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Product datasheet for MC224787

Eif2ak4 (NM_013719) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Eif2ak4 (NM_013719) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Eif2ak4
Synonyms:	2610011M03; GCN2; MGCN2
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin

Fully Sequenced ORF:

>MC224787 representing NM_013719
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGCTGGGGGCCGCGGGGCCTCTGGACGCGGCCGGGCTGAGCCACAGGAGAGCTATTCGCAGCGACAGG
ACCACGAGCTGCAGGCCCTGGAGGCCATTTACGGCTCGGACTTCCAGGATCTGCGGCCGGATGCGCGCGG
ACGGGTGAGAGAGCCTCCTGAAATCAACTTAGTTCTTTACCCTCAGGGCCTAGCTGGTGAAGAAGTATAC
GTGCAAGTGGAACTGAGGGTTAAATGCCCACCTACATACCCAGATGTAGTTCCCGAAATAGACTTAAAAA
ATGCTAAAGGCCTGTCGAATGAAAGTGTTAATTTGTTAAAATCACACCTGGAAGAACTGGCCAAAAAGCA
GTGTGGAGAGGTGATGATATTTGAACTGGCACACCATGTGCAGTCGTTTCTCAGCGAGCATAACAAGCCC
CCACCAAAGTCTTTCCATGAAGAAATGCTGGAAAGGCAGGCTCAGGAGAAGCAGCAGAGGTTGCTGGAGG
CCAGGCGGAAGGAGGAGCAGGAGCAACGTGAAATCCTCCACGAGATTCAGAGAAGGAAAGAGGAGATCAA
GGAAGAGAAGAAAAGGAAGGAAATGGCTAAGCAGGAACGTTTGGAAATCACTAGCTTGACAAACCAGGAC
TATGCCTCTAAGAGAGACCCAGCAGGGCACAGGGCAGCTGCCATCCTCCATGGAGGCTCTCCTGACTTTG
TAGGAAATGGTAAAGCCCGGACATACTCCTCAGGAAGGTCCAGGCGAGAACGTCAGTATTCTGTGTGTAG
TGGTGAACCCTCTCCTGGCTCGTGTGACATCCTCCATTTCTCTGTGGGTAGCCCTGATCAGCTCATGGTG
CACAAAGGGAGATGTGTTGGCAGTGATGAGCAGCTGGGAAAGGTGGTATACAATGCTTTGGAAACAGCCA
CGGGCAGCTTTGTCTTGCTGCATGAGTGGGTCCTTCAATGGCAGAAGATGGGCCCTTGCCTTACCAGTCA
AGAGAAAGAGAAGATTGACAAGTGCAAAAGGCAGATTCAAGGAGCAGAAACAGAATTCAGCTCCCTAGTG
AAACTGAGCCATCCAAATATCGTCCGCTACTTTGCGATGAACTCCAGAGAGGAGGAGGACTCCATTGTGA
TCGACATTCTGGCAGAGCACGTCAGTGGCATCTCTCTGGCTACACACCTGAGCCACTCGGGCCCAGTCCC
CGCCCACCAGCTGCGCAAGTACACAGCCCAGCTCCTGGCAGGCCTGGATTACCTACACAGCAACTCCGTG
GTGCACAAGGTTCTGAGCGCGTCCAGTGTCTTGGTAGATGCCGAGGGCACTGTCAAGATAACAGACTACA
GCATCTCTAAGCGTCTGGCAGACATTTGCAAGGAGGATGTATTTGAGCAAGCTCGAGTTCGTTTTAGTGA
CAGTGCCCTGCCTTATAAAACAGGAAAGAAAGGGGATGTGTGGCGGCTCGGCCTCCTGCTGTTGTCTCTC
AGCCAAGGACAGGAGTGTGGGGAGTATCCGGTGACCATCCCCAGTGACCTGCCAGCTGACTTCCAAGACT

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TCCTGAAGAAGTGTGTCTGCCTGGACGACAAGGAAAGATGGAGCCCTCAGCAGCTGCTGAAACACAGCTT
TATAAACCCTCAACCAAAGCTGCCTTTGGTGGAGCAGAGTCCTGAAGACTCTGGGGGACAAGACTACATT
GAGACCGTCATTCCCAGCAACCAGCTGCCCAGCGCTGCGTTCTTCAGTGAGACACAGAAACAGTTCTCCC
GGTACTTCATTGAGTTTGAAGAACTACAACTCCTAGGGAAAGGAGCTTTTGGAGCTGTCATCAAGGTGCA
AAACAAGCTTGATGGCTGCTGCTATGCTGTGAAGCGCATCCCTATCAACCCTGCAAGCAGACACTTCCGC
CGGATCAAGGGCGAGGTGACACTGCTATCGCGCCTGCACCATGAGAACATTGTGCGCTACTACAACGCCT
GGATCGAGCGGCATGAGCGCCCAGCGGTGCCAGGGACACCGCCCCCAGACTGCACACCCCAGGCCCAGGA
CAGCCCAGCCACCTGCGGGAAAACATCAGGCGACACTGAAGAACTGGGCAGCGTGGAGGCTGCAGCACCG
CCACCCATCCTCAGCAGCTCGGTGGAGTGGAGCACATCTGCAGAGCGTTCTACCAGCACCCGCTTCCCAG
TCACGGGCCAGGATTCCAGCAGCGATGAGGAGGACGAGGACGAGCGCGATGGCGTCTTCTCCCAGTCCTT
TCTACCTGCTTCAGATTCTGACAGTGACATCATCTTTGACAATGAAGATGAAAACAGTAAAAGTCAAAAT
CAGGATGAAGACTGCAATCAAAAGGACGGTAGCCATGAGATTGAGCCTTCAGTGACAGCTGAGGCTGTGC
ACTACCTTTATATCCAGATGGAGTACTGCGAGAAGAGCACGCTGCGGGACACCATTGACCAGGGGCTGTT
CCGAGACACCAGCCGGCTCTGGAGGCTTTTCCGAGAGATTCTGGATGGATTAGCTTATATCCATGAGAAA
GGAATGATTCATCGCGACTTGAAGCCTGTCAATATTTTTTTGGATTCTGATGACCATGTGAAAATAGGTG
ACTTTGGCCTGGCAACAGACCATCTGGCCTTCACTGCTGAAGGTAAACAGGACGACCAGGCAGGTGACGG
AGTGATTAAGTCAGACCCTTCAGGCCATTTGACTGGCATGGTTGGTACTGCTCTGTATGTAAGCCCTGAG
GTCCAAGGAAGCACCAAGTCTGCATACAACCAGAAAGTGGATCTCTTCAGCCTGGGAATTATCTTCTTTG
AGATGTCTTATCACCCGATGGTGACTGCCTCAGAAAGAATTTTCGTTCTCAACCAACTTCGAGATCCCAC
ATCGCCCAAGTTTCCAGACGACTTCGATGATGGAGAACATACAAAGCAGAAATCTGTCATCTCCTGGCTG
TTGAACCATGATCCAGCTAAACGGCCCACGGCCATGGAACTGCTCAAGAGTGAGCTGCTCCCCCCGCCGC
AGATGGAGGAGTCCGAGCTGCATGAAGTGCTGCACCACACGCTGGCCAACATAGATGGGAAGGCCTACCG
CACCATGATGAGTCAGATCTTCTGCCAGCACATCTCCCCCGCTATAGACTACACCTACGACAGTGACATC
CTGAAGGGCAACTTCTTGATTCGTACAGCCAAGATCCAGCAGCTTGTATGTGAAACCATCGTCCGCGTCT
TTAAAAGGCATGGCGCTGTCCAGCTGTGCACCCCACTGCTGCTTCCCCGAAACAGGCAAATATATGAGCA
CAACGAAGCGGCTTTGTTCATGGATCACAGCGGCATGCTGGTGATGCTTCCGTTCGACCTGCGGGTCCCT
TTTGCAAGATATGTGGCAAGAAATAACATACTGAATTTAAAACGATACTGCATAGAGCGGGTGTTCAGAC
CTCGGAAGTTAGACCGATTTCATCCCAAAGAACTCCTGGAATGTGCATTTGATATCGTCACTTCTACCAC
CAACAGCTCTCTGCCCACTGCCGAAACCATCTACACCATCTATGAAATAATCCAGGAGTTTCCTGCACTT
CAGGAAAGGAATTACAGCATTTACTTGAACCATACGATGCTTCTGAAGGCAATACTCCTACACTGTGGGA
TCCCAGAGGACAAGCTCAGCCAAGTCTACGTCATTCTGTATGATGCTGTGACAGAGAAGCTGACTAGGAG
AGAAGTGGAAGCTAAATTCTGTAACCTGTCCTTGTCTTCTAATAGCCTGTGTAGACTCTACAAGTTCATT
GAGCAGAAGGGGGATTTGCAAGACTTAACGCCAACCATCAACTCACTAATAAAACAGAAAACAGGCGTTG
CTCAGTTGGTGAAGTATAGCTTAAAAGACCTCGAGGACGTCGTCGGGCTGCTGAAGAAACTTGGCGTGAA
GTTACAGGTCTCCATCAACCTGGGCTTGGTCTACAAGGTGCAGCAGCACACTGGCATCATCTTCCAGTTC
CTGGCATTCAGCAAACGCAGGCAAAGGGTTGTGCCTGAGATCCTTGCCGCCGGTGGCAGATACGACCTGC
TGATTCCCAAGTTCAGAGGCCCACAGACTGTGGGGCCAGTCCCCACTGCTGTCGGTGTCAGCATAGCCAT
AGACAAGATATTTGCTGCTGTCCTCAACATGGAAGAGCCTGTTACAGTGAGCTCCTGTGACCTCCTGGTT
GTCAGTGTTGGCCAGATGTCCATGTCCAGGGCCATCAACCTAACCCAGAAACTGTGGACAGCGGGCATCA
CTGCAGAAATCATGTATGACTGGTCCCAGTCCCAGGAAGAGTTACAAGAGTACTGCAGACACCATGAAAT
CACCTATGTGGCTCTGGTCTCCGATAAAGAAGGAAGCCATGTCAAGGTCAAGTCCTTTGAGAAGGAGAGG
CAAACAGAAAAGCGTGTATTGGAATCGGATCTTGTGGATCACGTTATGCAGAAACTAAGAACCAAAGTTG
GTGACGAAAGAAATTTCAGAGACGCTTCTGATAATCTTGCCGTACAAACTCTGAAGGGGTCGTTTTCTAA
TGCTTCAGGTTTGTTTGAAATCCATGGAACTACAGTAGTCCCCAACGTGATTGTTCTAGCACCAGAAAAG
CTGTCAGCCAGCACCAGGAGGCGACATGAGATTCAGGTGCAAACCCGACTTCAGACTACACTTGCCAACT
TACATCAGAAAAGCAGTGAAATTGAAATTTTGGCTGTGGACCTACCCAAGGAAACAATCTTACAGTTTCT
ATCATTAGAGTGGGATGCTGATGAACAGGCATTTAACACAACTGTGAAGCAGCTGCTGTCACGCCTGCCA
AAGCAAAGATACCTCAAACTCGTCTGCGATGAAATTTATAACATCAAAGTTGAAAAGAAGGTGTCAGTGC
TGTTCCTGTACAGCTACAGAGATGACTACTACAGAATCCTATTTTGA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites:	SgfI-MluI
ACCN:	NM_013719
Insert Size:	4947 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
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_013719.3, NP_038747.2
RefSeq Size:	5220 bp
RefSeq ORF:	4947 bp
Locus ID:	27103
UniProt ID:	Q9QZ05
Cytogenetics:	2 E5

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 adapatation 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]

Transcript Variant: This variant (1) represents the longest transcript and encodes the longest isoform (1). Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.