

**Anti-CIAS1/NALP3 Picoband Antibody**  
Catalog # ABO11819**Specification****Anti-CIAS1/NALP3 Picoband Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">Q96P20</a>
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for NACHT, LRR and PYD domains-containing protein 3(NLRP3) detection. Tested with WB in Human.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-CIAS1/NALP3 Picoband Antibody - Additional Information**

**Gene ID** 114548

**Other Names**

NACHT, LRR and PYD domains-containing protein 3, Angiotensin/vasopressin receptor AII/AVP-like, Caterpillar protein 1.1, CLR1.1, Cold-induced autoinflammatory syndrome 1 protein, Cryopyrin, PYRIN-containing APAF1-like protein 1, NLRP3, C1orf7, CIAS1, NALP3, PYPAF1

**Calculated MW**

118173 MW KDa

**Application Details**

Western blot, 0.1-0.5 µg/ml, Human<br>

**Subcellular Localization**

Cytoplasm .

**Tissue Specificity**

Expressed in blood leukocytes. Strongly expressed in polymorphonuclear cells and osteoblasts. Undetectable or expressed at a lower magnitude in B- and T-lymphoblasts, respectively. High level of expression detected in chondrocytes. Detected in non-keratinizing epithelia of oropharynx, esophagus and ectocervix and in the urothelial layer of the bladder. .

**Protein Name**

NACHT, LRR and PYD domains-containing protein 3

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>.

**Immunogen**

E.coli-derived human CIAS1 recombinant protein (Position: D21-K194). Human CIAS1 shares 77% amino acid (aa) sequence identity with mouse CIAS1.

#### Purification

Immunogen affinity purified.

#### Cross Reactivity

No cross reactivity with other proteins

#### Storage

**At -20°C for one year. After r<sup>o</sup>Constitution, at 4°C for one month. It<sup>o</sup>Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.**

#### Sequence Similarities

Belongs to the NLRP family.

### Anti-CIAS1/NALP3 Picoband Antibody - 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:<a href="http://www.uniprot.org/citations/16407889" target="\_blank">16407889</a>, PubMed:<a href="http://www.uniprot.org/citations/18403674" target="\_blank">18403674</a>, PubMed:<a href="http://www.uniprot.org/citations/18604214" target="\_blank">18604214</a>, PubMed:<a href="http://www.uniprot.org/citations/23582325" target="\_blank">23582325</a>, PubMed:<a href="http://www.uniprot.org/citations/25686105" target="\_blank">25686105</a>, PubMed:<a href="http://www.uniprot.org/citations/27929086" target="\_blank">27929086</a>, PubMed:<a href="http://www.uniprot.org/citations/28656979" target="\_blank">28656979</a>, PubMed:<a href="http://www.uniprot.org/citations/28847925" target="\_blank">28847925</a>, PubMed:<a href="http://www.uniprot.org/citations/30487600" target="\_blank">30487600</a>, PubMed:<a href="http://www.uniprot.org/citations/30612879" target="\_blank">30612879</a>, PubMed:<a href="http://www.uniprot.org/citations/31086327" target="\_blank">31086327</a>, PubMed:<a href="http://www.uniprot.org/citations/31086329" target="\_blank">31086329</a>, PubMed:<a href="http://www.uniprot.org/citations/31189953" target="\_blank">31189953</a>, PubMed:<a href="http://www.uniprot.org/citations/33231615" target="\_blank">33231615</a>, PubMed:<a href="http://www.uniprot.org/citations/34133077" target="\_blank">34133077</a>, PubMed:<a href="http://www.uniprot.org/citations/34341353" target="\_blank">34341353</a>, PubMed:<a href="http://www.uniprot.org/citations/34512673" target="\_blank">34512673</a>, PubMed:<a href="http://www.uniprot.org/citations/36442502" target="\_blank">36442502</a>). 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:<a href="http://www.uniprot.org/citations/16407889" target="\_blank">16407889</a>, PubMed:<a href="http://www.uniprot.org/citations/18403674" target="\_blank">18403674</a>, PubMed:<a href="http://www.uniprot.org/citations/27432880" target="\_blank">27432880</a>, PubMed:<a href="http://www.uniprot.org/citations/28847925" target="\_blank">28847925</a>, PubMed:<a href="http://www.uniprot.org/citations/31189953" target="\_blank">31189953</a>, PubMed:<a href="http://www.uniprot.org/citations/33231615" target="\_blank">33231615</a>, PubMed:<a href="http://www.uniprot.org/citations/34133077" target="\_blank">34133077</a>, PubMed:<a href="http://www.uniprot.org/citations/34341353" target="\_blank">34341353</a>, PubMed:<a href="http://www.uniprot.org/citations/36142182" target="\_blank">36142182</a>, PubMed:<a href="http://www.uniprot.org/citations/36442502" target="\_blank">36442502</a>). 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:<a href="http://www.uniprot.org/citations/23582325" target="\_blank">23582325</a>, PubMed:<a href="http://www.uniprot.org/citations/28847925" target="\_blank">28847925</a>, PubMed:<a href="http://www.uniprot.org/citations/31189953" target="\_blank">31189953</a>, PubMed:<a href="http://www.uniprot.org/citations/33231615" target="\_blank">33231615</a>, PubMed:<a href="http://www.uniprot.org/citations/34133077" target="\_blank">34133077</a>, PubMed:<a href="http://www.uniprot.org/citations/34341353" target="\_blank">34341353</a>). Activation of NLRP3 inflammasome is also required for HMGB1 secretion; stimulating inflammatory responses (PubMed:<a href="http://www.uniprot.org/citations/22801494" target="\_blank">22801494</a>). Under resting conditions, ADP-bound NLRP3 is autoinhibited (PubMed:<a href="http://www.uniprot.org/citations/35114687" target="\_blank">35114687</a>). 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:<a href="http://www.uniprot.org/citations/16407889" target="\_blank">16407889</a>, PubMed:<a href="http://www.uniprot.org/citations/18403674" target="\_blank">18403674</a>, PubMed:<a href="http://www.uniprot.org/citations/18604214" target="\_blank">18604214</a>, PubMed:<a href="http://www.uniprot.org/citations/19414800" target="\_blank">19414800</a>, PubMed:<a href="http://www.uniprot.org/citations/23871209" target="\_blank">23871209</a>). 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 relocalization to dispersed trans-Golgi network (dTGN) vesicle membranes and formation of an active inflammasome complex (PubMed:<a href="http://www.uniprot.org/citations/36442502" target="\_blank">36442502</a>). Associates with dTGN vesicle membranes by binding to phosphatidylinositol 4-phosphate (PtdIns4P) (PubMed:<a href="http://www.uniprot.org/citations/30487600" target="\_blank">30487600</a>, PubMed:<a href="http://www.uniprot.org/citations/34554188" target="\_blank">34554188</a>). Shows ATPase activity (PubMed:<a href="http://www.uniprot.org/citations/17483456" target="\_blank">17483456</a>).

### 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 relocalization to dispersed trans-Golgi network (dTGN) vesicle membranes for the formation of an active inflammasome complex (By similarity). 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}

### 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

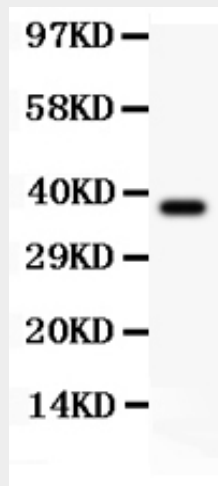
ectocervical mucosa and in the Hassall's corpuscles in the thymus Also, detected in the stratified epithelium covering the bladder and ureter (transitional mucosa) (at protein level) (PubMed:17164409) Expressed in lung epithelial cells (at protein level) (PubMed:23229815). Expressed in chondrocytes (PubMed:12032915) Expressed at low levels in resting osteoblasts (PubMed:17907925)

### Anti-CIAS1/NALP3 Picoband Antibody - Protocols

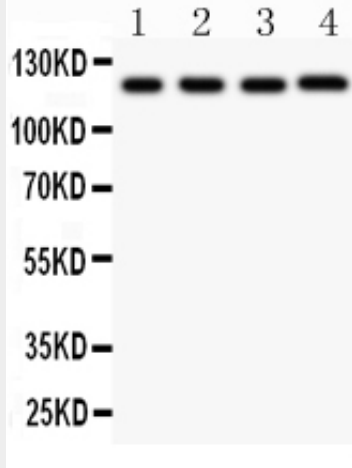
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### Anti-CIAS1/NALP3 Picoband Antibody - Images



Anti-CIAS1/NALP3 Picoband antibody, ABO11819-1.jpg All lanes: Anti CIAS1 (ABO11819) at 0.5ug/ml WB: Recombinant Human CIAS1 Protein 0.5ng Predicted bind size: 37KD Observed bind size: 37KD



Anti-CIAS1/NALP3 Picoband antibody, ABO11819-2.jpg All lanes: Anti CIAS1 (ABO11819) at 0.5ug/ml Lane 1: HELA Whole Cell Lysate at 40ug Lane 2: MCF-7 Whole Cell Lysate at 40ug Lane 3: JURKAT Whole Cell Lysate at 40ug Lane 4: HEPG2 Whole Cell Lysate at 40ug Predicted bind size: 118KD Observed bind size: 118KD

#### Anti-CIAS1/NALP3 Picoband Antibody - Background

NLRP3 (NLR FAMILY, PYRIN DOMAIN-CONTAINING 3), also known as CIAS1, CRYOPYRIN, NALP3 or PYPAF1, is a protein that in humans is encoded by the NLRP3 gene. It is mapped to 1q44. The encoded protein may play a role in the regulation of inflammation and apoptosis. Mutation of the NALP3 nucleotide-binding domain reduced ATP binding, CASP1 activation, IL1B production, cell death, macromolecular complex formation, self-association, and association with ASC. Consistent with an essential role for Nlrp3 inflammasomes in antifungal immunity, it has been showed that Nlrp3-deficient mice are hypersusceptible to *C. albicans* infection. Activation of the NLRP3 inflammasome in response to virus or to RNA was dependent upon lysosomal maturation and reactive oxygen species production in human cells. The NLRP3 inflammasome senses obesity-associated danger signals and contributes to obesity-induced inflammation and insulin resistance.