

**Mouse Eif2ak4 Antibody (C-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP14713b****Specification**

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**Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - Product Information**Primary Accession [O9QZ05](#)**Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - Additional Information****Gene ID** 27103**Other Names**

Eukaryotic translation initiation factor 2-alpha kinase 4, GCN2-like protein, mGCN2, Eif2ak4, Gcn2, Kiaa1338

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - Protein Information****Name** Eif2ak4 {ECO:0000312|MGI:MGI:1353427}**Synonyms** Gcn2, Kiaa1338**Function**

Metabolic-stress sensing protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (EIF2S1/eIF-2-alpha) in response to low amino acid availability (PubMed:<a href="http://www.uniprot.org/citations/10504407" target="\_blank">10504407</a>, PubMed:<a href="http://www.uniprot.org/citations/10655230" target="\_blank">10655230</a>, PubMed:<a href="http://www.uniprot.org/citations/12176355" target="\_blank">12176355</a>, PubMed:<a href="http://www.uniprot.org/citations/12215525" target="\_blank">12215525</a>, PubMed:<a href="http://www.uniprot.org/citations/15213227" target="\_blank">15213227</a>, PubMed:<a href="http://www.uniprot.org/citations/16054071" target="\_blank">16054071</a>, PubMed:<a href="http://www.uniprot.org/citations/16176978" target="\_blank">16176978</a>, PubMed:<a href="http://www.uniprot.org/citations/16121183" target="\_blank">16121183</a>, PubMed:<a href="http://www.uniprot.org/citations/15774759" target="\_blank">15774759</a>, PubMed:<a href="http://www.uniprot.org/citations/16601681" target="\_blank">16601681</a>, PubMed:<a href="http://www.uniprot.org/citations/26102367" target="\_blank">26102367</a>). Plays a role as an activator of the integrated stress response (ISR) required for adaptation to amino acid starvation (PubMed:<a href="http://www.uniprot.org/citations/10655230"

target="\_blank">10655230</a>, PubMed:<a href="http://www.uniprot.org/citations/11106749" target="\_blank">11106749</a>, PubMed:<a href="http://www.uniprot.org/citations/12176355" target="\_blank">12176355</a>, PubMed:<a href="http://www.uniprot.org/citations/15213227" target="\_blank">15213227</a>, PubMed:<a href="http://www.uniprot.org/citations/16176978" target="\_blank">16176978</a>, PubMed:<a href="http://www.uniprot.org/citations/26102367" target="\_blank">26102367</a>). EIF2S1/eIF-2-alpha phosphorylation in response to stress converts EIF2S1/eIF-2-alpha into a global protein synthesis inhibitor, leading to a global attenuation of cap-dependent translation, and thus to a reduced overall utilization of amino acids, while concomitantly initiating the preferential translation of ISR-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:<a href="http://www.uniprot.org/citations/10655230" target="\_blank">10655230</a>, PubMed:<a href="http://www.uniprot.org/citations/11106749" target="\_blank">11106749</a>, PubMed:<a href="http://www.uniprot.org/citations/12176355" target="\_blank">12176355</a>, PubMed:<a href="http://www.uniprot.org/citations/15213227" target="\_blank">15213227</a>, PubMed:<a href="http://www.uniprot.org/citations/16176978" target="\_blank">16176978</a>, PubMed:<a href="http://www.uniprot.org/citations/26102367" target="\_blank">26102367</a>). Required for the translational induction of protein kinase PRKCH following amino acid starvation (PubMed:<a href="http://www.uniprot.org/citations/19797084" target="\_blank">19797084</a>). 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:<a href="http://www.uniprot.org/citations/16176978" target="\_blank">16176978</a>, PubMed:<a href="http://www.uniprot.org/citations/26102367" target="\_blank">26102367</a>). Plays a role in the consolidation of synaptic plasticity, learning as well as formation of long-term memory (PubMed:<a href="http://www.uniprot.org/citations/16121183" target="\_blank">16121183</a>). Plays a role in neurite outgrowth inhibition (PubMed:<a href="http://www.uniprot.org/citations/23447528" target="\_blank">23447528</a>). Plays a role in feeding behavior to maintain amino acid homeostasis; contributes to the innate aversion toward diets of imbalanced amino acid composition (PubMed:<a href="http://www.uniprot.org/citations/16054071" target="\_blank">16054071</a>, PubMed:<a href="http://www.uniprot.org/citations/15774759" target="\_blank">15774759</a>). Plays a proapoptotic role in response to glucose deprivation (PubMed:<a href="http://www.uniprot.org/citations/20660158" target="\_blank">20660158</a>). 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:<a href="http://www.uniprot.org/citations/12176355" target="\_blank">12176355</a>).

### Cellular Location

Cytoplasm.

### Tissue Location

Expressed in liver (PubMed:10504407). Expressed predominantly in the hippocampal CA1 region and the dentate gyrus, and to a lesser degree in CA3 (at protein level) (PubMed:16121183). Expressed in liver, lung, brain, kidney, skeletal muscle and testis (PubMed:10504407, PubMed:10655230). Expressed weakly in heart and spleen (PubMed:10655230). Expressed in the hippocampal CA1 and CA3 regions, the dentate gyrus and cerebellum (PubMed:16121183). Isoform 1 is widely expressed (PubMed:12215525). Isoform 1 is expressed in brain, liver, skeletal muscle and testis (PubMed:10655230). Isoform 3 is expressed in lung, brain, testis, prostate and choroid plexus (PubMed:12215525). Isoform 4 is expressed in muscle, lung, kidney, brain, testis and prostate (PubMed:10655230, PubMed:12215525).

### Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

**Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - Images****Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - Background**

Eif2ak4 can phosphorylate the alpha subunit of EIF2 and may mediate translational control.

**Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - References**

Bunpo, P., et al. J. Nutr. 140(11):2020-2027(2010)Ye, J., et al. EMBO J. 29(12):2082-2096(2010)Liu, Y., et al. Neoplasia 12(1):61-68(2010)Jasperson, L.K., et al. Blood 114(24):5062-5070(2009)Bunpo, P., et al. J. Biol. Chem. 284(47):32742-32749(2009)