Eukaryotic Translation Initiation Factor 2-Alpha Kinase 1 (EIF2AK1) Rat Recombinant Protein

PRODUCT OVERVIEW

Product Name	Eukaryotic translation initiation factor 2-alpha kinase 1 (Eif2ak1), Recombinant Protein
Full Product Name	Recombinant Rat Eukaryotic translation initiation factor 2-alpha kinase 1 (Eif2ak1)
Product Gene Name	Eif2ak1 recombinant protein
Product Synonym Gene Name	Eif2ak1
Sequence	MLGGGSVDGE RDTDDDAAGA VAAPPAIDFP AEVSDPKYDE SDVPAELQVF KEPLQQPTFP FLVANQLLLV SLLEHLSHVH EPNPLHSKQV FKLLCQTFIK MGLLSSFTCS DEFSSLRLHH NRAITHLMRS AKERVRQDPC QDNSYMQKIR SREIALEAQT SRYLNEFEEL AILGKGGYGR VYKVRNKLDG QHYAIKKILI KSATKTDCMK VLREVKVLAG LQHPNIVGYH TAWIEHVHVL QPQDRVPIQL PSLEVLSEHE GDRNQGGVKD NESSSSIIFA ELTPEKENPL AESDVKNENN NLVSYRANLV IRSSSESESS IELQEDGLNE SPLRPVVKHQ LPLGHSSDVE GNFTSTDESS EDNLNLLGQT EARYHLMLHI QMQLCELSLW DWIAERNNRS RECVDEAACP YVMASVATKI FQELVEGVFY IHNMGIVHRD LKPRNIFLHG PDQQVKIGDF GLACADIIQK SADWTNRNGK GTPTHTSRVG TCLYASPEQL EGSEYDAKSD MYSLGVILLE LFQPFGTEME RATVLTGVRT GRIPESLSKR CPVQAKYIQL LTGRNAAQRP SALQLLQSEL FQTTGNVNLT LQMKIMEQEK EIEELKKQLS LLSQDKGLKR
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	69,586 Da
Sequence Positions	1-620, full length protein
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
3D Structure	ModBase 3D Structure for Q63185
Species	Rat
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for Eif2ak1 recombinant protein	This protein acts at the level of translation initiation to downregulate protein synthesis in response to stress. The encoded protein is a kinase that can be inactivated by hemin. Two transcript variants encoding different isoforms have been found for this gene.
Other Notes	Small volumes of Eif2ak1 recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Eif2ak1 purchase	MBS1347057 is a recombinant protein targeting Eif2ak1. Also known as Recombinant Rat Eukaryotic translation initiation factor 2-alpha kinase 1 (Eif2ak1). Host: E Coli or Yeast or Baculovirus or Mammalian Cell.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Eif2ak1. It may not necessarily be applicable to this product.

NCBI GI #	6981046
NCBI GeneID	27137
NCBI Accession #	NP_037355.1
UniProt Primary Accession #	Q63185
UniProt Secondary Accession #	Q642C7
UniProt Related Accession #	Q63185
GenBank Nucleotide #	NM_013223.1
NCBI Official Full Name	eukaryotic translation initiation factor 2-alpha kinase 1
NCBI Official Synonym Full Names	eukaryotic translation initiation factor 2 alpha kinase 1
NCBI Official Symbol	Eif2ak1
NCBI Official Synonym Symbols	Hri
UniProt Protein Name	Eukaryotic translation initiation factor 2-alpha kinase 1
UniProt Synonym Protein Names	Heme-controlled repressor; HCR; Heme-regulated eukaryotic initiation factor eIF-2-alpha kinase; Heme-regulated inhibitor; Hemin-sensitive initiation factor 2-alpha kinase
Protein Family	Eukaryotic translation initiation factor 2-alpha kinase
UniProt Gene Name	Eif2ak1
UniProt Synonym Gene Names	Hri; HCR
NCBI Protein Information	eukaryotic translation initiation factor 2-alpha kinase 1
NCBI Summary for Eif2ak1	protein kinase, negatively regulated by hemin; may play an important role in translational control of protein synthesis [RGD, Feb 2006]
UniProt Comments for Eif2ak1	Inhibits protein synthesis at the translation initiation level, in response to various stress conditions, including oxidative stress, heme deficiency, osmotic shock and heat shock. Exerts its function through the phosphorylation of EIF2S1 at 'Ser-48' and 'Ser-51', thus preventing its recycling. Binds hemin forming a 1:1 complex through a cysteine thiolate and histidine nitrogenous coordination. This binding occurs with moderate affinity, allowing it to sense the heme concentration within the cell. Thanks to this unique heme-sensing capacity, plays a crucial role to shut off protein synthesis during acute heme-deficient conditions. In red blood cells (RBCs), controls hemoglobin synthesis ensuring a coordinated regulation of the synthesis of its heme and globin moieties. Thus plays an essential protective role for RBC survival in anemias of iron deficiency. Similarly, in hepatocytes, involved in heme-mediated translational control of CYP2B and CYP3A and possibly other hepatic P450 cytochromes (). May also contain ER stress during acute heme-deficient conditions ().
Research Articles on Eif2ak1	**1.** eukaryotic initiation factor 2alpha kinase is a protagonist of heme-mediated translational control of CYP2B enzymes and a modulator of basal endoplasmic reticulum stress tone.
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