SANTA CRUZ BIOTECHNOLOGY, INC.

NOD1 (B-4): sc-398696

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mammalian homologs of the CED-4 proteins, Apaf-1 (CED-4), NOD1 (CARD4), and NOD2 contain a caspase recruitment domain (CARD) and a putative nucleotide binding domain, signified by a consensus Walker's A box (P-loop) and B box (Mg^{2+}-binding site). NOD1 contains a putative regulatory domain and multiple leucine-rich repeats. NOD1 is a member of a growing family of intracellular proteins which share structural homology to the apoptosis regulator Apaf-1. NOD1 associates with the CARD-containing kinase RICK and activates NFκB. The self-association of NOD1 mediates proximity of RICK and the interaction of RICK with IKKγ. In addition, NOD1 binds to multiple caspases with long prodomains, but specifically activates caspase-9 and promotes caspase-9-induced apoptosis. NOD2 is composed of two N-terminal CARDs, a nucleotide-binding domain, and multiple C-terminal leucine-rich repeats. The expression of NOD2 is highly restricted to monocytes, and activates NFκB in response to bacterial lipopoly-saccharides.

REFERENCES

1. Bertin, J., et al. 1999. Human CARD4 protein is a novel CED-4/Apaf-1 cell death family member that activates NFκB. J. Biol. Chem. 274: 12955-12958.
2. Inohara, N., et al. 1999. NOD1, an Apaf-1-like activator of caspase-9 and nuclear factor κB. J. Biol. Chem. 274: 14560-14567.
3. Inohara, N., et al. 2000. An induced proximity model for NFκB activation in the NOD1/RICK and RIP signaling pathways. J. Biol. Chem. 275: 27823-27831.

CHROMOSOMAL LOCATION

Genetic locus: NOD1 (human) mapping to 7p14.3; Nod1 (mouse) mapping to 6 B3.

SOURCE

NOD1 (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 822-849 near the C-terminus of NOD1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NOD1 (B-4) is available conjugated to agarose (sc-398696 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398696 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398696 PE), fluorescein (sc-398696 FITC), Alexa Fluor® 488 (sc-398696 AF488), Alexa Fluor® 546 (sc-398696 AF546), Alexa Fluor® 594 (sc-398696 AF594) or Alexa Fluor® 647 (sc-398696 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398696 AF680) or Alexa Fluor® 790 (sc-398696 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398696 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

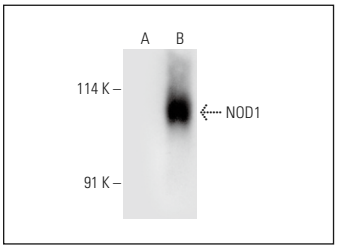
NOD1 (B-4) is recommended for detection of NOD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NOD1 siRNA (h): sc-37279, NOD1 siRNA (m): sc-37280, NOD1 shRNA Plasmid (h): sc-37279-SH, NOD1 shRNA Plasmid (m): sc-37280-SH, NOD1 shRNA (h) Lentiviral Particles: sc-37279-V and NOD1 shRNA (m) Lentiviral Particles: sc-37280-V.

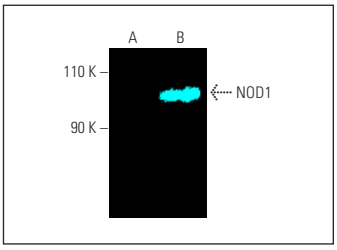
Molecular Weight of NOD1: 108 kDa.

Positive Controls: NOD1 (h): 293T Lysate: sc-113586.

DATA



NOD1 (B-4): sc-398696. Western blot analysis of NOD1 expression in non-transfected: sc-117752 (**A**) and human NOD1 transfected: sc-113586 (**B**) 293T whole cell lysates.



NOD1 (B-4): sc-398696. Fluorescent western blot analysis of NOD1 expression in non-transfected: sc-117752 (**A**) and human NOD1 transfected: sc-113586 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2a} BP-CFL 647: sc-542738.

SELECT PRODUCT CITATIONS

1. Bagarolli, R.A., et al. 2017. Probiotics modulate gut microbiota and improve Insulin sensitivity in DIO mice. J. Nutr. Biochem. 50: 16-25.
2. Ma, X., et al. 2020. Nucleotide-binding oligomerization domain protein 1 enhances oxygen-glucose deprivation and reperfusion injury in cortical neurons via activation of endoplasmic reticulum stress-mediated autophagy. Exp. Mol. Pathol. 117: 104525.
3. Yin, L., et al. 2021. IFN-γ manipulates NOD1-mediated interaction of autophagy and edwardsiella piscicida to augment intracellular clearance in fish. J. Immunol. 207: 1087-1098.
4. Zhao, Z., et al. 2022. Early pregnancy modulates expression of the nod-like receptor family in lymph nodes of ewes. Animals 12: 3285.
5. Hu, L., et al. 2023. Fine particulate matter promotes airway inflammation and mucin production by activating endoplasmic reticulum stress and the IRE1α/NOD1/NFκB pathway. Int. J. Mol. Med. 52: 96.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.