Product Datasheet

NLRP3/NALP3 Antibody - BSA Free
NBP2-12446SS

Unit Size: 0.05 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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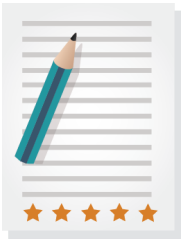
Updated 7/23/2024 v.20.1



NBP2-12446SS

NLRP3/NALP3 Antibody - BSA Free

Product Information

Unit Size	0.05 ml
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Target Molecular Weight	118 kDa

Product Description

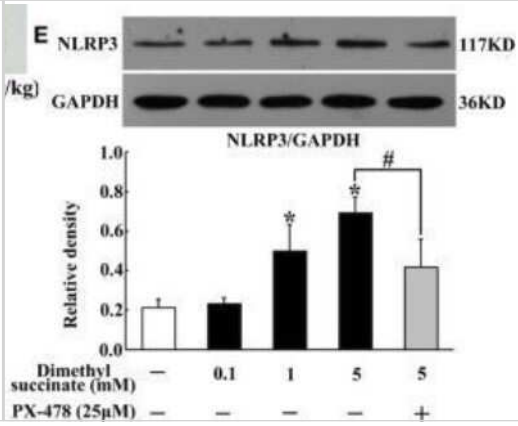
Host	Rabbit
Gene ID	114548
Gene Symbol	NLRP3
Species	Human, Mouse, Rat
Reactivity Notes	Use in Rat reported in scientific literature (PMID:34455059). Use in Rat reported in scientific literature (PMID:33814920).
Immunogen	This NLRP3/NALP3 antibody was raised against a portion of amino acids 1-50 of human NLRP3/NALP3.

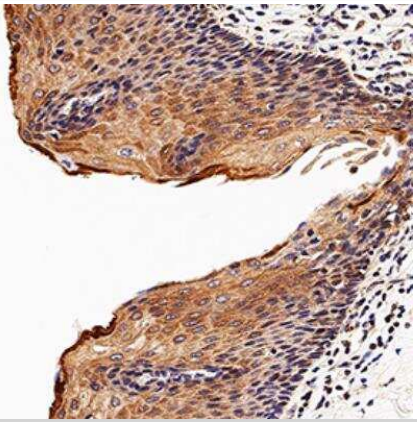
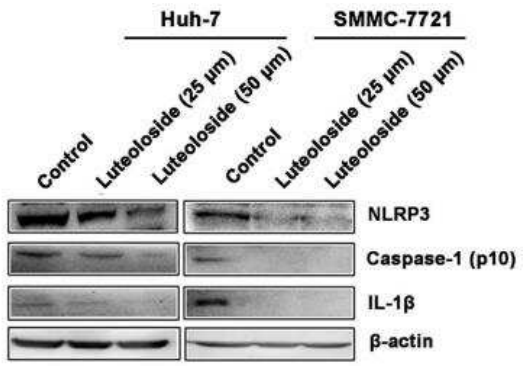
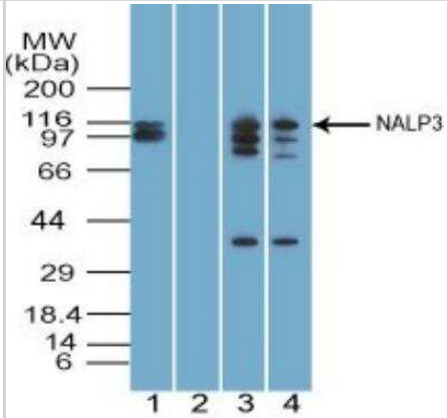
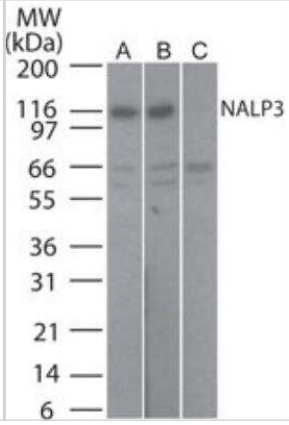
Product Application Details

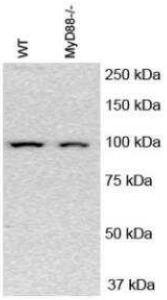
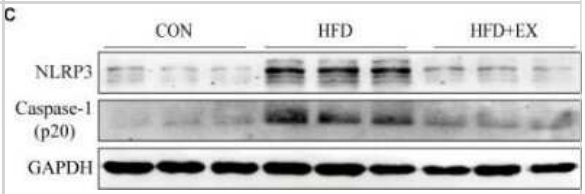
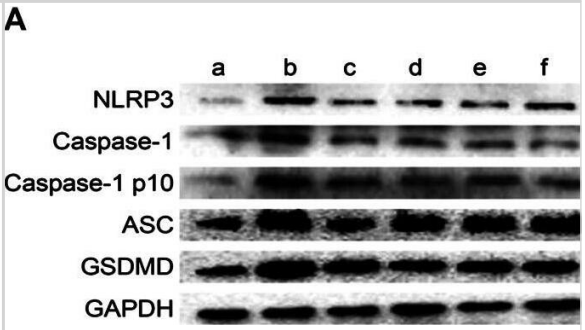
Applications	Western Blot, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin, Immunomicroscopy, Immunoprecipitation, Knockdown Validated
Recommended Dilutions	Western Blot 2 - 5 ug/mL, Flow Cytometry reported in scientific literature (PMID 34993560), Immunohistochemistry 1:10 - 1:50, Immunocytochemistry/ Immunofluorescence, Immunoprecipitation reported in scientific literature (PMID 37029500), Immunohistochemistry-Paraffin 1:10 - 1:50, Immunohistochemistry-Frozen reported in scientific literature (PMID 35792172), Immunomicroscopy, Knockdown Validated

Images

C-AR inhibited NLRP3 inflammasome activation in synovial tissue. NLRP3 protein expression in succinate-stimulated synovial fibroblasts. The results were derived from four independent experiments for immunohistochemistry staining and Western blot and expressed as the mean +/- SD. *p < 0.05 vs. the model; #p < 0.05 vs. the indicated treatment. Image collected and cropped by CiteAb from the following publication (https://journal.frontiersin.org/article/10.3389/fimmu.2016.00532/full), licensed under a CC-BY license.



Analysis of human esophagus using NLRP3/NALP3 antibody at 1:50 on a Bond Rx autostainer (Leica Biosystems). The assay involved 20 minutes of heat induced antigen retrieval (HIER) using 10mM sodium citrate buffer (pH 6.0) and endogenous peroxidase quenching with peroxide block. The sections were incubated with primary antibody for 30 minutes and Bond Polymer Refine Detection (Leica Biosystems) with DAB was used for signal development followed by counterstaining with hematoxylin. Whole slide scanning and capturing of representative images was performed using Aperio AT2 (Leica Biosystems). Cytoplasmic staining in the squamous epithelium was observed. Staining was performed by Histowiz.	
Analysis of NLRP3 in cells (Huh-7 and SMMC-7721) exposed luteoloside using anti-NLRP3 antibody. Western blot image submitted by a verified customer review.	
Analysis of NALP3 using NALP3 antibody. Human testis lysate in the 1) absence, 2) presence of immunizing peptide, 3) mouse and 4) rat testis probed with NALP3 antibody at 5, 2 and 2 ug/mL respectively. Goat anti-rabbit IgG HRP secondary antibody and PicoTect ECL substrate solution were used for this test.	
Analysis of NALP3 using NALP3 antibody. Lane A) Human NALP3 transfected cell lysate, B) Mouse NALP3 transfected cell lysate, and C) HEK293 control lysate probed with NALP3 antibody at 3 ug/mL.	

Analysis in mouse cell lysate.	
Regular aerobic exercise decreased myocardial inflammation in HFD rats. Representative Western blot analysis of NLRP3 and caspase-1. Image collected and cropped by CiteAb from the following publication (https://www.frontiersin.org/article/10.3389/fphys.2019.01286/full), licensed under a CC-BY license.	
Effect of Taohong Siwu decoction (THSWD) on the characteristic protein of pyroptosis in middle cerebral artery occlusion-reperfusion (MCAO/R) rats. (A) Photographs of western blots, (B) NLRP3, (C) Caspase-1, (D) Caspase-1 p10, (E) ASC, (F) GSDMD. a: Sham, b: Model, c: THSWD (18 g/kg), d: THSWD (9 g/kg), e: THSWD (4.5 g/kg), f: nimodipine. The results were presented as the mean ± SD (n = 3). Compared with sham group, #p < 0.05, ##p < 0.01. Compared with model group, *p < 0.05, **p < 0.01.	

Publications

Hong Liang Lin, Sheng Wang, Kota Sato, Yu Qiao Zhang, Bei Ting He, Jing Xu, Toru Nakazawa, Yong Jie Qin, Hong Yang Zhang Uric acid–driven NLRP3 inflammasome activation triggers lens epithelial cell senescence and cataract formation Cell Death Discovery 2024-03-09 [PMID: 38461179]

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Inés Muela-Zarzuela, Juan Miguel Suarez-Rivero, Andrea Gallardo-Orihuela, Chun Wang, Kumi Izawa, Marta de Gregorio-Procopio, Isabelle Couillin, Bernhard Ryffel, Jiro Kitaura, Alberto Sanz, Thomas von Zglinicki, Gabriel Mbalaviele, Mario D Cordero NLRP1 inflammasome promotes senescence and senescence-associated secretory phenotype. Inflammation research : official journal of the European Histamine Research Society ... [et al.] 2024-06-21 [PMID: 38907167]

Fei Gao, Dian Xiong, Zhaorui Sun, Jingbo Shao, Dong Wei, Shinan Nie ARC DPBNPs suppress LPS-induced acute lung injury via inhibiting macrophage pyroptosis and M1 polarization by ERK pathway in mice. International immunopharmacology 2024-04-10 [PMID: 38457983]

Andrea Mencarelli, Pradeep Bist, Hae Woong Choi, Hanif Javanmard Khameneh, Alessandra Mortellaro, Soman N Abraham Anaphylactic degranulation by mast cells requires the mobilization of inflammasome components. Nature immunology 2024-04-11 [PMID: 38486019]

Yubin Lee, Boran Yoon, Sumin Son, Eunbin Cho, Kyung Bo Kim, Eun Young Choi, Dong-Eun Kim, Alessandro Poggi Inhibition of Immunoproteasome Attenuates NLRP3 Inflammasome Response by Regulating E3 Ubiquitin Ligase TRIM31 Cells 2024-04-13 [PMID: 38667290]

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Varadharajulu G, Victor D, Venkadassalapathy S et al. Expression of NLRP3 and superoxide dismutase-2 (SOD2) in the gingival tissues of periodontitis patients with and without type 2 diabetes mellitus: a case-control study International Journal of Diabetes in Developing Countries 2023-11-27

Hitomi M, Venegas J, Kang SC, Eng C Differential cell cycle checkpoint evasion by PTEN germline mutations associated with dichotomous phenotypes of cancer versus autism spectrum disorder Oncogene 2023-11-01 [PMID: 37907589]

Gao Q, Gao Z, Su M et al. Umbilical Cord Mesenchymal Stem Cells Overexpressing Heme Oxygenase-1 Promotes Symptoms Recovery in Cystitis Rats by Alleviating Neuroinflammation Stem cells international 2023-11-14 [PMID: 38020203]

Wei J, Leng L, Sui Y et al. Phenolic acids from Prunella vulgaris alleviate cardiac remodeling following myocardial infarction partially by suppressing NLRP3 activation Phytotherapy research : PTR 2023-11-22 [PMID: 37992723]

McElwain CJ, Musumeci A, Manna S et al. L-ergothioneine reduces mitochondrial-driven NLRP3 activation in gestational diabetes mellitus Journal of reproductive immunology 2023-11-24 [PMID: 38029485] (WB, Human)

More publications at http://www.novusbio.com/NBP2-12446

Procedures

Western Blot Protocol for NLRP3/NALP3 Antibody (NBP2-12446)
Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 10-25 ug of total protein per lane.
2. Transfer proteins to PVDF membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain the membrane with Ponceau S (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot TBS -0.05% Tween 20 (TBST).
5. Block the membrane in 5% Non-fat milk in TBST (blocking buffer) for at least 1 hour.
6. Wash the membrane in TBST three times for 10 minutes each.
7. Dilute primary antibody in blocking buffer and incubate overnight at 4C with gentle rocking.
8. Wash the membrane in TBST three times for 10 minutes each.
9. Incubate the membrane in diluted HRP conjugated secondary antibody in blocking buffer (as per manufacturer's instructions) for 1 hour at room temperature.
10. Wash the blot in TBST three times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturers instructions.

Immunohistochemistry-Paraffin Protocol for NLRP3/NALP3 Antibody (NBP2-12446)
Immunohistochemistry-Paraffin Embedded Sections

Antigen Unmasking:
Bring slides to a boil in 10 mM sodium citrate buffer (pH 6.0) then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench-top for 30 minutes (keep slides in the sodium citrate buffer all the time).

Staining:
1. Wash sections in deionized water three times for 5 minutes each.
2. Wash sections in PBS for 5 minutes.
3. Block each section with 100-400 ul blocking solution (1% BSA in PBS) for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul diluted primary antibody. Incubate overnight at 4 C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul HRP polymer conjugated secondary antibody. Incubate 30 minutes at room temperature.
7. Wash sections three times in wash buffer for 5 minutes each.
8. Add 100-400 ul DAB substrate to each section and monitor staining closely.
9. As soon as the sections develop, immerse slides in deionized water.
10. Counterstain sections in hematoxylin.
11. Wash sections in deionized water two times for 5 minutes each.
12. Dehydrate sections.
13. Mount coverslips.

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