Datasheet for ABIN3134938

# Nlrp1a Protein (AA 1-1182) (Strep Tag)

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## Overview

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| Quantity: | 250 µg |
| Target: | Nlrp1a (NLRP1A) |
| Protein Characteristics: | AA 1-1182 |
| Origin: | Mouse |
| Source: | Cell-free protein synthesis (CFPS) |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This Nlrp1a protein is labelled with Strep Tag. |
| Application: | ELISA, SDS-PAGE (SDS), Western Blotting (WB) |

## Product Details

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| Brand: | AliCE® |
| Sequence: | MEESQSKQES STKVAQHEGQ EDVDPTFKTK KLMEVELMKH RVQLERNLKL RTFPGARTKQ VKEALYPLLT WSSKSKNLFQ NFTKLLLFKK LCQRGSENLV RESWYPCVPE EEAHMIDIQD LFGPNLGTQK KPQLVIIEGA AGIGKSTLAR LVKRAWKEGK LYRNDFHHVF FFSCRELAQY EQLSLAELIV QGQEVPTAPI RQILSHPEKL LFILDGIDEP AWVLADQNPE LCLHWSQTQP VHTLLGSLLG KSILPGASFL LTTRTTALQK FIPSLEQPCQ VEVLGFTLFE RKNYFYKYFG KKKGGVTTFT LVKSNSALLT LCEVPWVCWL VCTCLKKQME QGGELSLTSQ TTTALCLKYL SLTIPGQHMR TQLRDLCSLA AEGVCQRRTL FSESDLCKQG LDEHAIASFL KIGVLQKQAS SLSYSFAHLC LQEFFAAMSY ILDDSEERHA DMKNDRIVET LVERYGRQNL FEAPTVRFLF GLLSKEELKK IEKLFSCSLH GKTKLKLLWH ILGKSQPHQP PCLGLLHCLY ENQDMELLTH VMHDLQGTIV PGPDDLAHTV LQTNVKHLVI QTDMDLMVVT FCIKFCCHVR SLQLNRKVQQ GHKFTAPGMV LYRWTPITDA SWKIFFSNLK LARNLEELDL SGNPLSYYAV HSLCTTLRKR |

GCQLKTLWLV ECGLTSTYCS LLASVLSARS SLTELDLQLN DLGDGGVKML CEGLRNPACN LSILWLDQAS LSDQVIAELR TLEAKNPKLL ISSTWKPHVM VPTMNMDKEE VGDSQALLKQ QRQQSGDKHM EPLGTEDEFW GPTGPVTTEV VDRERNLYRV QLPMAGSYHC PSTGLHFVVT RAVTIEIEFC AWSQYLDKTP LQQSHMVVGP LFDIKAEQGA VTAVYLPHFV ALQEGIVDSS LFHVAHFQEH GMVLETPARV EQHYAVLENP SFSPMGILLR MIPAVGHFIP ITSTTLIYYH LYLEDVTFHL YLVPNDCSIR KAIDDEEMKF QFVRINKPPP VDALYLGSRY IVSSSKLVEI IPKELELCYR SPGESQLFSE IDIGHMDSEI KLQIKDKRHM NLKWEALLKP GDLRPALPKI ATAPKDAPSL LHFMDQHREQ LVARVTSVDP LLDKLHGLVL SEDSYEVVRS ETTNQDKMRK LFSLSRSWSW DCKDQFYQAL KETHPHLVMD ILEKLGGVSV KS

**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!

## Product Details

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| | Concentration:<br>• The concentration of our recombinant proteins is measured using the absorbance at 280nm.<br>• The protein's absorbance will be measured against its specific reference buffer.<br>• 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

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| Target: | Nlrp1a (NLRP1A) |
| Alternative Name: | Nlrp1a |
| Background: | NACHT, LRR and PYD domains-containing protein 1a (EC 3.4.-.-) (Caspase recruitment domain-containing protein 7) (Death effector filament-forming ced-4-like apoptosis protein) (Nucleotide-binding domain and caspase recruitment domain) [Cleaved into: NACHT, LRR and PYD domains-containing protein 1a, C-terminus (Nlrp1a-CT), NACHT, LRR and PYD domains-containing protein 1a, N-terminus (Nlrp1a-NT)],FUNCTION: Acts as the sensor component of the Nlrp1a inflammasome, which mediates inflammasome activation in response to various pathogen-associated signals, leading to subsequent pyroptosis (PubMed:23219391). Inflammasomes are supramolecular complexes that assemble in the cytosol in response to pathogens and other damage-associated signals and play critical roles in innate immunity and inflammation (By similarity). Acts as a recognition receptor (PRR): recognizes specific pathogens and other damage-associated signals, and mediates the formation of the inflammasome polymeric complex (By similarity). In response to pathogen-associated signals, the N-terminal part of Nlrp1a is degraded by the proteasome, releasing the cleaved C-terminal part of the protein (NACHT, LRR and PYD domains-containing protein 1a, C-terminus), which polymerizes to initiate the formation of the inflammasome complex: the inflammasome recruits pro-caspase-1 (proCASP1) and promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D (GSDMD), leading to pyroptosis (By similarity). In the absence of GSDMD expression, the Nlrp1a inflammasome is able to recruit and activate CASP8, leading to activation of gasdermin-E (GSDME) (By similarity). Activation of Nlrp1a inflammasome is also required for HMGB1 secretion, the active cytokines and HMGB1 stimulate inflammatory responses (By similarity). |

## Target Details

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| | When activated in the bone marrow, induces the pyroptosis of hematopoietic stem cells and progenitor cells of both myeloid and lymphoid lineages, hence allowing the removal of damaged cells, and the release of IL1B, which induces granulopoiesis (PubMed:23219391). {ECO:0000250\|UniProtKB:Q9C000, ECO:0000269\|PubMed:23219391}., FUNCTION: [NACHT, LRR and PYD domains-containing protein 1a]: Constitutes the precursor of the Nlrp1a inflammasome, which mediates autoproteolytic processing within the FIIND domain to generate the N-terminal and C-terminal parts, which are associated non-covalently in absence of pathogens and other damage-associated signals. {ECO:0000250\|UniProtKB:Q9C000}., FUNCTION: [NACHT, LRR and PYD domains-containing protein 1a, N-terminus]: Regulatory part that prevents formation of the Nlrp1a inflammasome: in absence of pathogens and other damage-associated signals, interacts with the C-terminal part of Nlrp1a (NACHT, LRR and PYD domains-containing protein 1a, C-terminus), preventing activation of the Nlrp1a inflammasome (By similarity). In response to pathogen-associated signals, this part is ubiquitinated and degraded by the proteasome, releasing the cleaved C-terminal part of the protein, which polymerizes and forms the Nlrp1a inflammasome (By similarity). {ECO:0000250\|UniProtKB:Q9C000}., FUNCTION: [NACHT, LRR and PYD domains-containing protein 1a, C-terminus]: Constitutes the active part of the Nlrp1a inflammasome (By similarity). In absence of pathogens and other damage-associated signals, interacts with the N-terminal part of Nlrp1a (NACHT, LRR and PYD domains-containing protein 1a, N-terminus), preventing activation of the Nlrp1a inflammasome (By similarity). In response to pathogen-associated signals, the N-terminal part of Nlrp1a is degraded by the proteasome, releasing this form, which polymerizes to form the Nlrp1a inflammasome complex: the Nlrp1a inflammasome complex then directly recruits pro-caspase-1 (proCASP1) and promotes caspase-1 (CASP1) activation, leading to gasdermin-D (GSDMD) cleavage and subsequent pyroptosis (By similarity). {ECO:0000250\|UniProtKB:Q9C000}. |
| Molecular Weight: | 134.3 kDa |
| UniProt: | Q2LKU9 |

## Application Details

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| 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 |

## Application Details

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| | even the most difficult-to-express proteins, including those that require post-translational modifications.<br>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

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| Format: | Liquid |
| Buffer: | The buffer composition is at the discretion of the manufacturer.<br>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 |