

**Anti-Caspase 4 Antibody**  
Catalog # ABO10809**Specification****Anti-Caspase 4 Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P49662</a>
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for Caspase-4(CASP4) detection. Tested with WB, IHC-P in Human.

**Reconstitution**

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

**Anti-Caspase 4 Antibody - Additional Information**

Gene ID 837

**Other Names**

Caspase-4, CASP-4, 3.4.22.57, ICE and Ced-3 homolog 2, ICH-2, ICE(rel)-II, Mih1  
{ECO:0000303|Ref.4}, Protease TX, Caspase-4 subunit 1, Caspase-4 subunit 2, CASP4, ICH2

**Calculated MW**

43262 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, By Heat<br>Western blot, 0.1-0.5 µg/ml, Human<br>

**Subcellular Localization**

Endoplasmic reticulum membrane. Mitochondrion.

**Tissue Specificity**

Widely expressed, with highest levels in spleen and lung. Moderate expression in heart and liver, low expression in skeletal muscle, kidney and testis. Not found in the brain.

**Protein Name**

Caspase-4

**Contents**

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

**Immunogen**

A synthetic peptide corresponding to a sequence at the N-terminus of human Caspase 4(104-124aa DALKLCPHEEFLRLCKERAAE).

### Purification

Immunogen affinity purified.

### Cross Reactivity

No cross reactivity with other proteins

### Storage

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

### Sequence Similarities

Belongs to the peptidase C14A family.

## Anti-Caspase 4 Antibody - Protein Information

**Name** CASP4 {ECO:0000303|PubMed:15123740, ECO:0000312|HGNC:HGNC:1505}

### Function

Inflammatory caspase that acts as the effector of the non- canonical inflammasome by mediating lipopolysaccharide (LPS)-induced pyroptosis (PubMed:<a href="http://www.uniprot.org/citations/25119034" target="\_blank">25119034</a>, PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>, PubMed:<a href="http://www.uniprot.org/citations/32109412" target="\_blank">32109412</a>, PubMed:<a href="http://www.uniprot.org/citations/34671164" target="\_blank">34671164</a>, PubMed:<a href="http://www.uniprot.org/citations/37001519" target="\_blank">37001519</a>, PubMed:<a href="http://www.uniprot.org/citations/37993712" target="\_blank">37993712</a>, PubMed:<a href="http://www.uniprot.org/citations/37993714" target="\_blank">37993714</a>). Also indirectly activates the NLRP3 and NLRP6 inflammasomes (PubMed:<a href="http://www.uniprot.org/citations/23516580" target="\_blank">23516580</a>, PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>, PubMed:<a href="http://www.uniprot.org/citations/32109412" target="\_blank">32109412</a>, PubMed:<a href="http://www.uniprot.org/citations/7797510" target="\_blank">7797510</a>). Acts as a thiol protease that cleaves a tetrapeptide after an Asp residue at position P1: catalyzes cleavage of CGAS, GSDMD and IL18 (PubMed:<a href="http://www.uniprot.org/citations/15326478" target="\_blank">15326478</a>, PubMed:<a href="http://www.uniprot.org/citations/23516580" target="\_blank">23516580</a>, PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>, PubMed:<a href="http://www.uniprot.org/citations/28314590" target="\_blank">28314590</a>, PubMed:<a href="http://www.uniprot.org/citations/32109412" target="\_blank">32109412</a>, PubMed:<a href="http://www.uniprot.org/citations/37993712" target="\_blank">37993712</a>, PubMed:<a href="http://www.uniprot.org/citations/37993714" target="\_blank">37993714</a>, PubMed:<a href="http://www.uniprot.org/citations/7797510" target="\_blank">7797510</a>). Effector of the non-canonical inflammasome independently of NLRP3 inflammasome and CASP1: the non-canonical inflammasome promotes pyroptosis through GSDMD cleavage without involving secretion of cytokine IL1B (PubMed:<a href="http://www.uniprot.org/citations/25119034" target="\_blank">25119034</a>, PubMed:<a href="http://www.uniprot.org/citations/25121752" target="\_blank">25121752</a>, PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>, PubMed:<a href="http://www.uniprot.org/citations/31268602" target="\_blank">31268602</a>, PubMed:<a href="http://www.uniprot.org/citations/32109412" target="\_blank">32109412</a>, PubMed:<a href="http://www.uniprot.org/citations/37993712" target="\_blank">37993712</a>, PubMed:<a href="http://www.uniprot.org/citations/37993714" target="\_blank">37993714</a>). In the non-canonical inflammasome, CASP4 is activated by direct binding to the lipid A moiety of LPS without the need of an upstream sensor (PubMed:<a href="http://www.uniprot.org/citations/25119034" target="\_blank">25119034</a>, PubMed:<a

href="http://www.uniprot.org/citations/25121752" target="\_blank">25121752</a>, PubMed:<a href="http://www.uniprot.org/citations/29520027" target="\_blank">29520027</a>, PubMed:<a href="http://www.uniprot.org/citations/32510692" target="\_blank">32510692</a>, PubMed:<a href="http://www.uniprot.org/citations/32581219" target="\_blank">32581219</a>, PubMed:<a href="http://www.uniprot.org/citations/37993712" target="\_blank">37993712</a>). LPS-binding promotes CASP4 activation and CASP4-mediated cleavage of GSDMD and IL18, followed by IL18 secretion through the GSDMD pore, pyroptosis of infected cells and their extrusion into the gut lumen (PubMed:<a href="http://www.uniprot.org/citations/25119034" target="\_blank">25119034</a>, PubMed:<a href="http://www.uniprot.org/citations/25121752" target="\_blank">25121752</a>, PubMed:<a href="http://www.uniprot.org/citations/37993712" target="\_blank">37993712</a>, PubMed:<a href="http://www.uniprot.org/citations/37993714" target="\_blank">37993714</a>). Also indirectly promotes secretion of mature cytokines (IL1A and HMGB1) downstream of GSDMD-mediated pyroptosis via activation of the NLRP3 and NLRP6 inflammasomes (PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>, PubMed:<a href="http://www.uniprot.org/citations/32109412" target="\_blank">32109412</a>). Involved in NLRP3-dependent CASP1 activation and IL1B secretion in response to non-canonical activators, such as UVB radiation or cholera enterotoxin (PubMed:<a href="http://www.uniprot.org/citations/22246630" target="\_blank">22246630</a>, PubMed:<a href="http://www.uniprot.org/citations/23516580" target="\_blank">23516580</a>, PubMed:<a href="http://www.uniprot.org/citations/24879791" target="\_blank">24879791</a>, PubMed:<a href="http://www.uniprot.org/citations/25964352" target="\_blank">25964352</a>, PubMed:<a href="http://www.uniprot.org/citations/26173988" target="\_blank">26173988</a>, PubMed:<a href="http://www.uniprot.org/citations/26174085" target="\_blank">26174085</a>, PubMed:<a href="http://www.uniprot.org/citations/26508369" target="\_blank">26508369</a>). Involved in NLRP6 inflammasome- dependent activation in response to lipoteichoic acid (LTA), a cell- wall component of Gram-positive bacteria, which leads to CASP1 activation and IL1B secretion (PubMed:<a href="http://www.uniprot.org/citations/33377178" target="\_blank">33377178</a>). Involved in LPS- induced IL6 secretion; this activity may not require caspase enzymatic activity (PubMed:<a href="http://www.uniprot.org/citations/26508369" target="\_blank">26508369</a>). The non-canonical inflammasome is required for innate immunity to cytosolic, but not vacuolar, bacteria (By similarity). Plays a crucial role in the restriction of S.typhimurium replication in colonic epithelial cells during infection (PubMed:<a href="http://www.uniprot.org/citations/25121752" target="\_blank">25121752</a>, PubMed:<a href="http://www.uniprot.org/citations/25964352" target="\_blank">25964352</a>). Activation of the non-canonical inflammasome in brain endothelial cells can lead to excessive pyroptosis, leading to blood-brain barrier breakdown (By similarity). Pyroptosis limits bacterial replication, while cytokine secretion promotes the recruitment and activation of immune cells and triggers mucosal inflammation (PubMed:<a href="http://www.uniprot.org/citations/25121752" target="\_blank">25121752</a>, PubMed:<a href="http://www.uniprot.org/citations/25964352" target="\_blank">25964352</a>, PubMed:<a href="http://www.uniprot.org/citations/26375003" target="\_blank">26375003</a>). May also act as an activator of adaptive immunity in dendritic cells, following activation by oxidized phospholipid 1- palmitoyl-2-arachidonoyl- sn-glycero-3-phosphorylcholine, an oxidized phospholipid (oxPAPC) (By similarity). Involved in cell death induced by endoplasmic reticulum stress and by treatment with cytotoxic APP peptides found in Alzheimer's patient brains (PubMed:<a href="http://www.uniprot.org/citations/15123740" target="\_blank">15123740</a>, PubMed:<a href="http://www.uniprot.org/citations/22246630" target="\_blank">22246630</a>, PubMed:<a href="http://www.uniprot.org/citations/23661706" target="\_blank">23661706</a>). Cleavage of GSDMD is not strictly dependent on the consensus cleavage site but depends on an exosite interface on CASP4 that recognizes and binds the Gasdermin-D, C- terminal (GSDMD-CT) part (PubMed:<a href="http://www.uniprot.org/citations/32109412" target="\_blank">32109412</a>). Catalyzes cleavage and maturation of IL18; IL18 processing also depends of the exosite interface on CASP4 (PubMed:<a href="http://www.uniprot.org/citations/15326478" target="\_blank">15326478</a>, PubMed:<a href="http://www.uniprot.org/citations/37993712" target="\_blank">37993712</a>, PubMed:<a href="http://www.uniprot.org/citations/37993714" target="\_blank">37993714</a>). In contrast, it does not directly process IL1B (PubMed:<a href="http://www.uniprot.org/citations/7743998" target="\_blank">7743998</a>, PubMed:<a href="http://www.uniprot.org/citations/7797510" target="\_blank">7797510</a>

target="\_blank">7797510</a>, PubMed:<a href="http://www.uniprot.org/citations/7797592" target="\_blank">7797592</a>). During non-canonical inflammasome activation, cuts CGAS and may play a role in the regulation of antiviral innate immune activation (PubMed:<a href="http://www.uniprot.org/citations/28314590" target="\_blank">28314590</a>).

#### Cellular Location

Cytoplasm, cytosol. Endoplasmic reticulum membrane; Peripheral membrane protein; Cytoplasmic side. Mitochondrion Inflammasome. Secreted Note=Predominantly localizes to the endoplasmic reticulum (ER) Association with the ER membrane requires TMEM214 (PubMed:15123740) Released in the extracellular milieu by keratinocytes following UVB irradiation (PubMed:22246630).

#### Tissue Location

Widely expressed, including in keratinocytes and colonic and small intestinal epithelial cells (at protein level). Not detected in brain.

### Anti-Caspase 4 Antibody - Protocols

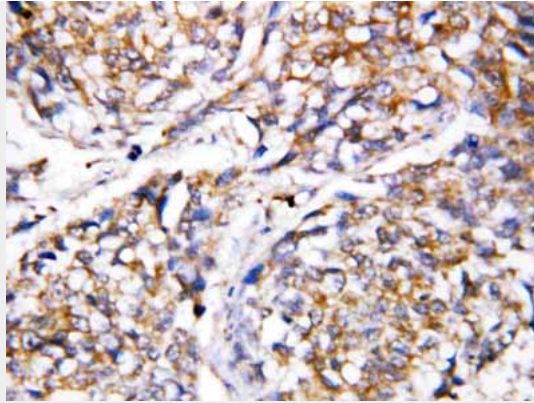
Provided below are standard protocols that you may find useful for product applications.

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

### Anti-Caspase 4 Antibody - Images



Anti-Caspase 4 antibody, ABO10809, Western blottingAll lanes: Anti Caspase 4 (ABO10809) at 0.5ug/mlLane 1: MCF-7 Whole Cell Lysate at 40ugLane 2: HELA Whole Cell Lysate at 40ugLane 3: JURKAT Whole Cell Lysate at 40ugLane 4: CEM Whole Cell Lysate at 40ugLane 5: SW620 Whole Cell Lysate at 40ugPredicted bind size: 43KDObserved bind size: 20KD



Anti-Caspase 4 antibody, ABO10809, IHC(P)IHC(P): Human Mammary Cancer Tissue

#### **Anti-Caspase 4 Antibody - Background**

Caspase 4 is an enzyme that proteolytically cleaves other proteins at an aspartic acid residue, and belongs to a family of cysteine proteases called caspases. The Caspase 4 gene is mapped to a P1 clone containing the ICE gene, which is located at chromosome 11q22.2-q22.3. It contains 8 coding exons. The function of caspase 4 is not fully known, but it is believed to be an inflammatory caspase, along with caspase 1, caspase 5 (and the murine homolog caspase 11), with a role in the immune system.