10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CARD7/NALP1 Polyclonal Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP58530

Specification

CARD7/NALP1 Polyclonal Antibody - Product Information

Application	**IHC-P**
Primary Accession	Q9C000
Reactivity	**Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**165866**

CARD7/NALP1 Polyclonal Antibody - Additional Information

Gene ID 22861

Other Names
NACHT, LRR and PYD domains-containing protein 1, 3.6.4.-, Caspase recruitment domain-containing protein 7, Death effector filament-forming ced-4-like apoptosis protein, Nucleotide-binding domain and caspase recruitment domain, NLRP1 (HGNC:14374)

Format
0.01M TBS(pH7.4), 0.09% (W/V) sodium azide and 50% Glyce

Storage
Store at -20 ℃ for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 ℃.

CARD7/NALP1 Polyclonal Antibody - Protein Information

Name NLRP1 {ECO:0000303|PubMed:22665479, ECO:0000312|HGNC:HGNC:14374}

Function
Acts as the sensor component of the NLRP1 inflammasome, which mediates inflammasome activation in response to various pathogen- associated signals, leading to subsequent pyroptosis (PubMed:12191486, PubMed:17349957, PubMed:22665479, PubMed:27662089, PubMed:31484767, PubMed:33093214, PubMed:33410748, PubMed:33731929, PubMed:33731932, PubMed:35857590).

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 (PubMed:12191486, PubMed:17349957, PubMed:22665479). Acts as a recognition receptor (PRR): recognizes specific pathogens and other damage-associated signals, such as cleavage by some human enteroviruses and rhinoviruses, double-stranded RNA, UV-B irradiation, or Val-boroPro inhibitor, and mediates the formation of the inflammasome polymeric complex composed of NLRP1, CASP1 and PYCARD/ASC (PubMed:12191486, PubMed:17349957, PubMed:22665479, PubMed:25562666, PubMed:30096351, PubMed:30291141, PubMed:33093214, PubMed:33243852, PubMed:33410748, PubMed:35857590). In response to pathogen-associated signals, the N-terminal part of NLRP1 is degraded by the proteasome, releasing the cleaved C-terminal part of the protein (NACHT, LRR and PYD domains-containing protein 1, C-terminus), which polymerizes and associates with PYCARD/ASC to initiate the formation of the inflammasome complex: the NLRP1 inflammasome recruits pro-caspase-1 (proCASP1) and promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D (GSDMD), leading to pyroptosis (PubMed:12191486, PubMed:17349957, PubMed:22665479, PubMed:32051255, PubMed:33093214). In the absence of GSDMD expression, the NLRP1 inflammasome is able to recruit and activate CASP8, leading to activation of gasdermin-E (GSDME) (PubMed:33852854, PubMed:35594856). Activation of NLRP1 inflammasome is also required for HMGB1 secretion; the active cytokines and HMGB1 stimulate inflammatory responses (PubMed:22801494). Binds ATP and shows ATPase activity (PubMed:11113115, PubMed:15212762, PubMed:33243852). Plays an important role in antiviral immunity and inflammation in the human airway epithelium (PubMed:33093214). Specifically recognizes a number of pathogen-associated signals: upon infection by human rhinoviruses 14 and 16 (HRV-14 and HRV-16), NLRP1 is cleaved and activated which triggers NLRP1-dependent inflammasome activation and IL18 secretion (PubMed:33093214). Positive-strand RNA viruses, such as Semliki forest virus and long dsRNA activate the NLRP1 inflammasome, triggering IL1B release in a NLRP1-dependent fashion (PubMed:33243852). Acts as a direct sensor for long dsRNA and thus RNA virus infection (PubMed:33243852). May also be activated by muramyl dipeptide (MDP), a fragment of bacterial peptidoglycan, in a NOD2-dependent manner (PubMed:18511561). The NLRP1 inflammasome is also activated in response to UV-B irradiation causing ribosome collisions: ribosome collisions cause phosphorylation and activation of NLRP1 in a MAP3K20-dependent manner, leading to pyroptosis (PubMed:35857590).

Cellular Location
Cytoplasm, cytosol. Cytoplasm. Nucleus. Note=Nucleocytoplasmic distribution in lymphoid organs (probably in T-cells) and in neurons. In epithelial cells, predominantly cytoplasmic. [NACHT, LRR and PYD domains-containing protein 1, N-terminus]: Nucleus. Note=(Microbial infection) Interaction with human herpes virus 8/HHV-8 proteins ORF45 promotes translocation of the N-terminal part of NLRP1 into the nucleus, relieving autoinhibition of the NLRP1 inflammasome and leading to its activation.

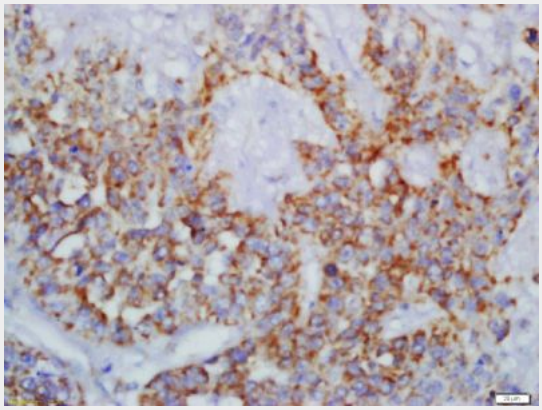
Tissue Location
Widely expressed (PubMed:11113115, PubMed:17164409). Abundantly expressed in primary immune cells (isoform 1 and isoform 2), including in neutrophils, monocytes/macrophages, dendritic cells (mostly Langerhans cells), and B- and T-lymphocytes (at protein level) (PubMed:15285719, PubMed:17164409). Strongly expressed in epithelial cells lining the glandular epithelium, such as that of the gastrointestinal tract (stomach, small intestine, colon), the respiratory tract (trachea and bronchi), and the endometrial and endocervical glands, gallbladder, prostate, and breast (at protein level). In testis, expressed in spermatogonia and primary spermatocytes, but not in Sertoli cells (at protein level). In the brain, expressed in neurons, in particular in pyramidal ones and in oligodendrocytes, but not detected in microglia (at protein level) (PubMed:17164409). Expressed in adult and fetal ocular tissues, including in adult and 24-week old fetal choroid, sclera, cornea, and optic nerve, as well as in adult retina and fetal retina/retinal pigment epithelium (PubMed:23349227). Highly expressed in the skin throughout the epidermis and in dermal fibroblasts, in both glabrous skin and plantar skin. It is detected in keratinocytes, but not in melanocytes. Expressed in epidermal appendages such as hair follicles (PubMed:27662089).

CARD7/NALP1 Polyclonal 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

CARD7/NALP1 Polyclonal Antibody - Images



Tissue/cell: human lung carcinoma; 4% Paraformaldehyde-fixed and paraffin-embedded;

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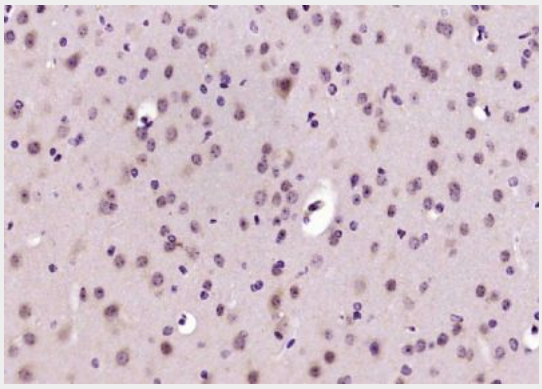
Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37℃ for 20 min;
Incubation: Anti-CARD Polyclonal Antibody, Unconjugated(bs-6854R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Paraformaldehyde-fixed, paraffin embedded (mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CARD7) Polyclonal Antibody, Unconjugated (bs-6854R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.