

Product datasheet for **MC217285**

Eif2ak2 (NM_011163) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Eif2ak2 (NM_011163) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Eif2ak2
Synonyms:	2310047A08Rik; 4732414G15Rik; AI467567; AI747578; Pkr; Prkr; Tik
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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Fully Sequenced ORF: >MC217285 representing NM_011163
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGCCAGTGATACCCAGGTTTCTACATGGACAACTTAATAAATACCGCCAGATGCACGGAGTAGCCA
 TTACGTATAAAGAACTTAGTACTTCGGGACCTCCACATGACAGAAGGTTTACATTTCAAGTTTTAATAGA
 TGAGAAGGAATTTCCAGAAGCCAAAGGTAGATCAAAGCAGGAGGCAAGAAACGCTGCAGCCAAATTAGT
 GTTGATACTTGATAACGAAAACAAGGTGGATTGTCACACGAGTGCATCTGAGCAAGGCTTGTTGCTTG
 GTAACACATAGGCCTTGTCAATAGCTTTGCCAGAAGAAAAGCTGTCTGTAATTATGAACAGTGTGA
 GCCCACTCTGAGTTGCCTCAAAGATTTATTTGTAATGCAAAATGGGCAGACAATGTATGGTACTGGT
 TCAGGTGCACCAACAGGAGGCAAAGCAGTTGGCTGCGAAAGAAGCCTATCAGAAGCTGTTAAAGAGCC
 CGCGAAAACGCGGAACATCCTCTAGCGTTGTCACATCTACATTCAGTGGCTTTCCAGCAGCTCGTC
 TATGACAAGTAATGGTGTTCACAGTCAGCACCTGGAAGTTTTCTCAGAGAACGTGTTACGAACGGT
 CTCGGAGAAAATAAAGGAAATCAGGAGTAAAAGTATCCCTGATGATGTGCAAAGAAAATAATATACCT
 TGGACGCCAGGTTAACAGCGATTTTGAAGACATAGAAGAAATTGGCTTAGTGGATTTGGTCAAGTTTT
 CAAAGCGAAACACAGAATTGATGGAAAGAGATACGCTATTAAGCGCGTAAATATAACACGGAGAAGGCG
 GAGCACGAAGTACAAGCGCTGGCAGAATCAATCACGTCAACATTGTCCAATACCATAGTTGTTGGGAGG
 GAGTTGACTATGATCCTGAGCACAGCATGAGTGATACAAGTCGATACAAAACCCGGTGCCTCTTTATTCA
 AATGGAATCTGTGATAAAGGAACTTTGGAGCAATGGATGAGAAACAGAAATCAGAGTAAAGTGGACAAA
 GCTTTGATTTGGACTTATATGAACAAATCGTGACCGGAGTGGAGTATATACACTCGAAAGGTTAATTC
 ACAGAGATCTTAAGCCAGGTAATATATTTTGTAGATGAAAGACACATTAAGATCGGAGACTTTGGCCT
 TGCAACAGCCCTGGAAAATGATGGAAAATCCCGAACAAGGAGAACAGGAACTTTCAATACATGAGTCCA
 GAACAGTTATTTTAAAGCACTATGAAAAGAAGTGGACATCTTTGCTTTGGCCTTATTCTAGCTGAAC
 TTCTTACACGTGCTTACGGAGTCAAGAGAAAATAAAGTTTTTTCGAAAGTCTAAGAAAAGGCGACTTCTC
 TAATGATATATTCGACAACAAAGAAAAAGCCTTCTAAAAAACTACTCTCAGAGAAACCAAGGACCGA
 CCTGAGACATCTGAAATCCTGAAGACCTTGGCTGAATGGAGGAACATCTCAGAGAAAAAGAAAAGAAACA
 CATGTTAG

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

- Restriction Sites:** SgfI-MluI
- ACCN:** NM_011163
- Insert Size:** 1548 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_011163.4](#), [NP_035293.1](#)

RefSeq Size: 4343 bp

RefSeq ORF: 1548 bp

Locus ID: 19106

UniProt ID: [Q03963](#)

Cytogenetics: 17 49.56 cM

Gene Summary:

IFN-induced dsRNA-dependent serine/threonine-protein kinase which plays a key role in the innate immune response to viral infection and is also involved in the regulation of signal transduction, apoptosis, cell proliferation and differentiation. Exerts its antiviral activity on a wide range of DNA and RNA viruses including west nile virus (WNV), sindbis virus (SV), foot-and-mouth virus (FMDV), semliki Forest virus (SFV) and lymphocytic choriomeningitis virus (LCMV). Inhibits viral replication via phosphorylation of the alpha subunit of eukaryotic initiation factor 2 (EIF2S1), this phosphorylation impairs the recycling of EIF2S1 between successive rounds of initiation leading to inhibition of translation which eventually results in shutdown of cellular and viral protein synthesis. Also phosphorylates other substrates including p53/TP53, PPP2R5A, DHX9, ILF3 and IRS1. In addition to serine/threonine-protein kinase activity, also has tyrosine-protein kinase activity and phosphorylates CDK1 at 'Tyr-4' upon DNA damage, facilitating its ubiquitination and proteosomal degradation. Either as an adapter protein and/or via its kinase activity, can regulate various signaling pathways (p38 MAP kinase, NF-kappa-B and insulin signaling pathways) and transcription factors (JUN, STAT1, STAT3, IRF1, ATF3) involved in the expression of genes encoding proinflammatory cytokines and IFNs. Activates the NF-kappa-B pathway via interaction with IKBKB and TRAF family of proteins and activates the p38 MAP kinase pathway via interaction with MAP2K6. Can act as both a positive and negative regulator of the insulin signaling pathway (ISP). Negatively regulates ISP by inducing the inhibitory phosphorylation of insulin receptor substrate 1 (IRS1) at 'Ser-312' and positively regulates ISP via phosphorylation of PPP2R5A which activates FOXO1, which in turn up-regulates the expression of insulin receptor substrate 2 (IRS2). Can regulate NLRP3 inflammasome assembly and the activation of NLRP3, NLRP1, AIM2 and NLRC4 inflammasomes. Can trigger apoptosis via FADD-mediated activation of CASP8. Plays a role in the regulation of the cytoskeleton by binding to gelsolin (GSN), sequestering the protein in an inactive conformation away from actin. Regulates proliferation, differentiation and survival of hematopoietic stem/progenitor cells, induction of cytokines and chemokines and plays a role in cortex-dependent memory consolidation.

[UniProtKB/Swiss-Prot Function]