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Mouse Nod1 Antibody (Center) Blocking Peptide

Synthetic peptide
Catalog # BP19219c

Specification

Mouse Nod1 Antibody (Center) Blocking Peptide - Product Information

Primary Accession Q8BHB0

Mouse Nod1 Antibody (Center) Blocking Peptide - Additional Information

Gene ID 107607

Other Names
Nucleotide-binding oligomerization domain-containing protein 1, Caspase recruitment domain-containing protein 4, Nod1, Card4

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Mouse Nod1 Antibody (Center) Blocking Peptide - Protein Information

Name Nod1 {ECO:0000303|PubMed:16211083, ECO:0000312|MGI:MGI:1341839}

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).

Cellular Location
Cell membrane {ECO:0000250|UniProtKB:Q9Y239}; Lipid-anchor {ECO:0000250|UniProtKB:Q9Y239}. Apical cell membrane {ECO:0000250|UniProtKB:Q9Y239}. Basolateral cell membrane {ECO:0000250|UniProtKB:Q9Y239}. Cytoplasm {ECO:0000250|UniProtKB:Q9Y239}. 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 {ECO:0000250|UniProtKB:Q9Y239}

Tissue Location
Although ubiquitously expressed, NOD1 levels are more abundant in immune cells, the gastrointestinal tract, and adipose tissue.

Mouse Nod1 Antibody (Center) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

Mouse Nod1 Antibody (Center) Blocking Peptide - Images

Mouse Nod1 Antibody (Center) Blocking Peptide - Background

Enhances caspase-9-mediated apoptosis. Induces NF-kappa-B activity via RIPK2 and IKK-gamma. Confers responsiveness to intracellular bacterial lipopolysaccharides (LPS). Forms an intracellular sensing system along with ARHGEF2 for the detection of microbial effectors during cell invasion by pathogens (By similarity).

Mouse Nod1 Antibody (Center) Blocking Peptide - References

Moreno, L., et al. Br. J. Pharmacol. 160(8):1997-2007(2010)Iyer, J.K., et al. Infect. Immun. 78(6):2418-2428(2010)Watanabe, T., et al. J. Clin. Invest. 120(5):1645-1662(2010)Toma, C., et al. J. Immunol. 184(9):5287-5297(2010)Shigeoka, A.A., et al. J. Immunol. 184(5):2297-2304(2010)