

Product datasheet for MR212025

Eif2ak4 (NM_001177806) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Eif2ak4 (NM_001177806) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Eif2ak4
Synonyms:	2610011M03; GCN2; MGCN2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>MR212025 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGCCACCTACATACCCAGATGTGTGATGATATTTGAACTGGCACACCATGTGCAGTCGTTTCTCAGCG
AGCATAACAAGCCCCACCAAAGTCTTTCCATGAAGAAATGCTGGAAAGGCAGGCTCAGGAGAAGCAGCA
GAGGTTGCTGGAGGCCAGGCGGAAGGAGGAGCAGGAGCAACGTGAAATCCTCCACGAGATTCAGAGAAGG
AAAGAGGAGATCAAGGAAGAGAAGAAAAGGAAGGAAATGGCTAAGCAGGAACGTTTGAAATCACTAGCT
TGACAAACCAGGACTATGCCTCTAAGAGAGACCCAGCAGGGCACAGGGCAGCTGCCATCCTCCATGGAGG
CTCTCCTGACTTTGTAGGAAATGGTAAAGCCCGGACATACTCCTCAGGAAGGTCCAGGCGAGAACGTCAG
TATTCTGTGTGTAGTGGTGAACCCTCTCCTGGCTCGTGTGACATCCTCCATTTCTCTGTGGGTAGCCCTG
ATCAGCTCATGGTGCACAAAGGGAGATGTGTTGGCAGTGATGAGCAGCTGGGAAAGGTGGTATACAATGC
TTTGAAACAGCCACGGGAGCTTTGTCTTGTGTCATGAGTGGGTCTTCAATGGCAGAAGATGGGCCCT
TGCCTTACCAGTCAAGAGAAAGAGAAGATTGACAAGTGCAAAAGGCAGATTCAAGGAGCAGAAACAGAAT
TCAGCTCCCTAGTGAAACTGAGCCATCCAAATATCGTCCGCTACTTTGCGATGAACTCCAGAGAGGAGGA
GGACTCCATTGTGATCGACATTTGGCAGAGCAGTCACTGTCATCTCTGGCTACACACCTGAGCCAC
TCGGGCCAGTCCCCGCCACCAGCTGCGCAAGTACACAGCCAGCTCCTGGCAGGCTGGATTACCTAC
ACAGAACTCCGTGGTGCACAAGGTTCTGAGCGGTCAGTGTCTTGGTAGATGCCGAGGCACTGTCAA
GATAACAGACTACAGCATCTCTAAGCGTCTGGCAGACATTTGCAAGGAGGATGTATTTGAGCAAGCTCGA
GTTCTGTTTGTGACAGTGCCCTGCCTTATAAAACAGGAAAGAAAGGGGATGTGTGGCGGCTCGGCCTCC
TGCTGTTGTCTCTCAGCCAAGGACAGGAGTGTGGGAGTATCCGGTGACCATCCCCAGTGACCTGCCAGC
TGACTTCAAGACTTCTGAAGAAGTGTGTCTGCCTGGACGACAAGGAAAGATGGAGCCCTCAGCAGCTG
CTGAAACAGCTTTATAAACCTCAACCAAAGCTGCCTTTGGTGGAGCAGAGTCTGAAGACTCTGGG
GACAAGACTACATTGAGACCGTCATTCCCAGCAACCAGCTGCCAGCGCTGCGTTCTTCAGTGAGACACA
GAAACAGTTCTCCGGTACTTCATTGAGTTTGAAGAACTACAACCTCCTAGGAAAGGAGCTTTTGGAGCT



[View online »](#)

GTCATCAAGGTGCAAAACAAGCTTGATGGCTGCTGCTATGCTGTGAAGCGCATCCCTATCAACCCTGCAA
GCAGACACTTCCGCCGATCAAGGGCGAGGTGACACTGCTATCGCGCTGCACCATGAGAACATTGTGCG
CTACTACAACGCCTGGATCGAGCGGCATGAGCGCCAGCGGTGCCAGGGACACCGCCCCAGACTGCACA
CCCCAGGCCAGGACAGCCAGCCACCTGCGGGAAAACATCAGGCGACACTGAAGAACTGGGCAGCGTGG
AGGCTGCAGCACCGCCACCCATCCTCAGCAGCTCGGTGGAGTGGAGCACATCTGCAGAGCGTTCTACCAG
CACCCGTTCCCAGTACGGGCCAGGATTCCAGCAGCGATGAGGAGGACGAGGACGAGCGGATGGCGTC
TTCTCCCAGTCCTTTCTACCTGCTTACAGATTCTGACAGTGACATCATCTTTGACAATGAAGATGAAAACA
GTAAAAGTCAAAATCAGGATGAAGACTGCAATCAAAAGGACGGTAGCCATGAGATTGAGCCTTCAGTGAC
AGCTGAGGCTGTGCACTACCTTTATATCCAGATGGAGTACTGCGAGAAGAGCACGCTGCGGGACACCATT
GACCAGGGGCTGTTCCGAGACACCAGCCGGCTCTGGAGGCTTTTCCGAGAGATTCTGGATGGATTAGCTT
ATATCCATGAGAAAGGAATGATTCATCGGACTTGAAGCCTGTCAATATTATTTGGATTCTGATGACCA
TGTGAAAATAGGTGACTTTGGCTGGCAACAGACCATCTGGCCTTCACTGCTGAAGGTAACAGGACGAC
CAGGCAGGTGACGGAGTGATTAAGTCAGACCCTCAGGCCATTTGACTGGCATGGTTGGTACTGCTCTGT
ATGTAAGCCCTGAGGTCCAAGGAAGCACAAGTCTGCATACAACCAGAAAGTGGATCTCTCAGCCTGGG
AATTATCTTCTTTGAGATGTCTTATCACCCGATGGTACTGCCTCAGAAAGAATTTTCGTTCTCAACCAA
CTTCGAGATCCCACATCGCCAAGTTTCCAGACGACTTCGATGATGGAGAACATACAAAGCAGAAATCTG
TCATCTCCTGGCTGTTGAACCATGATCCAGCTAAACGGCCACGGCCATGGAAGTCTCAAGAGTGAGCT
GCTCCCCCGCCGAGATGGAGGAGTCCGAGTGCATGAAGTGTGCACCACACGCTGGCCAACATAGAT
GGGAAGGCCTACCGCACCATGATGAGTCAGATCTTCTGCCAGCACATCTCCCCGCTATAGACTACACCT
ACGACAGTGACATCCTGAAGGGCAACTTCTTGATTCGTACAGCCAAGATCCAGCAGCTTGTATGTAAAC
CATCGTCCGCTCTTTAAAAGGCATGGCGCTGTCCAGCTGTGCACCCACTGTGCTTCCCCGAAACAGG
CAAATATATGAGCACAACGAAGCGGCTTTGTTTCATGGATCACAGCGGCATGCTGGTGTGCTTCCGTTCC
ACCTGCGGGTCCCTTTTGAAGATATGTGGCAAGAAATAACATACTGAATTTAAAACGATGACTGCATAGA
CGGGGTGTTCCAGCCTCGGAAGTTAGACCGATTTTCATCCAAAGAACTCCTGGAATGTGCATTTGATATC
GTCACCTTCTACCACCAACAGCTCTCTGCCACTGCCGAAACCATCTACACCATCTATGAAATAATCCAGG
AGTTTCTGCACTTCCAGGAAAGGAATTACAGCATTTACTTGAACCATACGATGCTTCTGAAGGCAATACT
CCTACACTGTGGGATCCCAGAGGACAAGCTCAGCCAAGTCTACGTCATTCTGTATGATGCTGTGACAGAG
AAGCTGACTAGGAGAGAAGTGAAGCTAAATTCTGTAACCTGTCCTTGTCTTCTAATAGCCTGTGTAGAC
TCTACAAGTTCATTGAGCAGAAGGGGATTTGCAAGACTTAACGCCAACCATCAACTCAATAAAAACA
GAAAACAGGCGTTGCTCAGTTGGTGAAGTATAGCTTAAAAGACCTCGAGGACGTCGTCGGCTGCTGAAG
AAACTTGGCGTGAAGTTACAGGTCTCCATCAACCTGGGCTTGGTCTACAAGGTGCAGCAGCACACTGGCA
TCATCTTCCAGTTCCTGGCATTACAGAAACGCAGGCAAAGGGTTGTGCCTGAGATCCTTCCGCGCGGTGG
CAGATACGACCTGCTGATTCCCAAGTTCAGAGGCCACAGACTGTGGGGCCAGTCCCACCTGCTGTCCGT
GTCAGCATAGCCATAGACAAGATATTTGCTGCTGTCTCAACATGGAAGAGCCTGTTACAGTGAGCTCCT
GTGACCTCCTGGTTGTCAGTGTGGCCAGATGTCCATGTCCAGGGCCATCAACCTAACCCAGAAACTGTG
GACAGCGGGCATCACTGCAGAAATCATGTATGACTGGTCCCAGTCCCAGGAAGAGTTACAAGAGTACTGC
AGACACCATGAAATCACCTATGTGGCTCTGGTCTCCGATAAAGAAGGAAGCCATGTCAAGGTCAAGTCCCT
TTGAGAAGGAGAGGCAAACAGAAAAGCGTGTATTGGAATCGGATCTTGTGGATCACGTTATGCAGAAACT
AAGAACCAAAAGTTGGTGACGAAAGAAATTTCCAGAGACGCTTCTGATAATCTTGCCGTACAAACTGGAAG
GGGTCTTTTTCTAATGCTTCAGGTTTGTGTTGAAATCCATGGAACACTACAGTGTCCCAACGTTGATTGTT
TAGCACCAGAAAAGCTGTGAGCCAGCACAGGAGGCGACATGAGATTGAGGTGAAAACCCGACTTACAGAC
TACACTTGCCAACTTACATCAGAAAAGCAGTGAATTTGAAATTTTGGCTGTGGACCTACCCAAGGAAACA
ATCTTACAGTTTCTATCATTAGAGTGGGATGCTGATGAACAGGCATTTAACACAAGTGTGAAGCAGCTGC
TGTCACGCTGCCAAAGCAAAGATACCTCAAACCTGCTGCGATGAAATTTATAACATCAAAGTTGAAAA
GAAGGTGTCAGTGTCTTCTGTACAGTACAGAGATGACTACTACAGAATCCTATTT

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>MR212025 protein sequence
 Red=Cloning site Green=Tags(s)

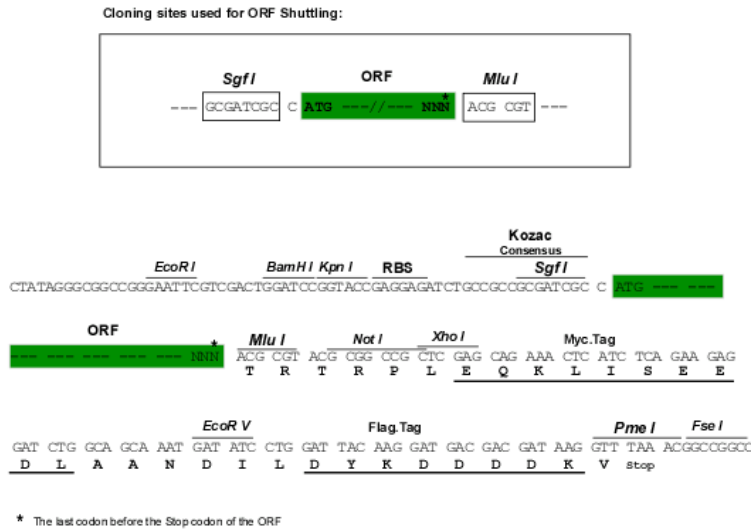
MPTYIPRCVMIFELAAHVQSFLSEHNKPPPKSFHEEMLERQAQEKQQRLLLEARRKEEQEQREILHEIQRR
 KEEIKEEKKRKEMAKQERLEITSLTNQDYASKRDPAGHRAAAILHGGSPDFVGNKARTYSSGRSRRERQ
 YSVCSGEPSPGSCDILHF SVGSPDQLMVHKGRCVGSDEQLGKVYNALETATGSFVLLHEWVWVQWQKMG
 CLTSQEKEIKCKRQIQGAETEFSSLVKLSHPNIVRYFAMNSREEEDSIVIDILAEHVSIGISLATHLSH
 SGPVPAHQLRKYTAQLLAGLDYLHSNSVVKVLSASSVLVDAEGTVKITDYSISKRLADICKEDVFEQAR
 VRFSDSALPYKTGKKGDVWRLGLLLLLSLQSQCEGCEYPTIPSDLPADFDLKKCVCLDDKERWSPQQL
 LKHSFINPQPKLPLVEQSPEDSGGDYIETVIPSNLPSAAFFSETQKQFSRYFIEFEELQLLGKAFGA
 VIKVQNKLDGCCYAVKRIPINPASRHFRIKGEVTLRLHHEINIVRYNNAWIERHERPAVPGTPPPDCT
 PQAQDSPATCGKTSGDTEELGSVEAAAPPPILSSVWSTSAERSTSTRFPVTGQDSSSDEEDEDERDGV
 FSQSFLPASDSDSDIIFDNEDENSKSQNQDEDCNQKDGSHIEPSVTAEAHVHLYIQMEYCEKSTLRDIT
 DQGLFRDTSRLWRLFREILDGLAYIHEKGMHRDLKPVNIILSDDHVKIGDFGLATDHLAFTAEGKQDD
 QAGDGVIKSDPSGHLTGMVGTALVVSPEVQGSTKSAYNQKVDLFLSLGIIFFEMSYHPMVTASERIFVLNQ
 LRDPSTPKFPDDFDDGEHTKQKSVISWLLNHDPKRPTAMELLKSELLPPQMEESELEHVLHHTLANID
 GKAYRTMMSQIFCQHISPAIDYTYDSDILKGNFLIRTAQIQQLVCETIVRVFKRHGAVQLCTPLLLPRNR
 QIYEHNEAALFMDHSGMLVMLPFDLRVFPARYVARNNILNLKRYCIERVFRPKLDRFHPKELLECAFDI
 VTSTTNSLSPTAETIYTIYEIIQEFPALQERNYSIYLNHTMLLKAILLHCGIPEDKLSQVYVILYDAVTE
 KLTRREVEAKFCNLSSNSLCLRYKQIEQKGLQDLTPTINSLIKQKTGVAQLVKYSLKDLQEDVVGLLK
 KLVGKLVQVSNLGLVYKVVQHTGIIFQLAFSKRRQRVPEILAAGGRYDILLPKFRGPQTVGPVPTAVG
 VSAIDKIFAAVLNMEEPVTVSSCDLLVSVGQMSMSRAINLTQKLWTAGITAEIMYDWSQSEELQEYEC
 RHHEITYVALVSDKEGSHVVKVSKFEKERQTEKRVLESDLVDHVMQKLRRTKVGDERNFRDASDNLAQVTLK
 GSFNSASGLFEIHGTTVPNVIVLAEPEKLSASTRRRHEIQVQTRLQTTLANLHQKSSIEILAVDLPKET
 ILQFLSLEWDADEQAFNTTVKQLLSRLPKQRYLKLVCDEIYNIKVEKKVSVLFLYSYRDDYYRILF

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

SgfI-MluI

Cloning Scheme:



ACCN:

NM_001177806

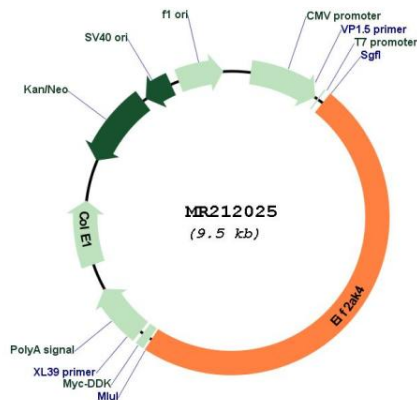
ORF Size:

4611 bp

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).
Reconstitution Method:	<ol style="list-style-type: none">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_001177806.1 , NP_001171277.1
RefSeq Size:	4916 bp
RefSeq ORF:	4611 bp
Locus ID:	27103
UniProt ID:	Q9QZ05
Cytogenetics:	2 E5
MW:	174.1 kDa

Gene Summary:

Metabolic-stress sensing protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (eIF-2-alpha/EIF2S1) on 'Ser-52' in response to low amino acid availability (PubMed:10504407, PubMed:10655230, PubMed:12176355, PubMed:12215525, PubMed:15213227, PubMed:16054071, PubMed:16176978, PubMed:16121183, PubMed:15774759, PubMed:16601681, PubMed:26102367). Plays a role as an activator of the integrated stress response (ISR) required for adaptation to amino acid starvation. Converts phosphorylated eIF-2-alpha/EIF2S1 either to a competitive inhibitor of the translation initiation factor eIF-2B, leading to a global protein synthesis repression, and thus to a reduced overall utilization of amino acids, or to a translational initiation activation of specific mRNAs, such as the transcriptional activator ATF4, and hence allowing ATF4-mediated reprogramming of amino acid biosynthetic gene expression to alleviate nutrient depletion (PubMed:10655230, PubMed:11106749, PubMed:12176355, PubMed:15213227, PubMed:16176978, PubMed:26102367). Binds uncharged tRNAs (By similarity). Involved in cell cycle arrest by promoting cyclin D1 mRNA translation repression after the unfolded protein response pathway (UPR) activation or cell cycle inhibitor CDKN1A/p21 mRNA translation activation in response to amino acid deprivation (PubMed:16176978, PubMed:26102367). Plays a role in the consolidation of synaptic plasticity, learning as well as formation of long-term memory (PubMed:16121183). Plays a role in neurite outgrowth inhibition (PubMed:23447528). Plays a role in feeding behavior to maintain amino acid homeostasis; contributes to the innate aversion toward diets of imbalanced amino acid composition (PubMed:16054071, PubMed:15774759). Plays a proapoptotic role in response to glucose deprivation (PubMed:20660158). Promotes global cellular protein synthesis repression in response to UV irradiation independently of the stress-activated protein kinase/c-Jun N-terminal kinase (SAPK/JNK) and p38 MAPK signaling pathways (PubMed:12176355).[UniProtKB/Swiss-Prot Function]

Product images:

Circular map for MR212025