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Caspase-11 Antibody
Rabbit Polyclonal Antibody
Catalog # ABV10014

Specification

Caspase-11 Antibody - Product Information

Application	**WB**
Primary Accession	P70343
Other Accession	NM_007609
Reactivity	**Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**42742**

Caspase-11 Antibody - Additional Information

Gene ID 12363

Application & Usage

Western blotting (0.5-4 µg/ml). The antibody detects procaspase-11 (45 kDa), a partially cleaved fragment (30 kDa) and fully cleaved fragment (20 kDa). A 58 kDa unknown identity band was also detected in 3T3 cells.

Other Names
CASP-11, ICEB, ICH-3

Target/Specificity
Caspase-11

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
100 µg (0.2 mg/ml) protein A purified rabbit anti-caspase-11 polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 30% glycerol, 0.5% BSA, 0.01% thimerosal.

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
Caspase-11 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Caspase-11 Antibody - Protein Information

Name Casp4 {ECO:0000312|MGI:MGI:107700}

Function
Inflammatory caspase that acts as the effector of the non- canonical inflammasome by mediating lipopolysaccharide (LPS)-induced pyroptosis (PubMed:22002608, PubMed:23348507, PubMed:23887873, PubMed:24031018, PubMed:25119034, PubMed:30135078, PubMed:37001519). Also indirectly activates the NLRP3 and NLRP6 inflammasomes (PubMed:26320999, PubMed:30392956, PubMed:37001519). Acts as a thiol protease that cleaves a tetrapeptide after an Asp residue at position P1: catalyzes cleavage of CGAS and GSDMD (PubMed:26375003, PubMed:28314590, PubMed:30392956). In contrast to its human ortholog, does not cleave IL18 (PubMed:37993712, PubMed:37993714). 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 and IL18 (PubMed:22002608, PubMed:22895188, PubMed:23348507, PubMed:23887873, PubMed:24031018, PubMed:26320999, PubMed:26375003, PubMed:30135078, PubMed:30589883). In the non-canonical inflammasome, CASP4/CASP11 is activated by direct binding to the lipid A moiety of LPS without the need of an upstream sensor (PubMed:22002608, PubMed:23348507, PubMed:25119034, PubMed:37001519). LPS-binding promotes CASP4/CASP11 activation and CASP4/CASP11-mediated cleavage of GSDMD, followed by pyroptosis of infected cells and their extrusion into the gut lumen (PubMed:22002608, PubMed:23348507, PubMed:25119034). Also indirectly promotes secretion of mature cytokines (IL1A, IL18 and HMGB1) downstream of GSDMD-mediated pyroptosis via activation of the NLRP3 and NLRP6 inflammasomes (By similarity). Involved in NLRP3-dependent CASP1 activation and IL1B and IL18 secretion in response to non-canonical activators, such as UVB radiation or cholera enterotoxin (PubMed:<a

href="http://www.uniprot.org/citations/26320999" target="_blank">26320999). 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 and IL18 secretion (PubMed:30392956). Involved in LPS-induced IL6 secretion; this activity may not require caspase enzymatic activity (By similarity). The non-canonical inflammasome is required for innate immunity to cytosolic, but not vacuolar, bacteria (PubMed:23348507). Plays a crucial role in the restriction of S.typhimurium replication in colonic epithelial cells during infection (PubMed:25121752, PubMed:26375003, PubMed:34671164). Pyroptosis limits bacterial replication, while cytokine secretion promotes the recruitment and activation of immune cells and triggers mucosal inflammation (PubMed:25121752). 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) (PubMed:27103670). Cleavage of GSDMD is not strictly dependent on the consensus cleavage site but depends on an exosite interface on CASP4/CASP11 that recognizes and binds the Gasdermin-D, C-terminal (GSDMD-CT) part (PubMed:32109412, PubMed:32554464). In contrast, it does not directly process IL1B (PubMed:8702803, PubMed:9038361). During non-canonical inflammasome activation, cuts CGAS and may play a role in the regulation of antiviral innate immune activation (PubMed:28314590).

Cellular Location
Cytoplasm, cytosol {ECO:0000250|UniProtKB:P49662}. Cytoplasm. Endoplasmic reticulum membrane {ECO:0000250|UniProtKB:P49662}; Peripheral membrane protein {ECO:0000250|UniProtKB:P49662}; Cytoplasmic side {ECO:0000250|UniProtKB:P49662}. Mitochondrion {ECO:0000250|UniProtKB:P49662}. Inflammasome. Secreted {ECO:0000250|UniProtKB:P49662} Note=Predominantly localizes to the endoplasmic reticulum (ER) Association with the ER membrane requires TMEM214. Released in the extracellular milieu by keratinocytes following UVB irradiation {ECO:0000250|UniProtKB:P49662}

Tissue Location
Widely expressed, including in thymus, lung and spleen (at protein level). Very low levels, if any, in the brain

Caspase-11 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

Caspase-11 Antibody - Images

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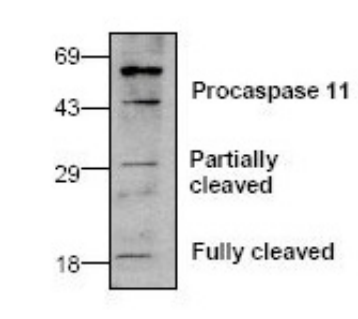

Western blot analysis of Caspase 11 with 3T3 cell lysate.

Caspase-11 Antibody - Background

Caspase family of cysteine proteases has been shown to play a key role in apoptosis. Caspase-11 is also synthesized as inactive pro-enzyme that are processed in cells undergoing apoptosis or inflammation. The processed form of caspase-11 consists of large and small subunits which associate to form an active enzyme.