

Product Specification Sheet

Nod1/CARD4 Antibodies

Cat. # NOD11-P	Human Nod1 Control blocking/Peptide	SIZE: 100 ug
Cat. # NOD11-S	Rabbit Anti-Human Nod1 antiserum	SIZE: 100 ul
Cat. # NOD11-A	Rabbit Anti-Human Nod1 IgG (affinity pure)	SIZE: 100 ug

Apoptosis or programmed cell death is a fundamental cellular process that is essential for normal tissue development and abnormal growth. Apoptosis is driven by two classes of specialized proteases known as caspases (Cysteine **Aspartase**). Several key factors are released from the mitochondria that regulate apoptosis. The first such factor (Cytochrome-C) to be described binds to a cytoplasmic scaffolding protein called **Apaf-1** (Apoptosis Protease activating factor-1), a **homolog of C. elegans Ced-4**. Both Apaf-1 and Ced-4 are composed of an N-terminal Caspase Recruitment domain (CARD) linked to a Nucleotide-binding domain (NBD), also known as NB-ARC or NOD domain. Ced-4 and Apaf-1 self-associate via the NBD and activate Casp-3 and -9. In response to certain apoptotic stimuli, Cytochrome-C is released from the mitochondria and binds to Apaf-1 to form a ternary complex with, and activate, the initiator pro-caspase-9. Active caspase-9 then turns on downstream effector caspases, initiating apoptosis. Recently, Additional members of Apaf-1 family, **NOD1/CARD4** and **NOD2** have been cloned and characterized.

Nod1/CARD4 (mouse 953-aa, human 953 aa; chromosome 7p15-p14; mol wt ~130 kDa) contains an N-terminal CARD motif, an NBD, and unlike APAF1, 10 tandem leucine-rich repeats (LRR) in its C terminus. It has abundant expression in adult heart, spleen, and lung, as well as in numerous cancer cell lines and fetal tissues. NOD1 preferentially interacts with procaspases containing CARDS or death effector domains (DEDs), as well as with itself, RICK, and CLARP, but not with RAIDD (CRADD), APAF1, NIK, or other CARD- or DED-containing proteins. The CARD was found to be essential for NOD1 to bind and activate CASP9, as well as to promote apoptosis.

FUNCTION: Enhances caspase-9-mediated apoptosis. Induces NF-kappa-B activity via RIPK2 and IKK-gamma. Confers responsiveness to intracellular bacterial lipopolysaccharides (LPS).

SUBCELLULAR LOCATION: Cytoplasm.

SIMILARITY: Contains 1 CARD domain.

Protein name Nucleotide-binding oligomerization domain-containing protein 1

Synonym Caspase recruitment domain-containing protein 4

Gene name Name: NOD1; Synonyms: CARD4

Source of Antigen and Antibodies

Antigen	19-aa peptide from human NOD1 (1); (protein accession #Q9Y239 , refs 1) Designation (NOD11-P, control peptide) conjugated to KLH; Epitope location ~C-terminus
Ab Host/type	Rabbit, Polyclonal Unpurified antiserum (cat # NOD11-S) and aff pure IgG (cat # NOD11-A) purified over the antigen column
Ab Format	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)	100ul	solution	lyophilized powder
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Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1 mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..
Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Recommended Usage

Western Blotting Antiserum at 1:1K-1:3K; Aff pure at 1-5 ug/ml using ECL technique).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested.

Specificity & Cross-reactivity

Human NOD11-P control peptide sequence is 89% conserved in mouse NOD1. It has no significant homology with ced-3/4, Apaf-1, NOD-2 or other proteins. Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (detailed protocol is available at the web site).

General References: (1) Inohara N et al (1999) JBC 274, 14560-14567; Bertin J et al (1999) JBC 274, 12955-12953; Ogura Y et al (2001) JBC 276, 4812-4818; Ceconi, F. et al (1998) Cell 94, 727-737; Zou et al (1997) Cell 90, 405-413; Soengas MS et al (2001) Nature 409, 207-211; Srinivasulam SM et al (1998) Mol. Cell 1, 949-957

*This product is for In vitro research use only.

Related material available from ADI

Antibodies AIF, Apaf-1, Cytochrome-C, Caspases, IAPs, Survivin, EPR-1, CARD, Aven, Livin, Iceberg, IPAF, other Apoptosis related proteins

Recycle Immuno blots in Just 5-10 min. (use the same blot for various proteins). (no boiling or pungent mercaptoethanol).

NOD11-S-A-P 70905J

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