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Caspase 7 Recombinant Rabbit mAb

Catalog # AP99161

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P97864
Other Accession	P97864
Reactivity	Rat, Mouse
Host	Rabbit
Clonality	Recombinant
Calculated MW	34061
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from mouse Caspase 7
Epitope Specificity	260-303/303
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the peptidase C14A family.
SUBUNIT	Heterotetramer that consists of two anti-parallel arranged heterodimers, each one formed by a 20 kDa (p20) and a 11 kDa (p11) subunit. Interacts with BIRC6/bruce.
Post-translational modifications	Propeptide domains can also be cleaved efficiently by caspase-3. Active heterodimers between the small subunit of caspase-7 and the large subunit of caspase-3, and vice versa, also occur.
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 two subunits, large and small, that dimerize to form the active enzyme. The precursor of this caspase is cleaved by caspase3 and 10. It is activated upon cell death stimuli and induces apoptosis. Alternative splicing results in four transcript variants, encoding three distinct isoforms. [provided by RefSeq].

Additional Information

Gene ID	12369
Other Names	CASP-7; CMH-1; ICE-LAP3; LICE2; MCH3; ICE-IAP3; caspase-7; mCASP-7; CASP7_MESAU; CASP7; Apoptotic protease Mch-3; ICE-like apoptotic protease 3 (ICE-LAP3); SREBP cleavage activity 2 (SCA-2); 3.4.22.60; CASP7_HUMAN; CASP7_MOUSE; Cysteine protease LICE2; caspase 7; caspase 7, apoptosis-related cysteine protease; caspase 7, apoptosis-related cysteine peptidase

Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
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	Casp7 {ECO:0000303|PubMed:9070923, ECO:0000312|MGI:MGI:109383}
Function	Thiol protease involved in different programmed cell death processes, such as apoptosis, pyroptosis or granzyme-mediated programmed cell death, by proteolytically cleaving target proteins (PubMed:16469926, PubMed:19168786). Has a marked preference for Asp- Glu-Val-Asp (DEVD) consensus sequences, with some plasticity for alternate non-canonical sequences (PubMed:25231987). Its involvement in the different programmed cell death processes is probably determined by upstream proteases that activate CASP7 (PubMed:18667412, PubMed:35705808). Acts as an effector caspase involved in the execution phase of apoptosis: following cleavage and activation by initiator caspases (CASP8 and/or CASP9), mediates execution of apoptosis by catalyzing cleavage of proteins, such as CLSPN, PARP1, PTGES3 and YY1 (PubMed:16469926). Compared to CASP3, acts as a minor executioner caspase and cleaves a limited set of target proteins (PubMed:16469926). Acts as a key regulator of the inflammatory response in response to bacterial infection by catalyzing cleavage and activation of the sphingomyelin phosphodiesterase SMPD1 in the extracellular milieu, thereby promoting membrane repair (PubMed:35705808). Regulates pyroptosis in intestinal epithelial cells: cleaved and activated by CASP1 in response to S.typhimurium infection, promoting its secretion to the extracellular milieu, where it catalyzes activation of SMPD1, generating ceramides that repair membranes and counteract the action of gasdermin-D (GSDMD) pores (PubMed:22807671, PubMed:35705808). Regulates granzyme-mediated programmed cell death in hepatocytes: cleaved and activated by granzyme B (GZMB) in response to bacterial infection, promoting its secretion to the extracellular milieu, where it catalyzes activation of SMPD1, generating ceramides that repair membranes and counteract the action of perforin (PRF1) pores (PubMed:35705808). Following cleavage by CASP1 in response to inflammasome activation, catalyzes processing and inactivation of PARP1, alleviating the transcription repressor activity of PARP1 (PubMed:22464733). Acts as an inhibitor of type I interferon production during virus-induced apoptosis by mediating cleavage of antiviral proteins CGAS, IRF3 and MAVS, thereby preventing cytokine overproduction (PubMed:30878284). Cleaves and activates sterol regulatory element binding proteins (SREBPs) (By similarity). Cleaves phospholipid scramblase proteins XKR4, XKR8 and XKR9 (PubMed:25231987). Cleaves BIRC6 following inhibition of BIRC6-caspase binding by DIABLO/SMAC (By similarity).
Cellular Location	Cytoplasm, cytosol {ECO:0000250|UniProtKB:P55210}. Nucleus {ECO:0000250|UniProtKB:P55210} Secreted, extracellular space Note=Following cleavage and activation by CASP1 or granzyme B (GZMB), secreted into the extracellular milieu by passing through the gasdermin-D (GSDMD) pores or perforin (PRF1) pore, respectively
Tissue Location	Highly expressed in heart, lung, liver and kidney. Low levels in spleen, skeletal muscle and testis. No expression in the brain.

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