

## Caspase-1 Antibody

Catalog # ASC10298

### Specification

#### Caspase-1 Antibody - Product Information

|                   |                                                                                                                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application       | WB, IHC, IF                                                                                                                                                                                                      |
| Primary Accession | <a href="#">P29466</a>                                                                                                                                                                                           |
| Other Accession   | <a href="#">NP_150634</a> ,<br><a href="#">15431328</a>                                                                                                                                                          |
| Reactivity        | Human                                                                                                                                                                                                            |
| Host              | Rabbit                                                                                                                                                                                                           |
| Clonality         | Polyclonal                                                                                                                                                                                                       |
| Isotype           | IgG                                                                                                                                                                                                              |
| Application Notes | Casp-1 antibody can be used for the detection of Caspase-1 by Western blot at 0.5 to 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 10 µg/mL. For immunofluorescence start at 20 µg/mL. |

#### Caspase-1 Antibody - Additional Information

Gene ID **834**  
**Other Names**  
Caspase-1 Antibody: ICE, P45, IL1BC, IL1BCE, Caspase-1, Interleukin-1 beta convertase, CASP-1, caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase)

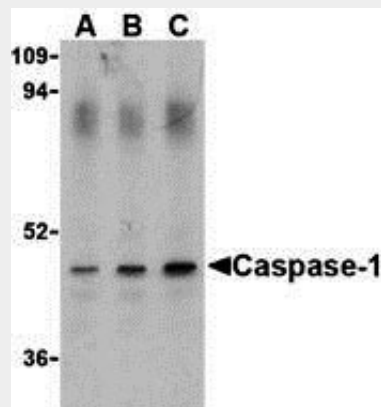
#### Target/Specificity

CASP1; Depending on cell lines or tissues used, other cleavage products may be observed.

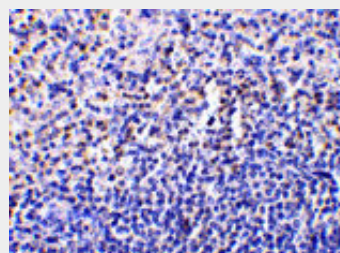
#### Reconstitution & Storage

Caspase-1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

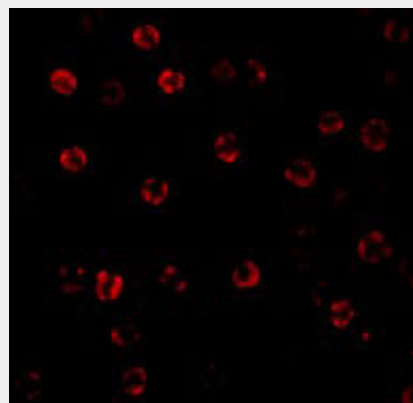
#### Precautions



Western blot analysis of Caspase-1 in HeLa cell lysate with Caspase-1 antibody (IN) at (A) 0.5, (B) 1, and (C) 2 µg/mL.



Immunohistochemistry of caspase-1 in human spleen tissue with caspase-1 antibody at 10 µg/mL.



Immunofluorescence of Caspase-1 in HeLa cells with Caspase-1 antibody at 20 µg/mL.

#### Caspase-1 Antibody - Background

Caspase-1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

#### **Caspase-1 Antibody - Protein Information**

**Name** CASP1

**Synonyms** IL1BC, IL1BCE

#### **Function**

Thiol protease involved in a variety of inflammatory processes by proteolytically cleaving other proteins, such as the precursors of the inflammatory cytokines interleukin-1 beta (IL1B) and interleukin 18 (IL18) as well as the pyroptosis inducer Gasdermin-D (GSDMD), into active mature peptides (PubMed:<a href="http://www.uniprot.org/citations/15326478" target="\_blank">15326478</a>, PubMed:<a href="http://www.uniprot.org/citations/1574116" target="\_blank">1574116</a>, PubMed:<a href="http://www.uniprot.org/citations/7876192" target="\_blank">7876192</a>, PubMed:<a href="http://www.uniprot.org/citations/15498465" target="\_blank">15498465</a>, PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>, PubMed:<a href="http://www.uniprot.org/citations/32051255" target="\_blank">32051255</a>). Plays a key role in cell immunity as an inflammatory response initiator: once activated through formation of an inflammasome complex, it initiates a proinflammatory response through the cleavage of the two inflammatory cytokines IL1B and IL18, releasing the mature cytokines which are involved in a variety of inflammatory processes (PubMed:<a href="http://www.uniprot.org/citations/1574116" target="\_blank">1574116</a>, PubMed:<a href="http://www.uniprot.org/citations/7876192" target="\_blank">7876192</a>, PubMed:<a href="http://www.uniprot.org/citations/15498465" target="\_blank">15498465</a>, PubMed:<a href="http://www.uniprot.org/citations/15326478" target="\_blank">15326478</a>).

**Caspase-1 Antibody:** Caspases are a family of cysteine proteases that can be divided into the apoptotic and inflammatory caspase subfamilies. Unlike the apoptotic caspases, members of the inflammatory subfamily are generally not involved in cell death but are associated with the immune response to microbial pathogens. Members of this subfamily include caspase-1, -4, -5, and -12 and can activate proinflammatory cytokines such as IL-1 $\beta$  and IL-18. Caspase-1 was initially identified as an IL-1 $\beta$ -converting enzyme; later experiments revealed it to be a mammalian homolog of the *C. elegans* cell death gene *ced-3* whose overexpression can induce apoptosis in fibroblasts.

#### **Caspase-1 Antibody - References**

Martinon F and Tschopp J. Inflammatory caspases: linking an intracellular innate immune system to autoinflammatory diseases. *CCell* 2004; 117:561-74.  
Zhivotovsky B and Orrenius S. Caspase-2 function in response to DNA damage. *Biochim. Biophys. Res. Comm.* 2005; 331:859-67.  
Kuida K, Lippke JA, Ku G, et al. Altered cytokine export and apoptosis in mice deficient in interleukin-1  $\beta$  converting enzyme. *Science* 1995; 267:2000-3.  
Gracie JA, Robertson SE, and McInnes IB. Interleukin-18. *J. Leukoc. Biol.* 2003; 73:213-224.

PubMed:<a href="http://www.uniprot.org/citations/32051255" target="\_blank">32051255</a>). Cleaves a tetrapeptide after an Asp residue at position P1 (PubMed:<a href="http://www.uniprot.org/citations/1574116" target="\_blank">1574116</a>, PubMed:<a href="http://www.uniprot.org/citations/7876192" target="\_blank">7876192</a>, PubMed:<a href="http://www.uniprot.org/citations/15498465" target="\_blank">15498465</a>). Also initiates pyroptosis, a programmed lytic cell death pathway, through cleavage of GSDMD (PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>). In contrast to cleavage of interleukins IL1B and IL1B, recognition and cleavage of GSDMD is not strictly dependent on the consensus cleavage site but depends on an exosite interface on CASP1 that recognizes and binds the Gasdermin-D, C-terminal (GSDMD-CT) part (PubMed:<a href="http://www.uniprot.org/citations/32051255" target="\_blank">32051255</a>, PubMed:<a href="http://www.uniprot.org/citations/32109412" target="\_blank">32109412</a>, PubMed:<a href="http://www.uniprot.org/citations/32553275" target="\_blank">32553275</a>). Upon inflammasome activation, during DNA virus infection but not RNA virus challenge, controls antiviral immunity through the cleavage of CGAS, rendering it inactive (PubMed:<a href="http://www.uniprot.org/citations/28314590" target="\_blank">28314590</a>). In apoptotic cells, cleaves SPHK2 which is released from cells and remains enzymatically active extracellularly (PubMed:<a href="http://www.uniprot.org/citations/20197547" target="\_blank">20197547</a>).

**Cellular Location**

Cytoplasm. Cell membrane

**Tissue Location**

Expressed in larger amounts in spleen and lung. Detected in liver, heart, small intestine, colon, thymus, prostate, skeletal muscle, peripheral blood leukocytes, kidney and testis. No expression in the brain.

## **Caspase-1 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](#)