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Caspase 1 Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51035

Product Information

Application	WB
Primary Accession	P29466
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	45159

Additional Information

Gene ID	834
Other Names	Caspase-1, CASP-1, Interleukin-1 beta convertase, IL-1BC, Interleukin-1 beta-converting enzyme, ICE, IL-1 beta-converting enzyme, p45, Caspase-1 subunit p20, Caspase-1 subunit p10, CASP1, IL1BC, IL1BCE
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human Caspase 1. The exact sequence is proprietary.
Dilution	WB~~ 1:1000
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
Storage	Store at -20 °C.Stable for 12 months from date of receipt

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:15326478, PubMed:15498465, PubMed:1574116, PubMed:26375003, PubMed:32051255, PubMed:37993714, PubMed:7876192, PubMed:9334240). Plays a key role in cell immunity as an inflammatory response initiator: once activated through formation of an inflammasome complex, it initiates a pro-inflammatory 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:15326478, PubMed:15498465, PubMed:1574116, PubMed:32051255, PubMed:7876192).

	Cleaves a tetrapeptide after an Asp residue at position P1 (PubMed:15498465, PubMed:1574116, PubMed:7876192). Also initiates pyroptosis, a programmed lytic cell death pathway, through cleavage of GSDMD (PubMed:26375003). In contrast to cleavage of interleukin 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:32051255, PubMed:32109412, PubMed:32553275). Cleaves and activates CASP7 in response to bacterial infection, promoting plasma membrane repair (PubMed:22464733). Upon inflammasome activation, during DNA virus infection but not RNA virus challenge, controls antiviral immunity through the cleavage of CGAS, rendering it inactive (PubMed:28314590). In apoptotic cells, cleaves SPHK2 which is released from cells and remains enzymatically active extracellularly (PubMed:20197547).
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.

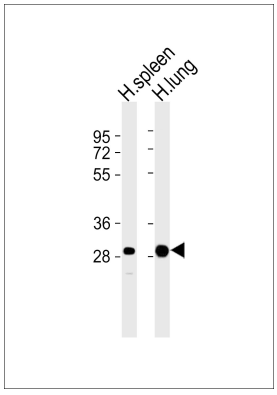
Background

Thiol protease that cleaves IL-1 beta between an Asp and an Ala, releasing the mature cytokine which is involved in a variety of inflammatory processes. Important for defense against pathogens. Cleaves and activates sterol regulatory element binding proteins (SREBPs). Can also promote apoptosis.

References

Thornberry N.A.,et al.Nature 356:768-774(1992).
Cerretti D.P.,et al.Science 256:97-100(1992).
Alnemri E.S.,et al.J. Biol. Chem. 270:4312-4317(1995).
Totoki Y.,et al.Submitted (APR-2005) to the EMBL/GenBank/DDBJ databases.
Taylor T.D.,et al.Nature 440:497-500(2006).

Images



All lanes : Anti-Caspase 1 Antibody at 1:1000 dilution Lane 1: H.spleen tissue lysates Lane 2: H.lung tissue lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/10000 dilution Predicted band size : 45 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Citations

- Single-walled carbon-nanohorns improve biocompatibility over nanotubes by triggering less protein-initiated pyroptosis and apoptosis in macrophages.

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