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NALP3 Antibody
Rabbit mAb
Catalog # AP90654

Specification

NALP3 Antibody - Product Information

Application	**WB, IHC, ICC**
Primary Accession	Q96P20
Clonality	**Monoclonal**

Other Names
FCU; MWS; FCAS; Cias1; Mmig1; NLRP3; Pypaf1; AII/AVP; AGTAVPRL; Cryopyrin;

Isotype	**Rabbit IgG**
Host	**Rabbit**
Calculated MW	**118173 Da**

NALP3 Antibody - Additional Information

Purification	**Affinity-chromatography**
Immunogen	**A synthesized peptide derived from human NALP3**
Description	**As the sensor component of the NLRP3 inflammasome, plays a crucial role in innate immunity and inflammation.**
Storage Condition and Buffer	**Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.**

NALP3 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:16407889, PubMed:18403674, PubMed:18604214, PubMed:23582325, PubMed:25686105, PubMed:27929086, PubMed:28656979, PubMed:28847925, PubMed:30487600, PubMed:30612879, PubMed:31086327, PubMed:<a href="http://www.uniprot.org/citations/31086329"

target="_blank">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 relocalization to dispersed trans-Golgi network (dTGN) vesicle membranes and formation of an active inflammasome complex (PubMed:36442502). 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 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)

NALP3 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 Cytomety
- Cell Culture

NALP3 Antibody - Images

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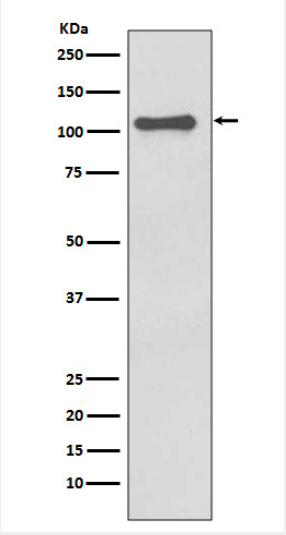

Western blot analysis of NLRP3 expression in SH-SY5Y cell lysate.