Datasheet for ABIN3082239

IRGM Protein (AA 1-181) (Strep Tag)

1 Image

Go to Product page

Overview

Quantity:	1 mg
Target:	IRGM
Protein Characteristics:	AA 1-181
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This IRGM protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), ELISA, Western Blotting (WB)

Product Details

Sequence:	MEAMNVEKAS ADGNLPEVIS NIKETLKIVS RTPVNITMAG DSGNGMSTFI SALRNTGHEG KASPPTELVK ATQRCASYFS SHFSNVVLWD LPGTGSATTT LENYLMEMQF NRYDFIMVAS AQFSMNHVML AKTAEDMGKK FYIVWTKLDM DLSTGALPEV QLLQIRENVL ENLQKERVCE Y **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 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:	IRGM
Alternative Name:	IRGM (IRGM Products)
Background:	Immunity-related GTPase family M protein (EC 3.6.5.-) (Immunity-related GTPase family M protein 1) (Interferon-inducible protein 1) (LPS-stimulated RAW 264.7 macrophage protein 47 homolog) (LRG-47),FUNCTION: Immunity-related GTPase that plays important roles in innate immunity and inflammatory response (PubMed:16888103, PubMed:19165925, PubMed:25891078). Acts as a dynamin-like protein that binds to intracellular membranes and promotes remodeling and trafficking of those membranes (By similarity). Required for clearance of acute protozoan and bacterial infections by interacting with autophagy and lysosome regulatory proteins, thereby promoting the fusion of phagosomes with lysosomes for efficient degradation of cargo including microbes (PubMed:16888103, PubMed:25891078, PubMed:29420192, PubMed:32939830). Regulates selective autophagy, including xenophagy and mitophagy, both directly and indirectly (PubMed:16888103, PubMed:25891078, PubMed:29420192, PubMed:32939830). Directly regulates autophagy by acting as a molecular adapter that promotes the coassembly of the core autophagy machinery to mediate antimicrobial defense: IRGM (1) activates AMPK, which in turn phosphorylates ULK1 and BECN1 to induce autophagy, (2) promotes the coassembly of ULK1 and BECN1, enhancing BECN1-interacting partners and (3) influences the composition of the BECN1 complex, by competing with the negative regulators BCL2 and RUBCN, to trigger autophagy (PubMed:25891078). Also activates autophagy by promoting recruitment of STX17 to autophagosomes (PubMed:29420192). In collaboration with ATG8 proteins, regulate lysosomal biogenesis, a fundamental process for any autophagic pathway, by promoting TFEB dephosphorylation (PubMed:32753672). Also modulates autophagy by assisting with autophagosome formation and preventing lysosomal deacidification (By similarity). While activating autophagy, acts as a key negative regulator of the inflammatory and interferon responses both by (1) promoting mitophagy and (2) mediating autophagy-dependent degradation of effectors of the inflammatory response (PubMed:30612879, PubMed:32715615, PubMed:36221902). Promotes degradation of damaged and IFNG/IFN-gamma-stressed mitochondria via mitophagy, preventing cytosolic release of ligands that activate inflammation (PubMed:32715615). Acts as a suppressor of inflammation by promoting recruitment of inflammation effectors, such as CGAS, RIGI/RIG-I and NLRP3, to autophagosome membranes, leading to their SQSTM1/p62-dependent autophagic degradation (PubMed:30612879, PubMed:32715615). Also directly inhibits assembly of the NLRP3 inflammasome by preventing the association between NLRP3 and PYCARD (PubMed:30612879). Acts as a negative regulator of antiviral innate immune response by suppressing the RIPK2-dependent pro-

Target Details

	inflammatory response: mediates recruitment of RIPosomes, composed of RIPK2 and NOD1 or NOD2, to autophagosome membranes, promoting their SQSTM1/p62-dependent autophagic degradation (PubMed:34467632, PubMed:36221902). {ECO:0000250|UniProtKB:Q60766, ECO:0000269|PubMed:16888103, ECO:0000269|PubMed:19165925, ECO:0000269|PubMed:25891078, ECO:0000269|PubMed:29420192, ECO:0000269|PubMed:30612879, ECO:0000269|PubMed:32715615, ECO:0000269|PubMed:32753672, ECO:0000269|PubMed:32939830, ECO:0000269|PubMed:34467632, ECO:0000269|PubMed:36221902}., FUNCTION: [Isoform IRGMd]: Acts as a positive regulator of mitophagy in response to intracellular mycobacteria infection: specifically binds cardiolipin, leading to its translocation to mitochondria, where it promotes affected mitochondrial fission and mitophagy. {ECO:0000269|PubMed:21102437}., FUNCTION: (Microbial infection) Following infection by hepatitis C virus (HCV), promotes HCV-triggered membrane remodeling, leading to autophagy and Golgi fragmentation, a step required for HCV replication. {ECO:0000269|PubMed:28389568}.
Molecular Weight:	20.1 kDa
UniProt:	A1A4Y4

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 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