10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Mouse Eif2ak4 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP14713b

Specification

Mouse Eif2ak4 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession Q9QZ05

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: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 (PubMed:<a href="http://www.uniprot.org/citations/10655230"

target="_blank">10655230, PubMed:11106749, PubMed:12176355, PubMed:15213227, PubMed:16176978, PubMed:26102367). 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:10655230, PubMed:11106749, PubMed:12176355, PubMed:15213227, PubMed:16176978, PubMed:26102367). Required for the translational induction of protein kinase PRKCH following amino acid starvation (PubMed:19797084). 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).

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)