

CARD4 Antibody (C-term) Blocking Peptide
Synthetic peptide
Catalog # BP8720b**Specification**

CARD4 Antibody (C-term) Blocking Peptide - Product InformationPrimary Accession [Q9Y239](#)**CARD4 Antibody (C-term) Blocking Peptide - Additional Information****Gene ID** 10392**Other Names**

Nucleotide-binding oligomerization domain-containing protein 1, Caspase recruitment domain-containing protein 4, NOD1, CARD4

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP8720b](/products/AP8720b) was selected from the C-term region of human CARD4. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

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.

CARD4 Antibody (C-term) Blocking Peptide - Protein Information**Name** NOD1 {ECO:0000303|PubMed:10329646, ECO:0000312|HGNC:HGNC:16390}**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: [11058605](http://www.uniprot.org/citations/11058605), PubMed: [12796777](http://www.uniprot.org/citations/12796777), PubMed: [12791997](http://www.uniprot.org/citations/12791997), PubMed: [15044951](http://www.uniprot.org/citations/15044951), PubMed: [16172124](http://www.uniprot.org/citations/16172124), PubMed: [19043560](http://www.uniprot.org/citations/19043560), PubMed: [22672233](http://www.uniprot.org/citations/22672233), PubMed: [27099311](http://www.uniprot.org/citations/27099311)). Specifically recognizes and binds gamma-D-glutamyl-meso-diaminopimelic acid (iE- DAP), a dipeptide present

in peptidoglycan of Gram-negative bacteria (PubMed:12871942, PubMed:12796777, PubMed:12791997, PubMed:16211083, PubMed:16172124). Preferentially binds iE-DAP in tripeptide-containing muropeptides (MurNAc-TriDAP or TriDAP) (PubMed:16211083). Ligand binding triggers oligomerization that facilitates the binding and subsequent activation of the proximal adapter receptor-interacting RIPK2 (PubMed:12796777, PubMed:12791997, PubMed:17054981). 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 (PubMed:10880512, PubMed:12791997, PubMed:19043560). This in turn leads to the transcriptional activation of hundreds of genes involved in immune response (PubMed:10880512, PubMed:19043560). 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 (PubMed:32169843). Also acts as a regulator of autophagy via its interaction with ATG16L1, possibly by recruiting ATG16L1 at the site of bacterial entry (By similarity). 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, PubMed:33942347). In addition, plays a role in insulin trafficking in beta cells in a cell-autonomous manner (By similarity). Mechanistically, upon recognizing cognate ligands, NOD1 and RIPK2 localize to insulin vesicles where they recruit RAB1A to direct insulin trafficking through the cytoplasm (By similarity).

Cellular Location

Cell membrane; Lipid-anchor. Apical cell membrane. Basolateral cell membrane. Cytoplasm. Note=Detected in the cytoplasm and at the cell membrane (PubMed:31649195). Following bacterial infection, localizes to bacterial entry sites in the cell membrane (PubMed:31649195). Recruited to the basolateral and apical membranes in polarized epithelial cells (PubMed:19043560)

Tissue Location

Highly expressed in adult heart, skeletal muscle, pancreas, spleen and ovary (PubMed:10224040). Also detected in placenta, lung, liver, kidney, thymus, testis, small intestine and colon (PubMed:10224040).

CARD4 Antibody (C-term) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

CARD4 Antibody (C-term) Blocking Peptide - Images**CARD4 Antibody (C-term) Blocking Peptide - Background**

CARD4 is a member of the NOD (nucleotide-binding oligomerization domain) family. This member is a cytosolic protein. It contains an N-terminal caspase recruitment domain (CARD), a centrally located nucleotide-binding domain (NBD), and 10 tandem leucine-rich repeats (LRRs) in its C terminus. The CARD is involved in apoptotic signaling, LRRs participate in protein-protein interactions, and mutations in the NBD may affect the process of oligomerization and subsequent function of the LRR domain. This protein is an intracellular pattern-recognition receptor (PRR) that initiates inflammation in response to a subset of bacteria through the detection of bacterial diaminopimelic acid.

CARD4 Antibody (C-term) Blocking Peptide - References

Inohara,N., et.al., J. Biol. Chem. 274 (21), 14560-14567 (1999)Inohara,N.,et.al., J. Biol. Chem. 275 (36), 27823-27831 (2000)