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Anti-Caspase 1 p10 Antibody

Catalog # AP51962

Product Information

Application	WB, IF/IC
Primary Accession	P29466
Reactivity	Human, Mouse, Rat
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	45159

Additional Information

Gene ID	834
Other Names	IL1BC; IL1BCE; Caspase-1; CASP-1; Interleukin-1 beta convertase; IL-1BC; Interleukin-1 beta-converting enzyme; ICE; IL-1 beta-converting enzyme; p45
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human Caspase 1. The exact sequence is proprietary.
Dilution	WB~~ 1:1000 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

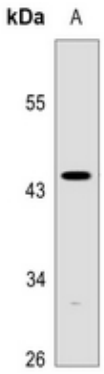
Name	CASP1
Synonyms	IL1BC, IL1BCE
Function	Thiol protease involved in a variety of inflammatory processes by proteolytically cleaving other proteins, such as the precursors of the inflammatory cytokines interleukin-1 beta (IL1B) and interleukin 18 (IL18) as well as the pyroptosis inducer Gasdermin-D (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.

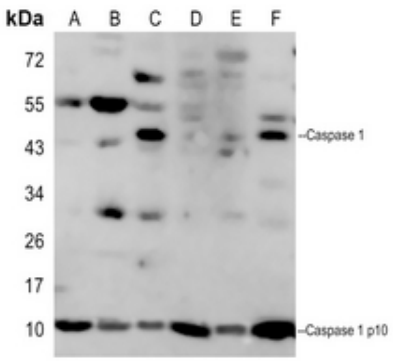
References

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Alnemri E.S.,et al.J. Biol. Chem. 270:4312-4317(1995).
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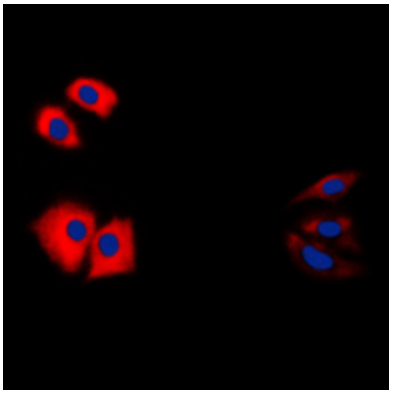
Images



Western blot analysis of Caspase 1 p10 expression in human spleen (A) whole cell lysates. (Predicted band size: 45 kD; Observed band size: 45 kD)



Western blot analysis of Caspase 1 p10 expression in H1792 (A), MCF7 (B), Hela (C), mouse spleen (D), mouse lung (E), rat spleen (F) whole cell lysates.



Immunofluorescent analysis of Caspase 1 p10 staining in HeLa cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with a DyLight 594-conjugated secondary antibody (red) in PBS at room temperature in the dark. DAPI was used to stain the cell nuclei (blue).

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