

## Product datasheet for **SC301015**

### Chk2 (CHEK2) (NM\_001005735) Human Untagged Clone

#### Product data:

|                           |  |
|---------------------------|--|
| Product Type:             | Expression Plasmids                              |
| Product Name:             | Chk2 (CHEK2) (NM_001005735) Human Untagged Clone |
| Tag:                      | Tag Free   |
| Symbol:                   | Chk2   |
| Synonyms:                 | CDS1; CHK2; hCds1; HuCds1; LFS2; PP1425; RAD53   |
| Mammalian Cell Selection: | None   |
| Vector:                   | <u><a href="#">pCMV6-XL5</a></u>                 |
| E. coli Selection:        | Ampicillin (100 ug/mL)                           |



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**Fully Sequenced ORF:** >OriGene ORF sequence for NM\_001005735 edited  
 ATGTCTCGGGAGTCGGATGTTGAGGCTCAGCAGTCTCATGGCAGCAGTGCCTGTTACACAG  
 CCCCATGGCAGCGTTACCCAGTCCCAAGGCTCCTCCTCACAGTCCCAGGGCATATCCAGC  
 TCCTCTACCAGCACGATGCCAACTCCAGCCAGTCTCTCACTCCAGCTCTGGGACACTG  
 AGCTCCTTAGAGACAGTGTCCACTCAGGAACCTATTCTATTCTGAGGACCAAGAACCT  
 GAGGACCAAGAACCTGAGGAGCCTACCCCTGCCCTGGGCTCGATTATGGGCCCTTCAG  
 GATGGATTTGCCAATCTTGAGACAGAGTCTGGCCATGTTACCCAATCTGATCTTGAACCT  
 CTGCTGTATCTGATCCTCCTGCCTCAGCCTCCCAAAGTGTGGGATAAGAGGTGTGAGG  
 CACCATCCCCGGCCAGTTTGCACTCTAAAATGTGTGAATGACAACACTACTGGTTTGGGAGG  
 GACAAAAGCTGTGAATATTGCTTTGATGAACCACTGCTGAAAAGAACAGATAAATACCGA  
 ACATACAGCAAGAAACACTTTTCGGATTTTCAGGGAAAGTGGGCTCTAAAACTCTTACATT  
 GCATACATAGAAGATCACAGTGGCAATGGAACCTTTGTAATACAGAGCTTGTAGGGAAA  
 GGGAAAACGCCGCTCTTTGAATAACAATTCTGAAATGCACTGCTACTAAGCAGAAATAAA  
 GTTTTTGTCTTTTTGATCTGACTGTAGATGATCAGTCAGTTTATCCTAAGGCATTAAGA  
 GATGAATACATCATGTCAAAAACCTTGGAAAGTGGTGCCTGTGGAGAGGTAAGCTGGCT  
 TTTCGAGAGGAAAACATGTAAAGAAAGTAGCCATAAAGATCATCAGCAAAAGGAAAGTTTGT  
 ATTGGTTCAGCAAGAGAGGCAGACCCAGCTCTCAATGTTGAAACAGAAATAGAAATTTTG  
 AAAAGCTAAATCATCTTGCATCATCAAGATTAACCACTTTTTTGTGTCAGAAGATTAT  
 TATATTGTTTTGGAATTGATGGAAGGGGAGAGCTGTTTGACAAAGTGGTGGGAATAAA  
 CGCCTGAAAGAAGCTACCTGCAAGCTCTATTTTTACCAGATGCTCTTGGCTGTGCAGTAC  
 CTTTATGAAAACGGTATTATACACCGTGACTTAAAGCCAGAGAATGTTTTACTGTCATCT  
 CAAGAAGAGGACTGTCTTATAAAGATTACTGATTTTTGGCACTCCAAGATTTTGGGAGAG  
 ACCTCTCATGAGAACCTTATGTGGAACCCCACTACTTGGGCTGAAGTTCTTGT  
 TCTGTTGGGACTGCTGGGTATAACCGTGTGGACTGCTGGAGTTTAGGAGTTATCTT  
 TTTATCTGCCTTGTGGGTATCCACCTTCTCTGAGCATAGGACTCAAGTGTCACTGAAG  
 GATCAGATCACCAGTGGAAAATACAACCTTATTCTGAAGTCTGGGCAGAAGTCTCAGAG  
 AAAGCTCTGGACCTTGTCAAGAAGTTGTTGGTAGTGGATCCAAAGGCACGTTTTACGACA  
 GAAGAAGCCTTAAGACACCCGTGGCTTCAGGATGAAGACATGAAGAGAAAGTTTCAAGAT  
 CTTCTGTCTGAGGAAAATGAATCCACAGCTCTACCCAGGTTCTAGCCAGCCTTCTACT  
 AGTCGAAAGCGGCCCGTGAAGGGGAAGCCGAGGGTGCCGAGACCACAAAGCGCCAGCT  
 GTGTGTGCTGCTGTTGTGA

**5' Read Nucleotide Sequence:** >OriGene 5' read for NM\_001005735 unedited  
 NNGGGTCGGTCATATTTGTATACCATCACTATAGGCGGCCGCGATTTCGGCAGGAGGCTG  
 CGGAGAGTGTGCGGCTCCAGGTGGGCTCACGCGGTCGTGATGTCTCGGGAGTTCGGATGTT  
 GAGGCTCAGCAGTCTCATGGCAGCAGTGCCTGTTACAGCCCCATGGCAGCGTTACCCAG  
 TCCCAAGGCTCCTCCTCACAGTCCCAGGGCATATCCAGTCTCTACCAGCACGATGCCA  
 AACTCCAGCCAGTCTCCTCACTCCAGCTCTGGGACACTGAGCTCCTTAGAGACAGTGTCC  
 ACTCAGGAACTCTATTCTATTCTGAGGACCAAGAACCTGAGGACCAAGAACCTGAGGAG  
 CCTACCCCTGCCCTGGGCTCGATTATGGGCCCTTTCAGGATGGATTTGCCAATCTTGTG  
 ACAGAGTCTGGCCATGTTACCCAATCTGATCTTGAACCTCTGCTGTCATCTGATCCTCCT  
 GCCTCAGCCTCCCAAAGTGTGGGATAAGAGGTGTGAGGCACCATCCCCGGCCAGTTTGC  
 AGTCTAAAATGTGTGAATGACAACACTGTTTGGGAGGGACAAAAGCTGTGAATATTGC  
 TTTGATGAACCACTGCTGANAAGAACAGATAAATACCGAACATACAGCAAGAAACACTTT  
 CGGATTTTCAGGGAAGTGGGCTCTAAAACTCTTACATTGCATACATAGAAGATCACAGT  
 GGCAATGGAACCTTTGTAATACAGAGCTTGTANGGAAAGGAAAACGCCCTCTTTGAAT  
 AACAAATCTGAAATGCACTGCTACTAAGCAGAAATAAAGTTTTTGTCTTTTTTGTCTG  
 ACTGTAGATGATCAGTCAGTTTATCCTAAGGCATTAAGAGATGAATACATCC

**Restriction Sites:** Please inquire  
**ACCN:** NM\_001005735

|                               |  |
|-------------------------------|--|
| <b>Insert Size:</b>           | 2000 bp  |
| <b>OTI Disclaimer:</b>        | <p>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 <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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. <a href="#">More info</a></p> |
| <b>OTI Annotation:</b>        | The open reading frame of this TrueClone was fully sequenced and found to be a perfect match to the protein associated to this reference.  |
| <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><a href="#">NM_001005735.1</a></u> , <u><a href="#">NP_001005735.1</a></u>  |
| <b>RefSeq Size:</b>           | 1991 bp  |
| <b>RefSeq ORF:</b>            | 1761 bp  |
| <b>Locus ID:</b>              | 11200  |
| <b>UniProt ID:</b>            | <u><a href="#">O96017</a></u>  |
| <b>Cytogenetics:</b>          | 22q12.1  |
| <b>Protein Families:</b>      | Druggable Genome, Protein Kinase, Stem cell - Pluripotency   |
| <b>Protein Pathways:</b>      | 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]

Transcript Variant: This variant (3) contains an alternate in-frame exon compared to variant 1. The resulting isoform (c) has the same N- and C-termini but is longer compared to isoform a.