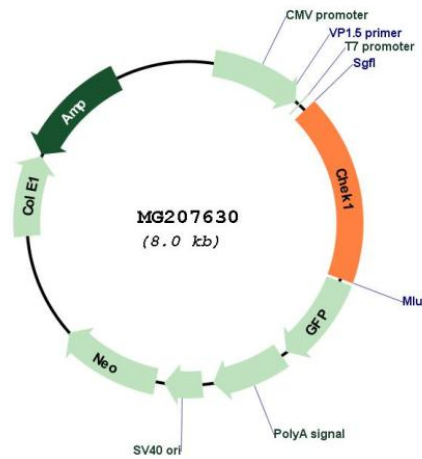
SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:



ACCN: NM_007691
 ORF Size: 1428 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_007691.5](#), [NP_031717.2](#)

RefSeq Size: 3397 bp

RefSeq ORF: 1431 bp

Locus ID: 12649

UniProt ID: [O35280](#)

Cytogenetics: 9 A4

Gene Summary:

Serine/threonine-protein kinase which is required for checkpoint-mediated cell cycle arrest and activation of DNA repair in response to the presence of DNA damage or unreplicated DNA. May also negatively regulate cell cycle progression during unperturbed cell cycles. This regulation is achieved by a number of mechanisms that together help to preserve the integrity of the genome. Recognizes the substrate consensus sequence [R-X-X-S/T]. Binds to and phosphorylates CDC25A, CDC25B and CDC25C. This inhibits their activity through proteasomal degradation, nucleo-cytoplasmic shuttling and inhibition by proteins of the 13-3-3 family. Inhibition of CDC25 leads to increased inhibitory tyrosine phosphorylation of CDK-cyclin complexes and blocks cell cycle progression. Also phosphorylates NEK6. Binds to and phosphorylates RAD51 at 'Thr-309', which promotes the release of RAD51 from BRCA2 and enhances the association of RAD51 with chromatin, thereby promoting DNA repair by homologous recombination. Phosphorylates multiple sites within the C-terminus of TP53, which promotes activation of TP53 by acetylation and promotes cell cycle arrest and suppression of cellular proliferation. Also promotes repair of DNA cross-links through phosphorylation of FANCE. Binds to and phosphorylates TLK1, which prevents the TLK1-dependent phosphorylation of the chromatin assembly factor ASF1A. This may enhance chromatin assembly both in the presence or absence of DNA damage. May also play a role in replication fork maintenance through regulation of PCNA (By similarity). May regulate the transcription of genes that regulate cell-cycle progression through the phosphorylation of histones. Phosphorylates histone H3.1 (to form H3T11ph), which leads to epigenetic inhibition of a subset of genes. May also phosphorylate RB1 to promote its interaction with the E2F family of transcription factors and subsequent cell cycle arrest.[UniProtKB/Swiss-Prot Function]