Datasheet for ABIN3094199

NOD1 Protein (AA 1-953) (Strep Tag)

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Overview

Quantity:	1 mg
Target:	NOD1
Protein Characteristics:	AA 1-953
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This NOD1 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MEEQGHSEME IIPSESHPHI QLLKSNRELL VTHIRNTQCL VDNLLKNDYF SAEDAEIVCA CPTQPDKVRK ILDLVQSKGE EVSEFFLYLL QQLADAYVDL RPWLLEIGFS PSLLTQSKVV VNTDPVSRYT QQLRHHLGRD SKFVLCYAQK EELLLEEIYM DTIMELVGFS NESLGSLNSL ACLLDHTTGI LNEQGETIFI LGDAGVGKSM LLQRLQSLWA TGRLDAGVKF FFHFRCRMFS CFKESDRLCL QDLLFKHYCY PERDPEEVFA FLLRFPHVAL FTFDGLDELH SDLDLSRVPD SSCPWEPAHP LVLLANLLSG KLLKGASKLL TARTGIEVPR QFLRKKVLLR GFSPSHLRAY ARRMFPERAL QDRLLSQLEA NPNLCSLCSV PLFCWIIFRC FQHFRAAFEG SPQLPDCTMT LTDVFLLVTE VHLNRMQPSS LVQRNTRSPV ETLHAGRDTL CSLGQVAHRG MEKSLFVFTQ EEVQASGLQE RDMQLGFLRA LPELGPGGDQ QSYEFFHLTL QAFFTAFFLV LDDRVGTQEL LRFFQEWMPP AGAATTSCYP PFLPFQCLQG SGPAREDLFK NKDHFQFTNL FLCGLLSKAK QKLLRHLVPA AALRRKRKAL WAHLFSSLRG YLKSLPRVQV ESFNQVQAMP TFIWMLRCIY ETQSQKVGQL AARGICANYL KLTYCNACSA DCSALSFVLH HFPKRLALDL DNNNLNDYGV

RELQPCFSRL TVLRLSVNQI TDGGVKVLSE ELTKYKIVTY LGLYNNQITD VGARYVTKIL DECKGLTHLK LGKNKITSEG GKYLALAVKN SKSISEVGMW GNQVGDEGAK AFAEALRNHP SLTTLSLASN GISTEGGKSL ARALQQNTSL EILWLTQNEL NDEVAESLAE MLKVNQTLKH LWLIQNQITA KGTAQLADAL QSNTGITEIC LNGNLIKPEE AKVYEDEKRI ICF

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.

Product Details

	• 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:	NOD1
Alternative Name:	NOD1 (NOD1 Products)
Background:	Nucleotide-binding oligomerization domain-containing protein 1 (hNod1) (Caspase recruitment domain-containing protein 4),FUNCTION: Pattern recognition receptor (PRR) that detects bacterial peptidoglycan fragments and other danger signals and thus participates in both innate and adaptive immune responses (PubMed:11058605, PubMed:12796777, PubMed:12791997, PubMed:15044951, PubMed:16172124, PubMed:19043560, PubMed:22672233, PubMed:27099311). Specifically recognizes and binds gamma-D-glutamyl-meso-diaminopimelic acid (iE-DAP), a dipeptide present in peptidoglycan of Gram-negative bacteria (PubMed:12871942, PubMed:12796777, PubMed:12791997, PubMed:16211083, PubMed:16172124). Preferentially binds iE-DAP in tripeptide-containing muropeptides (MurNAc-TriDAP or TriDAP) (PubMed:16211083). Ligand binding triggers oligomerization that facilitates the binding and subsequent activation of the proximal adapter receptor-interacting RIPK2 (PubMed:12796777, PubMed:12791997, PubMed:17054981). Following recruitment, RIPK2 undergoes 'Met-1'- (linear) and 'Lys-63'-linked polyubiquitination by E3 ubiquitin-protein ligases XIAP, BIRC2, BIRC3 and the LUBAC complex, becoming a scaffolding protein for downstream effectors, triggering activation of the NF-kappa-B and MAP kinases signaling (PubMed:10880512, PubMed:12791997, PubMed:19043560). This in turn leads to the transcriptional activation of hundreds of genes involved in immune response (PubMed:10880512, PubMed:19043560). Also acts as a regulator of antiviral response elicited by dsRNA and the expression of RLR pathway members by targeting IFIH1 and TRAF3 to

Target Details

	modulate the formation of IFIH1-MAVS and TRAF3-MAVS complexes leading to increased transcription of type I IFNs (PubMed:32169843). Also acts as a regulator of autophagy via its interaction with ATG16L1, possibly by recruiting ATG16L1 at the site of bacterial entry (By similarity). Besides recognizing pathogens, also involved in the endoplasmic reticulum stress response: acts by sensing and binding to the cytosolic metabolite sphingosine-1-phosphate generated in response to endoplasmic reticulum stress, initiating an inflammation process that leads to activation of the NF-kappa-B and MAP kinases signaling (PubMed:27007849, PubMed:33942347). In addition, plays a role in insulin trafficking in beta cells in a cell-autonomous manner (By similarity). Mechanistically, upon recognizing cognate ligands, NOD1 and RIPK2 localize to insulin vesicles where they recruit RAB1A to direct insulin trafficking through the cytoplasm (By similarity). {ECO:0000250|UniProtKB:Q8BHB0, ECO:0000269|PubMed:10880512, ECO:0000269|PubMed:11058605, ECO:0000269|PubMed:12791997, ECO:0000269|PubMed:12796777, ECO:0000269|PubMed:12871942, ECO:0000269|PubMed:15044951, ECO:0000269|PubMed:16172124, ECO:0000269|PubMed:16211083, ECO:0000269|PubMed:17054981, ECO:0000269|PubMed:19043560, ECO:0000269|PubMed:22672233, ECO:0000269|PubMed:27007849, ECO:0000269|PubMed:27099311, ECO:0000269|PubMed:32169843, ECO:0000269|PubMed:33942347}., FUNCTION: [Isoform 3]: In contrast to isoform 1, does not efficiently recognize and bind gamma-D-glutamyl-meso-diaminopimelic acid (iE-DAP) ligand. {ECO:0000269|PubMed:16172124}.
Molecular Weight:	107.7 kDa
UniProt:	Q9Y239
Pathways:	Activation of Innate immune Response, Positive Regulation of Endopeptidase Activity, Toll-Like Receptors Cascades, 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.

Application Details

	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)