

## Product datasheet for **RC403502**

### MEK2 (MAP2K2) (NM\_030662) Human Mutant ORF Clone

#### Product data:

|                           |   |
|---------------------------|---|
| Product Type:             | Mutant ORF Clones   |
| Product Name:             | MEK2 (MAP2K2) (NM_030662) Human Mutant ORF Clone  |
| Mutation Description:     | K61E  |
| Affected Codon#:          | 61  |
| Affected NT#:             | 181   |
| Nucleotide Mutation:      | MAP2K2 Mutant (K61E), Myc-DDK-tagged ORF clone of Homo sapiens mitogen-activated protein kinase kinase 2 (MAP2K2) as transfection-ready DNA |
| Effect:                   | Crdio-fio-uneous syndrome   |
| Symbol:                   | MAP2K2  |
| Synonyms:                 | CFC4; MAPKK2; MEK2; MKK2; PRKMK2  |
| E. coli Selection:        | Kanamycin (25 ug/mL)  |
| Mammalian Cell Selection: | Neomycin  |
| Vector:                   | pCMV6-Entry (PS100001)  |
| Tag:                      | Myc-DDK   |
| ACCN:                     | NM_030662   |
| ORF Size:                 | 1200 bp   |
| Restriction Sites:        | Sgfi-Mlul   |



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**ORF Nucleotide Sequence:**

>RC403502 representing NM\_030662  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGCTGGCCCGGAGGAAGCCGGTGTGCCGGCGCTCACCATCAACCCTACCATCGCCGAGGGCCATCCC  
 CTACCAGCGAGGGCGCCTCCGAGGCAAACCTGGTGGACCTGCAGAAGAAGCTGGAGGAGCTGGAACCTGA  
 CGAGCAGCAGAAGAAGCGGCTGGAAGCCTTTCTCACCCAGGAAGCCAAGGTGGCGAACTCAAAGACGAT  
 GACTTCGAAAGGATCTCAGAGCTGGGCGCGGGCAACGGCGGGTGGTACCAAAGTCCAGCACAGACCCT  
 CGGGCCTCATCATGGCCAGGAAGCTGATCCACCTTGAGATCAAGCCGGCCATCCGGAACCAGATCATCCG  
 CGAGCTGCAGGTCTGCACGAATGCAACTCGCCGTACATCGTGGGCTTCTACGGGCTTCTACAGTGAC  
 GGGGAGATCAGCATTTGCATGGAACACATGGACGGCGGCTCCCTGGACCAGGTGCTGAAAGAGGCCAAGA  
 GGATCCCGAGGAGATCTGGGAAAGTCAAGTCCGCGTTCTCCGGGGCTTGGCGTACCTCCGAGAGAA  
 GCACCAGATCATGCACCGAGATGTGAAGCCCTCAACATCCTCGTGAAGTCTAGAGGGGAGATCAAGCTG  
 TGTGACTTCGGGGTGGAGCGCCAGCTCATCGACTCCATGGCCAACTCCTTCGTGGGCACGCGCTCCTACA  
 TGGCTCCGGAGCGGTTGCAGGGCACACATTACTCGGTGCAGTCCGACATCTGGAGCATGGGCTGTCCCT  
 GGTGGAGCTGGCCGTCGGAAGGTACCCCATCCCCCGCCGACGCCAAAGAGCTGGAGGCCATCTTTGGC  
 CGGCCCGTGGTCGACGGGAAGAAGGAGAGCCTCACAGCATCTCGCCTCGGCCGAGGCCCGCCGGCGCC  
 CCGTCAGCGGTACGGGATGGATAGCCGGCCTGCCATGGCCATCTTTGAACTCTGGACTATATTGTGAA  
 CGAGCCACCTCCTAAGCTGCCAACGGTGTGTTACCCCCGACTTCCAGGAGTTGTCAATAAATGCCTC  
 ATCAAGAACCCAGCGGAGCGGGCGGACCTGAAGATGCTCACAACCCACACCTTCAAGCGGTCCGAGG  
 TGAAGAAGTGGATTTGCCGGCTGTTGTGTAACCCTGCGGCTGAACCAGCCCGGCACCCACCGCGC  
 CACCGCGTG

AG**CGGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:**

>RC403502 representing NM\_030662  
 Red=Cloning site Green=Tags(s)

MLARRKPVLPAL TINPTIAEGPSPTSEGASEANLVDLQKKLEELDEQKKRLEAFLTQEAKVGELKDD  
 DFERISELGAGNGGVVTKVQHRPSGLIMARKLIHLEIKPAIRNQI IRELQVLHECNPSYIVGFYGAIFYSD  
 GEISICMEHMDGGSLDQVLKEAKRIPEEILGKVSIAVLRGLAYLREKHQIMHRDVKPSNILVNSRGEIKL  
 CDFGVSGQLIDSMANSFVGRSYMAPERLQGTHYSVQSDIWSMGLSLVELAVGRYPIPPDAKELEAIFG  
 RPVVDGEEGEPHSISPRPRPPGRPVSGHGMSRPAMAI FELLDYIVNEPPPPLPNGVFTPDFQEFVNKCL  
 IKNPAERADLKMLTNHTFIKRSEVEEVDFAWGLCKTLRLNQPGTPTRTAV

**SGP**TRRRLEQKLI SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-Mlul

**Cloning Scheme:**

**OTI Disclaimer:**

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).

**RefSeq:**

[NP\\_109587](#)

**RefSeq Size:**

1200 bp

**RefSeq ORF:**

1203 bp

**Locus ID:**

5605

**Cytogenetics:**

19p13.3

**Domains:**

pkinase, TyrKc, S\_TKc

**Protein Families:**

Druggable Genome, Protein Kinase

**Protein Pathways:**

Acute myeloid leukemia, B cell receptor signaling pathway, Bladder cancer, Chronic myeloid leukemia, Endometrial cancer, ErbB signaling pathway, Fc epsilon RI signaling pathway, Gap junction, Glioma, GnRH signaling pathway, Insulin signaling pathway, Long-term depression, Long-term potentiation, MAPK signaling pathway, Melanogenesis, Melanoma, Natural killer cell mediated cytotoxicity, Neurotrophin signaling pathway, Non-small cell lung cancer, Pathways in cancer, Prion diseases, Prostate cancer, Regulation of actin cytoskeleton, Renal cell carcinoma, T cell receptor signaling pathway, Thyroid cancer, Toll-like receptor signaling pathway, Vascular smooth muscle contraction, VEGF signaling pathway

**MW:** 44 kDa

**Gene Summary:** The protein encoded by this gene is a dual specificity protein kinase that belongs to the MAP kinase kinase family. This kinase is known to play a critical role in mitogen growth factor signal transduction. It phosphorylates and thus activates MAPK1/ERK2 and MAPK2/ERK3. The activation of this kinase itself is dependent on the Ser/Thr phosphorylation by MAP kinase kinases. Mutations in this gene cause cardiofaciocutaneous syndrome (CFC syndrome), a disease characterized by heart defects, cognitive disability, and distinctive facial features similar to those found in Noonan syndrome. The inhibition or degradation of this kinase is also found to be involved in the pathogenesis of Yersinia and anthrax. A pseudogene, which is located on chromosome 7, has been identified for this gene. [provided by RefSeq, Jul 2008]