Datasheet for ABIN7565300

EIF2AK1 Protein (AA 1-619) (His tag)

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Overview

Quantity:	1 mg
Target:	EIF2AK1
Protein Characteristics:	AA 1-619
Origin:	Mouse
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This EIF2AK1 protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant Eif2ak1 Protein expressed in mammalian cells.
Sequence:	MLGGSSVDGE RDTDDDAAGA VAAPPAIDFP AEVSDPKYDE SDVPAELQVL KEPLQQPTFP FLVANQLLLV SLLEHLSHVH EPNPLHSKQV FKLLCQTFIK MGLLSSFTCS DEFSSLRLHH NRAITHLMRS AKERVRQDPC QDNSYMQKIR SREIAFEAQT SRYLNEFEEL AILGKGGYGR VYKVRNKLDG QHYAIKKILI KSATKTDCMK VLREVKVLAG LQHPNIVGYH TAWIEHVHVV QPQDRVPIQL PSLEVLSEQE GDRDQGGVKD NESSSSIVFA ELTPEKEKPF GESEVKNENN NLVSYTANLV VRNSSESESS IELQEDGLTD LSVRPVVRHQ LPLGHSSELE GNFTSTDESS EGNLNLLGQT EVRYHLMLHI QMQLCELSLW DWITERNKRS REYVDEAACP YVMASVATKI FQELVEGVFY IHNMGIVHRD LKPRNIFLHG PDQQVKIGDF GLACADIIQN ADWTNRNGKG TRTHTSRVGT CLYASPEQLE GSQYDAKSDM YSLGVILLEL FQPFGTEMER ATVLTGVRTG RIPESLSKRC PVQAKYIQLL TGRNVSQRPS ALQLLQSELF QTTGNVNLTL QMKIIEQEKE IEELKKQLSL LSQDRGLKR **Sequence without tag. The proposed Purification-Tag is based on experiences with the expression system, a different complexity of the protein could make**

Product Details

	another tag necessary. In case you have a special request, please contact us.
Specificity:	If you are looking for a specific domain and are interested in a partial protein or a different isoform, please contact us regarding an individual offer.
Characteristics:	Key Benefits: • Made to order protein - from design to production - by highly experienced protein experts. • Protein expressed in mammalian cells and purified in one-step affinity chromatography • The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins. • State-of-the-art algorithm used for plasmid design (Gene synthesis). This protein is a made-to-order protein and will be made for the first time for your order. Our experts in the lab try to ensure that you receive soluble protein. If you are not interested in a full length protein, please contact us for individual protein fragments. The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.
Purity:	> 90 % as determined by Bis-Tris PAGE, anti-tag ELISA, Western Blot and analytical SEC (HPLC)
Grade:	custom-made

Target Details

Target:	EIF2AK1
Alternative Name:	Eif2ak1 (EIF2AK1 Products)
Background:	Eukaryotic translation initiation factor 2-alpha kinase 1 (EC 2.7.11.1) (Heme-controlled repressor) (HCR) (Heme-regulated eukaryotic initiation factor eIF-2-alpha kinase) (Heme-regulated inhibitor) (Hemin-sensitive initiation factor 2-alpha kinase),FUNCTION: Metabolic-stress sensing protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (EIF2S1/eIF-2-alpha) in response to various stress conditions (PubMed:11726526, PubMed:12767237, PubMed:16893190). Key activator of the integrated stress response (ISR) required for adaptation to various stress, such as heme deficiency, oxidative stress, osmotic shock, mitochondrial dysfunction and heat shock (PubMed:11726526, PubMed:16893190). EIF2S1/eIF-2-alpha phosphorylation in response to stress converts EIF2S1/eIF-2-alpha in a global protein synthesis inhibitor, leading to a global attenuation of cap-

Target Details

	dependent translation, while concomitantly initiating the preferential translation of ISR-specific mRNAs, such as the transcriptional activator ATF4, and hence allowing ATF4-mediated reprogramming (PubMed:11726526, PubMed:16893190). Acts as a key sensor of heme-deficiency: in normal conditions, binds hemin via a cysteine thiolate and histidine nitrogenous coordination, leading to inhibit the protein kinase activity (PubMed:16893190). This binding occurs with moderate affinity, allowing it to sense the heme concentration within the cell: heme depletion relieves inhibition and stimulates kinase activity, activating the ISR (PubMed:16893190). Thanks to this unique heme-sensing capacity, plays a crucial role to shut off protein synthesis during acute heme-deficient conditions (PubMed:16893190). In red blood cells (RBCs), controls hemoglobin synthesis ensuring a coordinated regulation of the synthesis of its heme and globin moieties (PubMed:11726526, PubMed:11050009, PubMed:15931390). It thereby plays an essential protective role for RBC survival in anemias of iron deficiency (PubMed:11726526). Iron deficiency also triggers activation by full-length DELE1 (By similarity). Also activates the ISR in response to mitochondrial dysfunction: HRI/EIF2AK1 protein kinase activity is activated upon binding to the processed form of DELE1 (S-DELE1), thereby promoting the ATF4-mediated reprogramming (By similarity). {ECO:0000250|UniProtKB:Q9BQI3, ECO:0000269|PubMed:11050009, ECO:0000269|PubMed:11726526, ECO:0000269|PubMed:12767237, ECO:0000269|PubMed:15931390, ECO:0000269|PubMed:16893190, ECO:0000269|PubMed:20071449}.
Molecular Weight:	69.7 kDa
UniProt:	Q9Z2R9
Pathways:	Hepatitis C

Application Details

Application Notes:	We expect the protein to work for functional studies. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.

Handling

Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months