Datasheet for ABIN3081068

GSDMD Protein (AA 1-484) (Strep Tag)

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Overview

Quantity:	250 µg
Target:	GSDMD
Protein Characteristics:	AA 1-484
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This GSDMD protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Brand:	AliCE®
Sequence:	MGSAFERVVR RVVQELDHGG EFIPVTSLQS STGFQPYCLV VRKPSSSWFW KPRYKCVNLS IKDILEPDAA EPDVQRGRSF HFYDAMDGQI QGSVELAAPG QAKIAGGAAV SDSSSTSMNV YSLSVDPNTW QTLLHERHLR QPEHKVLQQL RSRGDNVYVV TEVLQTQKEV EVTRTHKREG SGRFSLPGAT CLQGEGQGHL SQKKTVTIPS GSTLAFRVAQ LVIDSDLDVL LFPDKKQRTF QPPATGHKRS TSEGAWPQLP SGLSMMRCLH NFLTDGVPAE GAFTEDFQGL RAEVETISKE LELLDRELCQ LLLEGLEGVL RDQLALRALE EALEQGQSLG PVEPLDGPAG AVLECLVLSS GMLVPELAIP VVYLLGALTM LSETQHKLLA EALESQTLLG PLELVGSLLE QSAPWQERST MSLPPGLLGN SWGEGAPAWV LLDECGLELG EDTPHVCWEP QAQGRMCALY ASLALLSGLS QEPH **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 in one-step affinity chromatography • 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 try to ensure that you receive soluble 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 against its specific reference buffer. • We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.
Purification:	One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (AliCE®).
Purity:	> 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC).
Grade:	custom-made

Target Details

Target:	GSDMD
Alternative Name:	GSDMD (GSDMD Products)
Background:	Gasdermin-D (Gasdermin domain-containing protein 1) [Cleaved into: Gasdermin-D, N-terminal (GSDMD-NT) (hGSDMD-NTD), Gasdermin-D, C-terminal (GSDMD-CT) (hGSDMD-CTD), Gasdermin-D, p13 (Gasdermin-D, 13 kDa) (13 kDa GSDMD), Gasdermin-D, p40],FUNCTION: [Gasdermin-D]: Precursor of a pore-forming protein that plays a key role in host defense against pathogen infection and danger signals (PubMed:26375003, PubMed:26375259, PubMed:27281216). This form constitutes the precursor of the pore-forming protein: upon cleavage, the released N-terminal moiety (Gasdermin-D, N-terminal) binds to membranes and forms pores, triggering pyroptosis (PubMed:26375003, PubMed:26375259, PubMed:27281216). {ECO:0000269|PubMed:26375003, ECO:0000269|PubMed:26375259, ECO:0000269|PubMed:27281216}., FUNCTION: [Gasdermin-D, N-terminal]: Promotes pyroptosis in response to microbial infection and danger signals (PubMed:26375003, PubMed:26375259, PubMed:27418190, PubMed:28392147, PubMed:32820063, PubMed:34289345). Produced by the cleavage of gasdermin-D by inflammatory caspases CASP1, CASP4 or CASP5 in response to canonical, as well as non-canonical (such as cytosolic LPS) inflammasome activators (PubMed:26375003, PubMed:26375259, PubMed:27418190). After cleavage, moves to the plasma membrane where it strongly binds to inner leaflet lipids, including monophosphorylated phosphatidylinositols, such as phosphatidylinositol 4-phosphate, bisphosphorylated phosphatidylinositols, such as phosphatidylinositol (4,5)-bisphosphate, as well as phosphatidylinositol (3,4,5)-bisphosphate, and more weakly to phosphatidic acid and phosphatidylserine (PubMed:27281216, PubMed:29898893, PubMed:36227980). Homooligomerizes within the membrane and forms pores of 10-15 nanometers (nm) of inner diameter, allowing the release of mature interleukin-1 (IL1B and IL18) and triggering pyroptosis (PubMed:27418190, PubMed:27281216, PubMed:29898893, PubMed:33883744). Gasdermin pores also allow the release of mature caspase-7 (CASP7) (By similarity). In some, but not all, cells types, pyroptosis is followed by pyroptotic cell death, which is caused by downstream activation of ninjurins (NINJ1 or NINJ2), which mediate membrane rupture (cytolysis) (PubMed:33472215, PubMed:37198476). Also forms pores in the mitochondrial membrane, resulting in release of mitochondrial DNA (mtDNA) into the cytosol (By similarity). Gasdermin-D, N-terminal released from pyroptotic cells into the extracellular milieu rapidly binds to and kills both Gram-negative and Gram-positive bacteria, without harming neighboring mammalian cells, as it does not disrupt the plasma membrane from the outside due to lipid-binding specificity (PubMed:27281216). Under cell culture conditions, also active against intracellular bacteria, such as Listeria monocytogenes (By similarity). Also active in response to MAP3K7/TAK1

Target Details

	inactivation by Yersinia toxin YopJ, which triggers cleavage by CASP8 and subsequent activation (By similarity). Strongly binds to bacterial and mitochondrial lipids, including cardiolipin (PubMed:27281216). Does not bind to unphosphorylated phosphatidylinositol, phosphatidylethanolamine nor phosphatidylcholine (PubMed:27281216). {ECO:0000250|UniProtKB:Q9D8T2, ECO:0000269|PubMed:26375003, ECO:0000269|PubMed:26375259, ECO:0000269|PubMed:27281216, ECO:0000269|PubMed:27418190, ECO:0000269|PubMed:28392147, ECO:0000269|PubMed:29898893, ECO:0000269|PubMed:32820063, ECO:0000269|PubMed:33472215, ECO:0000269|PubMed:33883744, ECO:0000269|PubMed:34289345, ECO:0000269|PubMed:36227980, ECO:0000269|PubMed:37198476}., FUNCTION: [Gasdermin-D, p13]: Transcription coactivator produced by the cleavage by CASP3 or CASP7 in the upper small intestine in response to dietary antigens (By similarity). Required to maintain food tolerance in small intestine: translocates to the nucleus and acts as a coactivator for STAT1 to induce the transcription of CIITA and MHC class II molecules, which in turn induce type 1 regulatory T (Tr1) cells in upper small intestine (By similarity). {ECO:0000250|UniProtKB:Q9D8T2}., FUNCTION: [Gasdermin-D, p40]: Produced by the cleavage by papain allergen (PubMed:35794369). After cleavage, moves to the plasma membrane and homooligomerizes within the membrane and forms pores of 10-15 nanometers (nm) of inner diameter, allowing the specific release of mature interleukin-33 (IL33), promoting type 2 inflammatory immune response (PubMed:35794369). {ECO:0000269|PubMed:35794369}.
Molecular Weight:	52.8 kDa
UniProt:	P57764
Pathways:	Inflammasome

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

Application Details

	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. Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol **Might differ depending on protein.**
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months