

Rabbit NLRP3 Polyclonal Antibody | anti-NLRP3 antibody

Phospho-NLRP3 (Ser295) Antibody

CATALOG # AAA329414	HOST Rabbit	REACTIVITY Human, Mouse Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Sheep (88%), Dog (100%)	APPLICATIONS ELISA, Immunohistochemistry, Western Blot
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PRODUCT SYNONYMS

NLRP3; Polyclonal Antibody; Phospho-NLRP3 (Ser295) Antibody; AGTAVPRL; AII/AVP; Angiotensin/vasopressin receptor AII/AVP like; Angiotensin/vasopressin receptor AII/AVP-like; C1orf7; Caterpillar protein 1.1; CIAS 1; CIAS1; CLR1.1; Cold autoinflammatory syndrome 1; Cold autoinflammatory syndrome 1 protein; Cryopyrin; Familial cold autoinflammatory syndrome; FCAS; FCU; LRR and PYD domains-containing protein 3; Muckle-Wells syndrome; MWS; NACHT; NACHT LRR and PYD containing protein 3; NALP 3; NALP3; NALP3_HUMAN; NLR family pyrin domain containing 3; PYPAF 1; PYPAF1; PYRIN containing APAF1 like protein 1; PYRIN-containing APAF1-like protein 1; anti-NLRP3 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Sheep (88%), Dog (100%)
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-NLRP3 (Ser295) Antibody detects endogenous levels of NLRP3 only when phosphorylated at Ser295. Tissue Specificity: Predominantly expressed in macrophages. Also expressed in dendritic cells, B- and T-cells (at protein level). Expressed in LPS-treated granulocytes, but not in resting cells (at protein level). Expression in monocytes is very weak (at protein level). Expressed in stratified non-keratinizing squamous epithelium, including oral, esophageal and ectocervical mucosa and in the Hassall's corpuscles in the thymus. Also, detected in the stratified epithelium covering the bladder and ureter (transitional mucosa) (at protein level). Expressed in lung epithelial cells (at protein level). Expressed in chondrocytes. Expressed at low levels in resting osteoblasts.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-NLRP3 antibody	ELISA (Peptide ELISA), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human NLRP3 around the phosphorylation site of Ser295.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	The disulfide bond in the pyrin domain might play a role in reactive oxygen species-mediated activation. Ubiquitinated; undergoes both 'Lys-48'- and 'Lys-63'-linked polyubiquitination. Ubiquitination does not lead to degradation, but inhibits inflammasome activation (By similarity). Deubiquitination is catalyzed by BRCC3 and associated with NLRP3 activation and inflammasome assembly. This process can be induced by the activation of Toll-like receptors (by LPS), through a non-transcriptional pathway dependent on the mitochondrial production of reactive oxygen species, and by ATP.

Subunit Structure	Sensor component of NLRP3 inflammasomes. Inflammasomes are supramolecular complexes that assemble in the cytosol in response to pathogens and other damage-associated signals and play critical roles in innate immunity and inflammation. The core of NLRP3 inflammasomes consists of a signal sensor component (NLRP3), an adapter (ASC/PYCARD), which recruits an effector proinflammatory caspase (CASP1 and, possibly, CASP4 and CASP5). Within the complex, NLRP3 and PYCARD interact via their respective DAPIN/pyrin domains. This interaction initiates speck formation (nucleation) which greatly enhances further addition of soluble PYCARD molecules to the speck in a prion-like polymerization process. NLRP3 localizes at the end of each PYCARD filament. Clustered PYCARD nucleates the formation of CASP1 filaments through the interaction of their respective CARD domains, acting as a platform for CASP1 polymerization. CASP1 filament formation increases local enzyme concentration, resulting in trans-autocleavage and activation. Active CASP1 then processes IL1B and IL18 precursors, leading to the release of mature cytokines in the extracellular milieu and inflammatory response. Reconstituted ternary inflammasomes show star-shaped structures, in which multiple filaments, containing CASP1, protrude radially from a single central hub, containing the sensor protein and PYCARD. In this complex, the sensor protein is sub-stoichiometric to PYCARD, and PYCARD is further substoichiometric to CASP1, suggesting amplifications of signal transduction from the sensor, via the adapter, to the effector. Interacts with MEFV; this interaction targets NLRP3 to degradation by autophagy, hence preventing excessive IL1B- and IL18-mediated inflammation. Interacts with GBP5 (via DAPIN domain); this interaction promotes inflammasome assembly in response to microbial and soluble, but not crystalline, agents. Interacts with EIF2AK2/PKR; this interaction requires EIF2AK2 activity, is accompanied by EIF2AK2 autophosphorylation and promotes inflammasome assembly in response to specific stimuli. Interacts with PML (isoform PML-1) (via the leucine-rich repeat (LRR) domain); PML-mediated increase in NLRP3 inflammasome activation does not depend upon this interaction. Directly interacts with IRF4 (via the LRR domain); this interaction is required for optimal IRF4 binding to IL4 promoter and efficient IL4 transactivation during differentiation of Th2 helper T-cells (By similarity). Interacts (via NACHT domain) with DHX33 (via DEAH box). Interacts with PYDC5.
Similarity	The pyrin domain (also called DAPIN domain or PYD) is involved in PYCARD-binding. The LRR domain mediates the interaction with IRF4 and PML. Intramolecular interactions between NACHT and leucine-rich repeat (LRR) domains may be important for autoinhibition in the absence of activating signal. Belongs to the NLRP family.
Subcellular Location	Cytoplasm>Cytosol. Inflammasome. Endoplasmic reticulum. Secreted. Nucleus. Note: In macrophages, under resting conditions, mainly located in the cytosol, on the endoplasmic reticulum. After stimulation with inducers of the NLRP3 inflammasome, mitochondria redistribute in the vicinity of the endoplasmic reticulum in the perinuclear region, which results in colocalization of NLRP3 on the endoplasmic reticulum and PYCARD on mitochondria, allowing the activation of inflammasome assembly. After the induction of pyroptosis, inflammasome specks are released into the extracellular space where they can further promote IL1B processing and where they can be engulfed by macrophages. Phagocytosis induces lysosomal damage and inflammasome activation in the recipient cells (PubMed:24952504). In the Th2 subset of CD4 (+) helper T-cells, mainly located in the nucleus. Nuclear localization depends upon KPNA2. In the Th1 subset of CD4 (+) helper T-cells, mainly cytoplasmic (By similarity). Golgi apparatus membrane. Note: (Microbial infection) Upon HRSV infection, the protein is mainly located in lipid rafts in the Golgi membrane.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



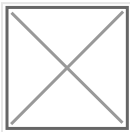
IHC (Immunohistochemistry)

At 1/100 staining Human colorectal cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



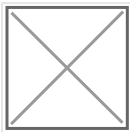
IHC (Immunohistochemisry)

At 1/100 staining Human normal tissues adjacent to pancreatic cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohiostchemistry)

Staining Human pancreatic cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



WB (Western Blot)

Western blot analysis of extracts from RAW 264.7, using Phospho-NLRP3(Ser295) Antibody. Lane1 was treated with phospho-blocking peptide, Lane2 was treated with non-phospho-blocking peptide.

ADDITIONAL INFORMATION

Related Product Information for anti-NLRP3 antibody	As the sensor component of the NLRP3 inflammasome, plays a crucial role in innate immunity and inflammation. In response to pathogens and other damage-associated signals, initiates the formation of the inflammasome polymeric complex, made of NLRP3, PYCARD and CASP1 (and possibly CASP4 and CASP5). Recruitment of proCASP1 to the inflammasome promotes its activation and CASP1-catalyzed IL1B and IL18 maturation and secretion in the extracellular milieu. Activation of NLRP3 inflammasome is also required for HMGB1 secretion. The active cytokines and HMGB1 stimulate inflammatory responses. Inflammasomes can also induce pyroptosis, an inflammatory form of programmed cell death. Under resting conditions, NLRP3 is autoinhibited. NLRP3 activation stimuli include extracellular ATP, reactive oxygen species, K (+) efflux, crystals of monosodium urate or cholesterol, amyloid-beta fibers, environmental or industrial particles and nanoparticles, cytosolic dsRNA, etc. However, it is unclear what constitutes the direct NLRP3 activator. Activation in presence of cytosolic dsRNA is mediated by DHX33. Independently of inflammasome activation, regulates the differentiation of T helper 2 (Th2) cells and has a role in Th2 cell-dependent asthma and tumor growth (By similarity). During Th2 differentiation, required for optimal IRF4 binding to IL4 promoter and for IRF4-dependent IL4 transcription. Binds to the consensus DNA sequence 5'-GRRGGNRRGAG-3'. May also participate in the transcription of IL5, IL13, GATA3, CCR3, CCR4 and MAF (By similarity).
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NCBI AND UNIPROT INFORMATION

NCBI GI #	34878690
NCBI GeneID	114548
NCBI Accession #	NP_899632
NCBI GenBank Nucleotide #	NM_183395.2
UniProt Accession #	Q96P20; O75434; Q17RS2; Q59H68; Q5JQS8; Q5JQS9; Q6TG35; Q8TCW0; B2RC97; B7ZKS9; B7ZKT2; B7ZKT3
Molecular Weight	115,968 Da
NCBI Official Full Name	NACHT, LRR and PYD domains-containing protein 3 isoform b
NCBI Official Synonym Full Names	NLR family, pyrin domain containing 3
NCBI Official Symbol	NLRP3
NCBI Official Synonym Symbols	AIL; AVP; FCU; MWS; FCAS; CIAS1; FCAS1; NALP3; C1orf7; CLR1.1; PYPAF1; AGTAVPRL
NCBI Protein Information	NACHT, LRR and PYD domains-containing protein 3; cryopyrin; caterpillar protein 1.1; PYRIN-containing APAF1-like protein 1; NACHT, LRR and PYD containing protein 3; cold autoinflammatory syndrome 1 protein; NACHT domain-, leucine-rich repeat-, and PYD-con
UniProt Protein Name	NACHT, LRR and PYD domains-containing protein 3
UniProt Gene Name	NLRP3
UniProt Synonym Gene Names	C1orf7; CIAS1; NALP3; PYPAF1; CLR1.1
UniProt Entry Name	NALP3_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/nlrp3-antibody-peptide-elisa-immunohistochemistry-western-blot-elisa/329414>