Datasheet for ABIN3092216

GCN2 Protein (AA 1-1649) (Strep Tag)

1 Image

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Overview

Quantity:	1 mg
Target:	GCN2 (EIF2AK4)
Protein Characteristics:	AA 1-1649
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This GCN2 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MAGGRGAPGR GRDEPPESYP QRQDHELQAL EAIYGADFQD LRPDACGPVK EPPEINLVLY PQGLTGEEVY VKVDLRVKCP PTYPDVVPEI ELKNAKGLSN ESVNLLKSRL EELAKKHCGE VMIFELAYHV QSFLSEHNKP PPKSFHEEML ERRAQEEQQR LLEAKRKEEQ EQREILHEIQ RRKEEIKEEK KRKEMAKQER LEIASLSNQD HTSKKDPGGH RTAAILHGGS PDFVGNGKHR ANSSGRSRRE RQYSVCNSED SPGSCEILYF NMGSPDQLMV HKGKCIGSDE QLGKLVYNAL ETATGGFVLL YEWVLQWQKK MGPFLTSQEK EKIDKCKKQI QGTETEFNSL VKLSHPNVVR YLAMNLKEQD DSIVVDILVE HISGVSLAAH LSHSGPIPVH QLRRYTAQLL SGLDYLHSNS VVHKVLSASN VLVDAEGTVK ITDYSISKRL ADICKEDVFE QTRVRFSDNA LPYKTGKKGD VWRLGLLLLS LSQGQECGEY PVTIPSDLPA DFQDFLKKCV CLDDKERWSP QQLLKHSFIN PQPKMPLVEQ SPEDSEGQDY VETVIPSNRL PSAAFFSETQ RQFSRYFIEF EELQLLGKGA FGAVIKVQNK LDGCCYAVKR IPINPASRQF RRIKGEVTLL SRLHHENIVR YYNAWIERHE RPAGPGTPPP DSGPLAKDDR AARGQPASDT DGLDSVEAAA PPPILSSSVE WSTSGERSAS

ARFPATGPGS SDDEDDDEDE HGGVFSQSFL PASDSESDII FDNEDENSKS QNQDEDCNEK NGCHESEPSV TTEAVHYLYI QMEYCEKSTL RDTIDQGLYR DTVRLWRLFR EILDGLAYIH EKGMIHRDLK PVNIFLDSDD HVKIGDFGLA TDHLAFSADS KQDDQTGDLI KSDPSGHLTG MVGTALYVSP EVQGSTKSAY NQKVDLFSLG IIFFEMSYHP MVTASERIFV LNQLRDPTSP KFPEDFDDGE HAKQKSVISW LLNHDPAKRP TATELLKSEL LPPPQMEESE LHEVLHHTLT NVDGKAYRTM MAQIFSQRIS PAIDYTYDSD ILKGNFSIRT AKMQQHVCET IIRIFKRHGA VQLCTPLLLP RNRQIYEHNE AALFMDHSGM LVMLPFDLRI PFARYVARNN ILNLKRYCIE RVFRPRKLDR FHPKELLECA FDIVTSTTNS FLPTAEIIYT IYEIIQEFPA LQERNYSIYL NHTMLLKAIL LHCGIPEDKL SQVYIILYDA VTEKLTRREV EAKFCNLSLS SNSLCRLYKF IEQKGDLQDL MPTINSLIKQ KTGIAQLVKY GLKDLEEVVG LLKKLGIKLQ VLINLGLVYK VQQHNGIIFQ FVAFIKRRQR AVPEILAAGG RYDLLIPQFR GPQALGPVPT AIGVSIAIDK ISAAVLNMEE SVTISSCDLL VVSVGQMSMS RAINLTQKLW TAGITAEIMY DWSQSQEELQ EYCRHHEITY VALVSDKEGS HVKVKSFEKE RQTEKRVLET ELVDHVLQKL RTKVTDERNG REASDNLAVQ NLKGSFSNAS GLFEIHGATV VPIVSVLAPE KLSASTRRRY ETQVQTRLQT SLANLHQKSS EIEILAVDLP KETILQFLSL EWDADEQAFN TTVKQLLSRL PKQRYLKLVC DEIYNIKVEK KVSVLFLYSY RDDYYRILF

Sequence without tag. The proposed Strep-Tag is based on experience s with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.

Characteristics:

Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- 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 will ensure that you receive a correctly folded protein.

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.

Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to

Product Details

	produce even the most difficult-to-express proteins, including those that require post-translational modifications. • During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein! Concentration: • The concentration of our recombinant proteins is measured using the absorbance at 280nm. • The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer. • We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.
Purification:	Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®): 1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE. 2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.
Purity:	>80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Endotoxin Level:	Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)
Grade:	Crystallography grade

Target Details

Target:	GCN2 (EIF2AK4)
Alternative Name:	EIF2AK4 (EIF2AK4 Products)
Background:	EIF-2-alpha kinase GCN2 (EC 2.7.11.1) (Eukaryotic translation initiation factor 2-alpha kinase 4) (GCN2-like protein),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:25329545, PubMed:32610081). Plays a role as an activator of the integrated stress response (ISR) required for adaptation to amino acid starvation (By similarity). EIF2S1/eIF-2-alpha phosphorylation in response to stress converts EIF2S1/eIF-2-

Target Details

	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:32610081). Binds uncharged tRNAs (By similarity). Required for the translational induction of protein kinase PRKCH following amino acid starvation (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:26102367). Plays a role in the consolidation of synaptic plasticity, learning as well as formation of long-term memory (By similarity). Plays a role in neurite outgrowth inhibition (By similarity). Plays a proapoptotic role in response to glucose deprivation (By similarity). 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 (By similarity). Plays a role in the antiviral response against alphavirus infection, impairs early viral mRNA translation of the incoming genomic virus RNA, thus preventing alphavirus replication (By similarity). {ECO:0000250|UniProtKB:P15442, ECO:0000250|UniProtKB:Q9QZ05, ECO:0000269|PubMed:25329545, ECO:0000269|PubMed:26102367, ECO:0000269|PubMed:32610081}., FUNCTION: (Microbial infection) Plays a role in modulating the adaptive immune response to yellow fever virus infection, promotes dendritic cells to initiate autophagy and antigene presentation to both CD4(+) and CD8(+) T-cells under amino acid starvation (PubMed:24310610). {ECO:0000269|PubMed:24310610}.
Molecular Weight:	186.9 kDa
UniProt:	Q9P2K8
Pathways:	ER-Nucleus Signaling, Hepatitis C

Application Details

Application Notes:	In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
Comment:	ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational

Application Details

	modifications. During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)

Images

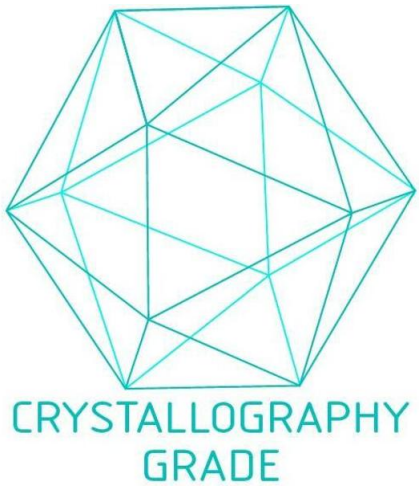

Image 1. „Crystallography Grade“ protein due to multi-step, protein-specific purification process