10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Mouse Nod1 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP19219c

Product Information

Application	WB, E
Primary Accession	Q8BHB0
Other Accession	NP_001164478.1
Reactivity	Mouse
Predicted	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB39997
Calculated MW	107740
Antigen Region	556-584

Additional Information

Gene ID	107607
Other Names	Nucleotide-binding oligomerization domain-containing protein 1, Caspase recruitment domain-containing protein 4, Nod1, Card4
Target/Specificity	This Mouse Nod1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 556-584 amino acids from the Central region of mouse Nod1.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Nod1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

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.

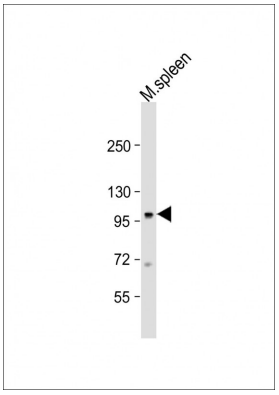
Background

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).

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)

Images



Anti-Mouse Nod1 Antibody (Center) at 1:1000 dilution + mouse spleen lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 108 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.