

Cryopyrin Polyclonal Antibody

Catalog # AP73565

Product Information

Application	WB, IHC-P
Primary Accession	Q96P20
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	118173

Additional Information

Gene ID	114548
Other Names	NLRP3; C1orf7; CIAS1; NALP3; PYPAF1; NACHT, LRR and PYD domains-containing protein 3; Angiotensin/vasopressin receptor AII/AVP-like; Caterpillar protein 1.1CLR1.1; Cold autoinflammatory syndrome 1 protein; Cryopyrin; PYRIN-containing APAF1-like protein 1
Dilution	WB~~Western Blot: 1/500 - 1/2000. IHC-p: 1/100-1/300. ELISA: 1/20000. Not yet tested in other applications. IHC-P~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

Protein Information

Name	NLRP3 {ECO:0000303 PubMed:17907925, ECO:0000312 HGNC:HGNC:16400}
Function	Sensor component of the NLRP3 inflammasome, which mediates inflammasome activation in response to defects in membrane integrity, leading to secretion of inflammatory cytokines IL1B and IL18 and pyroptosis (PubMed: 16407889 , PubMed: 18403674 , PubMed: 18604214 , PubMed: 23582325 , PubMed: 25686105 , PubMed: 27929086 , PubMed: 28656979 , PubMed: 28847925 , PubMed: 30487600 , PubMed: 30612879 , PubMed: 31086327 , PubMed: 31086329 , PubMed: 31189953 , PubMed: 33231615 , PubMed: 34133077 , PubMed: 34341353 , PubMed: 34512673 , PubMed: 36442502). In response to pathogens and other damage-associated signals that affect the integrity of membranes, initiates the formation of the inflammasome polymeric complex composed of NLRP3, CASP1 and PYCARD/ASC (PubMed: 16407889 , PubMed: 18403674 , PubMed: 27432880 , PubMed: 28847925 , PubMed: 31189953 , PubMed: 33231615 , PubMed: 34133077 ,

PubMed:[34341353](#), PubMed:[36142182](#), PubMed:[36442502](#)). Recruitment of pro-caspase-1 (proCASP1) to the NLRP3 inflammasome promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D (GSDMD), promoting cytokine secretion and pyroptosis (PubMed:[23582325](#), PubMed:[28847925](#), PubMed:[31189953](#), PubMed:[33231615](#), PubMed:[34133077](#), PubMed:[34341353](#)). Activation of NLRP3 inflammasome is also required for HMGB1 secretion; stimulating inflammatory responses (PubMed:[22801494](#)). Under resting conditions, ADP-bound NLRP3 is autoinhibited (PubMed:[35114687](#)). NLRP3 activation stimuli include extracellular ATP, nigericin, reactive oxygen species, crystals of monosodium urate or cholesterol, amyloid-beta fibers, environmental or industrial particles and nanoparticles, such as asbestos, silica, aluminum salts, cytosolic dsRNA, etc (PubMed:[16407889](#), PubMed:[18403674](#), PubMed:[18604214](#), PubMed:[19414800](#), PubMed:[23871209](#)). Almost all stimuli trigger intracellular K(+) efflux (By similarity). These stimuli lead to membrane perturbation and activation of NLRP3 (By similarity). Upon activation, NLRP3 is transported to microtubule organizing center (MTOC), where it is unlocked by NEK7, leading to its relocation to dispersed trans-Golgi network (dTGN) vesicle membranes and formation of an active inflammasome complex (PubMed:[36442502](#), PubMed:[39173637](#)). Associates with dTGN vesicle membranes by binding to phosphatidylinositol 4-phosphate (PtdIns4P) (PubMed:[30487600](#), PubMed:[34554188](#)). Shows ATPase activity (PubMed:[17483456](#)).

Cellular Location

Cytoplasm, cytosol. Inflammasome. Cytoplasm, cytoskeleton, microtubule organizing center. Golgi apparatus membrane. Endoplasmic reticulum {ECO:0000250|UniProtKB:Q8R4B8}. Mitochondrion. Secreted. Nucleus {ECO:0000250|UniProtKB:Q8R4B8} Note=In macrophages, under resting conditions, mainly located in the cytosol and on membranes of various organelles, such as endoplasmic reticulum, mitochondria and Golgi: forms an inactive double-ring cage that is primarily localized on membranes (By similarity). Upon activation, NLRP3 is transported to microtubule organizing center (MTOC), where it is unlocked by NEK7, leading to its relocation to dispersed trans-Golgi network (dTGN) vesicle membranes for the formation of an active inflammasome complex (PubMed:[39173637](#)) Recruited to dTGN vesicle membranes by binding to phosphatidylinositol 4-phosphate (PtdIns4P) (PubMed:[30487600](#)). 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 (PubMed:[24952504](#)). 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 (By similarity). Nuclear localization depends upon KPNA2 (By similarity). In the Th1 subset of CD4(+) helper T-cells, mainly cytoplasmic (By similarity). {ECO:0000250|UniProtKB:Q8R4B8, ECO:0000269|PubMed:[24952504](#), ECO:0000269|PubMed:[30487600](#), ECO:0000269|PubMed:[39173637](#)}

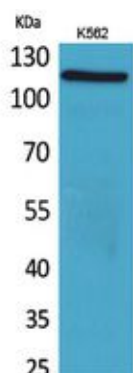
Tissue Location

Predominantly expressed in macrophages (PubMed:[33231615](#), PubMed:[34133077](#)). Also expressed in dendritic cells, B- and T-cells (at protein level) (PubMed:[11786556](#), PubMed:[17164409](#)) Expressed in LPS-treated granulocytes, but not in resting cells (at protein level) (PubMed:[17164409](#)). Expression in monocytes is very weak (at protein level) (PubMed:[17164409](#)). 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) (PubMed:[17164409](#)) Expressed in lung epithelial cells (at protein level) (PubMed:[23229815](#)). Expressed in chondrocytes (PubMed:[12032915](#)) Expressed at low levels in resting osteoblasts (PubMed:[17907925](#))

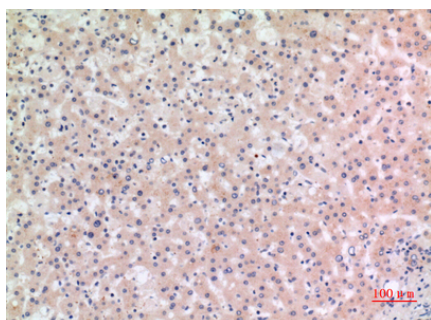
Background

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 (PubMed:[28847925](#)). Activation of NLRP3 inflammasome is also required for HMGB1 secretion (PubMed:[22801494](#)). 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 (PubMed:[23871209](#)). 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'-GRRGGNRGAG- 3'. May also participate in the transcription of IL5, IL13, GATA3, CCR3, CCR4 and MAF (By similarity).

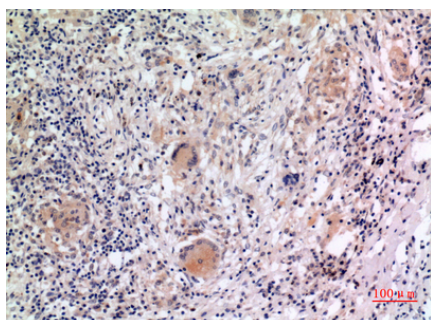
Images



Western Blot analysis of K562 cells using Cryopyrin Polyclonal Antibody.. Secondary antibody was diluted at 1:20000



Immunohistochemical analysis of paraffin-embedded human-liver, antibody was diluted at 1:100



Immunohistochemical analysis of paraffin-embedded human-lung, antibody was diluted at 1:100