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Caspase-1 P10 Rabbit pAb

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Catalog # AP52182

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P29466
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	45159
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Caspase-1
Epitope Specificity	320-404/404
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Cytoplasm.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a protein which is a member of the cysteine-aspartic acid protease (caspase) family. Sequential activation of caspases plays a central role in the execution-phase of cell apoptosis. Caspases exist as inactive proenzymes which undergo proteolytic processing at conserved aspartic residues to produce 2 subunits, large and small, that dimerize to form the active enzyme. This gene was identified by its ability to proteolytically cleave and activate the inactive precursor of interleukin-1, a cytokine involved in the processes such as inflammation, septic shock, and wound healing. This gene has been shown to induce cell apoptosis and may function in various developmental stages. Studies of a similar gene in mouse suggest a role in the pathogenesis of Huntington disease. Alternative splicing of this gene results in five transcript variants encoding distinct isoforms. [provided by RefSeq].

Additional Information

Gene ID	834
Other Names	Caspase-1, CASP-1, 3.4.22.36, 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
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=1ug/Test
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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.

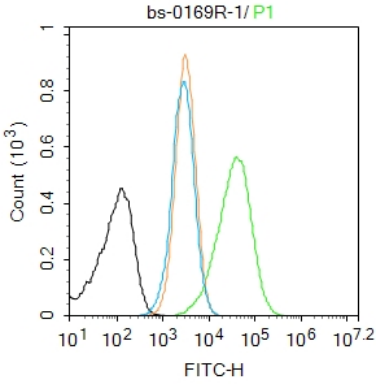
Background

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

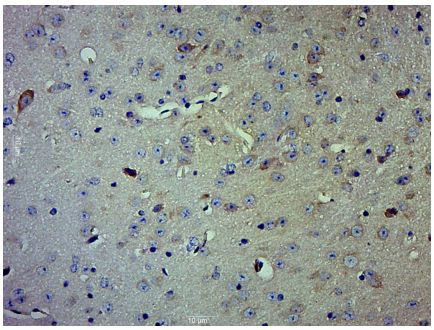
References

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



Blank control:HL-60.
Primary Antibody (green line): Rabbit Anti-Caspase-1 P10 antibody (AP52182)
Dilution: 1 μg /10^6 cells;
Isotype Control Antibody (orange line): Rabbit IgG .
Secondary Antibody : Goat anti-rabbit IgG-AF488
Dilution: 1 μg /test.
Protocol
The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 0.1% PBST for 20 min at room temperature. The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.



Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Caspase-1 P10) Polyclonal Antibody, Unconjugated (AP52182) at 1:500 overnight at 4°C, followed by a conjugated secondary (sp-0023) for 20 minutes and DAB staining.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.