Datasheet for ABIN7564355

# NOD1 Protein (AA 1-953) (His tag)

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## Overview

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| Quantity: | 1 mg |
| Target: | NOD1 |
| Protein Characteristics: | AA 1-953 |
| Origin: | Mouse |
| Source: | HEK-293 Cells |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This NOD1 protein is labelled with His tag. |

## Product Details

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| Purpose: | Custom-made recombinant Nod1 Protein expressed in mammalian cells. |
| Sequence: | MEEHGHHEME GTPLGCHSHI KLLKINREHL VTNIRNTQCL VDNLLENGYF SAEDAEIVCA CPTKPDKVRK ILDLVQSKGE EVSEFFLYVL QQLEDAYVDL RLWLSEIGFS PSQLIRTKTI VNTDPVSRYT QQLRHQLGRD SKFMLCYAQK EDLLLEETYM DTLMELVGFN NENLGSLGGL DCLLDHSTGV LNEHGETVFV FGDAGVGKSM LLQRLQSLWA SGRLTSTAKF FFHFRCRMFS CFKESDMLSL QDLLFKHFCY PEQDPEEVFS FLLRFPHTAL FTFDGLDELH SDFDLSRVPD SCCPWEPAHP LVLLANLLSG RLLKGAGKLL TARTGVEVPR QLLRKKVLLR GFSPSHLRAY ARRMFPERTA QEHLLQQLDA NPNLCSLCGV PLFCWIIFRC FQHFQTVFEG SSSQLPDCAV TLTDVFLLVT EVHLNRPQPS SLVQRNTRSP AETLRAGWRT LHALGEVAHR GTDKSLFVFG QEEVQASKLQ EGDLQLGFLR ALPDVGPEQG QSYEFFHLTL QAFFTAFFLV ADDKVSTREL LRFFREWTSP GEATSSSCHS SFFSFQCLGG RSRLGPDPFR NKDHFQFTNL FLCGLLAKAR QKLLRQLVPK AILRRKRKAL WAHLFASLRS YLKSLPRVQS GGFNQVHAMP TFLWMLRCIY ETQSQKVGRL AARGISADYL KLAFCNACSA DCSALSFVLH HFHRQLALDL DNNNLNDYGV |

## Product Details

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| | QELQPCFSRL TVIRLSVNQI TDTGVKVLCE ELTKYKIVTF LGLYNNQITD IGARYVAQIL DECRGLKHLK LGKNRITSEG GKCVALAVKN STSIVDVGMW GNQIGDEGAK AFAEALKDHP SLTTLSLAFN GISPEGGKSL AQALKQNTTL TVIWLTKNEL NDESAECFAE MLRVNQTLRH LWLIQNRITA KGTAQLARAL QKNTAITEIC LNGNLIKPEE AKVFENEKRI ICF **Sequence without tag. The proposed Purification-Tag is based on experiences 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.** |
| Specificity: | If you are looking for a specific domain and are interested in a partial protein or a different isoform, please contact us regarding an individual offer. |
| Characteristics: | Key Benefits:<br>• Made to order protein - from design to production - by highly experienced protein experts.<br>• Protein expressed in mammalian cells and purified in one-step affinity chromatography<br>• The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins.<br>• State-of-the-art algorithm used for plasmid design (Gene synthesis).<br><br>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.<br><br>If you are not interested in a full length protein, please contact us for individual protein fragments.<br><br>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. |
| Purity: | > 90 % as determined by Bis-Tris PAGE, anti-tag ELISA, Western Blot and analytical SEC (HPLC) |
| Grade: | custom-made |

## Target Details

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| Target: | NOD1 |
| Alternative Name: | Nod1 (NOD1 Products) |
| Background: | Nucleotide-binding oligomerization domain-containing protein 1 (mNod1),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:12796777, PubMed:21715553). Specifically recognizes and binds gamma-D-glutamyl- |

## Target Details

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| | meso-diaminopimelic acid (iE-DAP), a dipeptide present in peptidoglycan of Gram-negative bacteria (PubMed:12796777, PubMed:16211083). Preferentially binds iE-DAP in tetrapeptide-containing muropeptides (MurNAc-TetraDAP or TetraDAP) (PubMed:16211083). Ligand binding triggers oligomerization that facilitates the binding and subsequent activation of the proximal adapter receptor-interacting RIPK2 (By similarity). 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 (By similarity). This in turn leads to the transcriptional activation of hundreds of genes involved in immune response (By similarity). Also acts as a regulator of antiviral response elicited by dsRNA and the expression of RLR pathway members by targeting IFIH1 and TRAF3 to modulate the formation of IFIH1-MAVS and TRAF3-MAVS complexes leading to increased transcription of type I IFNs (By similarity). Also acts as a regulator of autophagy via its interaction with ATG16L1, possibly by recruiting ATG16L1 at the site of bacterial entry (PubMed:19898471). 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). In addition, plays a role in insulin trafficking in beta cells in a cell-autonomous manner (PubMed:21715553, PubMed:31201384). Mechanistically, upon recognizing cognate ligands, NOD1 and RIPK2 localize to insulin vesicles where they recruit RAB1A to direct insulin trafficking through the cytoplasm (PubMed:31201384). {ECO:0000250\|UniProtKB:Q9Y239, ECO:0000269\|PubMed:12796777, ECO:0000269\|PubMed:16211083, ECO:0000269\|PubMed:19898471, ECO:0000269\|PubMed:21715553, ECO:0000269\|PubMed:27007849, ECO:0000269\|PubMed:31201384}. |
| Molecular Weight: | 107.7 kDa |
| UniProt: | Q8BHB0 |
| Pathways: | Activation of Innate immune Response, Positive Regulation of Endopeptidase Activity, Toll-Like Receptors Cascades, Inflammasome |

## Application Details

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| Application Notes: | We expect the protein to work for functional studies. As the protein has not been tested for functional studies yet we cannot offer a guarantee though. |
| Restrictions: | For Research Use only |

## Handling

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| Format: | Liquid |
| Buffer: | The buffer composition is at the discretion of the manufacturer. |
| Handling Advice: | Avoid repeated freeze-thaw cycles. |
| Storage: | -80 °C |
| Storage Comment: | Store at -80°C. |
| Expiry Date: | 12 months |