

Recombinant Mouse NOD1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51729

Size: 10ug, 100ug

Protein Name: Nucleotide-binding oligomerization domain-containing protein 1 (mNod1)

Synonym: Nod1

UniProt ID: Q8BHB0

UniProt Link: www.uniprot.org/uniprotkb/Q8BHB0/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 953 AA

Molecular Weight: 108 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MEEHGHHEMEGTPLGCHSHIKLLKINREHLVTNIRNTQCLVDNLLENG YFSAEDAEIVCACPTKPDKV
RKILDVLVQSKGEEVSEFFLYVLQQLEDAYVDLRLWLSEIGFSPSQLIRTKTIVNTDPVSRYTQQLRHQL
GRDSKFMLCYAQKEDLLLEETYMDTLMELVGFNNENLGS LGGLDCLLDHSTGVLNEHGETVFVFGD
AGVGKSMMLLQRLQSLWASGRLTSTAKFFFHFRCRMFS CFKESDMLSLQDLLFKHFCYPEQDP EEEVF
SFLLRFPHTALFTFDGLDELHSDFDLSRVPDSCCPWEP AHPLVLLANLLSGRLLKGAGKLLTARTGV
EVPRQLLRKKVLLRGFSPSHLRAYARRMFPERTA QEHLLQQLDANPNLCSLCGVPLFCWIIIFRCFQH
FQTVFEGSSSQLPDCAVTLTDVFLLVTEVHLNRPQPSS LVQRNTRSPAETLRAGWRTLHALGEVAH
RGTDKSLFVFGQEEVQASKLQEGDLQLGFLRALPDVGPEQQQS YEFFHLLTLQAFFTAFFLVADDKV
STRELLRFFREWTSPGEATSSSCHSSFFSFQCLGGRSRLGPD PFRNKDHFQFTNLFLCGLLAKARQ
KLLRQLVLPKAILRRKRKALWAHLFASLSYLKSLPRVQSGGF NQVHAMPTFLWMLRCIYETQSQKVG
RLAARGISADYLKLAFCNACSADCSALS FVLHFFHRQLALDLDNNNLNDYGVQELQPCFSRLTVIRLS
VNQITDTGVKVLCEELTKYKIVTFLGLYNNQITDIGARYVAQ ILDECRGLKHLKLGKNRITSEGGKCVA
LAVKNSTSIQVGMWGNQIGDEGAFAEALKDHPSTLTL S LAFNGISPEGGKSLAQALKQNTTLTVI
WLTKNELNDESAECFAEMLRVNQTLRHLWLIQNRITAKGT AQLARALQKNTAITEICLNGNLIKPEEAK
VFENEKRIICF

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Nucleotide-binding oligomerization domain-containing protein 1 (mNod1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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-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).

Subcellular Localization: Cell membrane ; Lipid-anchor . Apical cell membrane . Basolateral cell membrane . Cytoplasm . Note=Detected in the cytoplasm and at the cell membrane. Following bacterial infection, localizes to bacterial entry sites in the cell membrane. Recruited to the basolateral and apical membranes in polarized epithelial cells.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.



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- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.