Datasheet for ABIN3094146

NLRP3 Protein (AA 1-1036) (Strep Tag)

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Overview

Quantity:	1 mg
Target:	NLRP3
Protein Characteristics:	AA 1-1036
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This NLRP3 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MKMASTRCKL ARYLEDLEDV DLKKFKMHLE DYPPQKGCIP LPRGQTEKAD HVDLATLMID FNGEEKAWAM AVWIFAAINR RDLYEKAKRD EPKWGSDNAR VSNPTVICQE DSIEEEWMGL LEYLSRISIC KMKKDYRKKY RKYVRSRFQC IEDRNARLGE SVSLNKRYTR LRLIKEHRSQ QEREQELLAI GKTKTCESPV SPIKMELLFD PDDEHSEPVH TVVFQGAAGI GKTILARKMM LDWASGTLYQ DRFDYLFYIH CREVSLVTQR SLGDLIMSCC PDPNPPIHKI VRKPSRILFL MDGFDELQGA FDEHIGPLCT DWQKAERGDI LLSSLIRKKL LPEASLLITT RPVALEKLQH LLDHPRHVEI LGFSEAKRKE YFFKYFSDEA QARAAFSLIQ ENEVLFTMCF IPLVCWIVCT GLKQQMESGK SLAQTSKTTT AVYVFFLSSL LQPRGGSQEH GLCAHLWGLC SLAADGIWNQ KILFEESDLR NHGLQKADVS AFLRMNLFQK EVDCEKFYSF IHMTFQEFFA AMYYLLEEEK EGRTNVPGSR LKLPSRDVTV LLENYGKFEK GYLIFVVRFL FGLVNQERTS YLEKKLSCKI SQQIRLELLK WIEVKAKAKK LQIQPSQLEL FYCLYEMQEE DFVQRAMDYF PKIEINLSTR MDHMVSSFCI ENCHRVESLS LGFLHNMPKE EEEEEKEGRH LDMVQCVLPS SSHAACSHGL

VNSHLTSSFC RGLFSVLSTS QSLTELDLSD NSLGDPGMRV LCETLQHPGC NIRRLWLGRC GLSHECCFDI SLVLSSNQKL VELDLSDNAL GDFGIRLLCV GLKHLLCNLK KLWLVSCCLT SACCQDLASV LSTSHSLTRL YVGENALGDS GVAILCEKAK NPQCNLQKLG LVNSGLTSVC CSALSSVLST NQNLTHLYLR GNTLGDKGIK LLCEGLLHPD CKLQVLELDN CNLTSHCCWD LSTLLTSSQS LRKLSLGNND LGDLGVMMFC EVLKQQSCLL QNLGLSEMYF NYETKSALET LQEEKPELTV VFEPSW

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.

Product Details

- 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)

Target Details

Target:	NLRP3
Alternative Name:	NLRP3 (NLRP3 Products)
Background:	NACHT, LRR and PYD domains-containing protein 3 (EC 3.6.4.-) (Angiotensin/vasopressin receptor AII/AVP-like) (Caterpiller protein 1.1) (CLR1.1) (Cold-induced autoinflammatory syndrome 1 protein) (Cryopyrin) (PYRIN-containing APAF1-like protein 1),FUNCTION: Sensor component of the NLRP3 inflammasome, which mediates inflammasome activation in response to defects in membrane integrity, leading to secretion of inflammatory cytokines IL1B and IL18 and pyroptosis (PubMed:16407889, PubMed:18604214, PubMed:18403674, PubMed:23582325, PubMed:28847925, PubMed:33231615, PubMed:34133077, PubMed:34341353, PubMed:27929086, PubMed:28656979, PubMed:25686105, PubMed:30487600, PubMed:30612879, PubMed:31086327, PubMed:31086329, PubMed:31189953, PubMed:34512673, PubMed:36442502). In response to pathogens and other damage-associated signals that affect the integrity of membranes, initiates the formation of the inflammasome polymeric complex composed of NLRP3, CASP1 and PYCARD/ASC (PubMed:16407889, PubMed:18403674, PubMed:28847925, PubMed:33231615, PubMed:34133077, PubMed:34341353, PubMed:27432880, PubMed:31189953, PubMed:36142182, PubMed:36442502). Recruitment of pro-caspase-1 (proCASP1) to the NLRP3 inflammasome promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D (GSDMD), promoting

cytokine secretion and pyroptosis (PubMed:23582325, PubMed:28847925, PubMed:33231615, PubMed:34133077, PubMed:34341353, PubMed:31189953). Activation of NLRP3 inflammasome is also required for HMGB1 secretion, stimulating inflammatory responses (PubMed:22801494). Under resting conditions, ADP-bound NLRP3 is autoinhibited (PubMed:35114687). NLRP3 activation stimuli include extracellular ATP, nigericin, reactive oxygen species, crystals of monosodium urate or cholesterol, amyloid-beta fibers, environmental or industrial particles and nanoparticles, such as asbestos, silica, aluminum salts, cytosolic dsRNA, etc (PubMed:16407889, PubMed:18604214, PubMed:18403674, PubMed:19414800, PubMed:23871209). Almost all stimuli trigger intracellular K(+) efflux (By similarity). These stimuli lead to membrane perturbation and activation of NLRP3 (By similarity). Upon activation, NLRP3 is transported to microtubule organizing center (MTOC), where it is unlocked by NEK7, leading to its relocalization to dispersed trans-Golgi network (dTGN) vesicle membranes and formation of an active inflammasome complex (PubMed:36442502). Associates with dTGN vesicle membranes by binding to phosphatidylinositol 4-phosphate (PtdIns4P) (PubMed:30487600, PubMed:34554188). Shows ATPase activity (PubMed:17483456). {ECO:0000250|UniProtKB:Q8R4B8, ECO:0000269|PubMed:16407889, ECO:0000269|PubMed:17483456, ECO:0000269|PubMed:18403674, ECO:0000269|PubMed:18604214, ECO:0000269|PubMed:19414800, ECO:0000269|PubMed:22801494, ECO:0000269|PubMed:23582325, ECO:0000269|PubMed:23871209, ECO:0000269|PubMed:25686105, ECO:0000269|PubMed:27432880, ECO:0000269|PubMed:27929086, ECO:0000269|PubMed:28656979, ECO:0000269|PubMed:28847925, ECO:0000269|PubMed:30487600, ECO:0000269|PubMed:30612879, ECO:0000269|PubMed:31086327, ECO:0000269|PubMed:31086329, ECO:0000269|PubMed:31189953, ECO:0000269|PubMed:33231615, ECO:0000269|PubMed:34133077, ECO:0000269|PubMed:34341353, ECO:0000269|PubMed:34554188, ECO:0000269|PubMed:35114687, ECO:0000269|PubMed:36142182, ECO:0000269|PubMed:36442502}., FUNCTION: Independently of inflammasome activation, regulates the differentiation of T helper 2 (Th2) cells and has a role in Th2 cell-dependent asthma and tumor growth (By similarity). During Th2 differentiation, required for optimal IRF4 binding to IL4 promoter and for IRF4-dependent IL4 transcription (By similarity). Binds to the consensus DNA sequence 5'-GRRGGNRGAG-3' (By similarity). May also participate in the transcription of IL5, IL13, GATA3, CCR3, CCR4 and MAF (By similarity). {ECO:0000250|UniProtKB:Q8R4B8}.

Target Details

Molecular Weight:	118.2 kDa
UniProt:	Q96P20
Pathways:	Cellular Response to Molecule of Bacterial Origin, Positive Regulation of Endopeptidase Activity, 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 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)