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Mouse Eif2ak4 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP14713b

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9QZ05
Other Accession	NP_001171277.1, NP_038747.2
Reactivity	Human, Mouse
Predicted	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34762
Calculated MW	186487
Antigen Region	1477-1504

Additional Information

Gene ID	27103
Other Names	Eukaryotic translation initiation factor 2-alpha kinase 4, GCN2-like protein, mGCN2, Eif2ak4, Gcn2, Kiaa1338
Target/Specificity	This Mouse Eif2ak4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1477-1504 amino acids from the C-terminal region of mouse Eif2ak4.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Eif2ak4 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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:15774759, PubMed:16054071, PubMed:16121183, PubMed:16176978, PubMed:16601681, PubMed:26102367). Plays a role as an activator of the integrated stress response (ISR) required for adaptation to amino acid starvation (PubMed: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:15774759, PubMed:16054071). 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)

Background

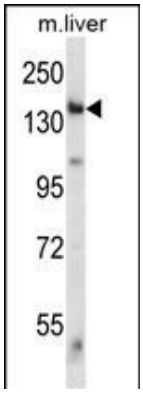
Eif2ak4 can phosphorylate the alpha subunit of EIF2 and may mediate translational control.

References

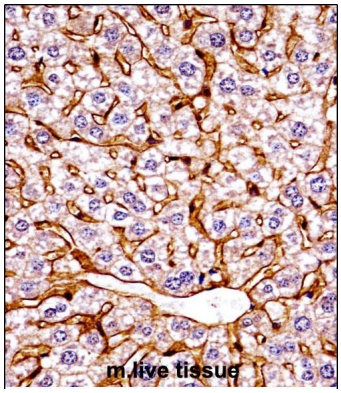
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Images



Mouse Eif2ak4 Antibody (C-term) (Cat. #AP14713b) western blot analysis in mouse liver tissue lysates (35ug/lane).This demonstrates the Eif2ak4 antibody detected the Eif2ak4 protein (arrow).



Mouse Eif2ak4 Antibody (C-term) (AP14713b)immunohistochemistry analysis in formalin fixed and paraffin embedded mouse live tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of Mouse Eif2ak4 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

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