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Caspase-8 Antibody

Catalog # ASC10303

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q14790
Other Accession	NP_001219, 15718704
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	55391
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Caspase-8 antibody can be used for the detection of caspase-8 by Western blot at 0.5 to 2 g/mL. Antibody can also be used for immunocytochemistry starting at 2 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	841
Other Names	Caspase-8 Antibody: CAP4, MACH, MCH5, FLICE, ALPS2B, Casp-8, Caspase-8, Apoptotic cysteine protease, CASP-8, caspase 8, apoptosis-related cysteine peptidase
Target/Specificity	CASP8; Depending on cell lines or tissues used, either full-length or other cleavage products may be observed.
Reconstitution & Storage	Caspase-8 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	Caspase-8 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CASP8 {ECO:0000303|PubMed:9931493, ECO:0000312|HGNC:HGNC:1509}
Function	Thiol protease that plays a key role in programmed cell death by acting as a molecular switch for apoptosis, necroptosis and pyroptosis, and is required to prevent tissue damage during embryonic development and adulthood (PubMed:23516580, PubMed:35338844, PubMed:35446120, PubMed:8681376, PubMed:8681377, PubMed:8962078, PubMed:9006941, PubMed:9184224). Initiator protease that induces extrinsic apoptosis by mediating cleavage and activation of effector caspases responsible for

	FAS/CD95-mediated and TNFRSF1A-induced cell death (PubMed:23516580, PubMed:35338844, PubMed:35446120, PubMed:8681376, PubMed:8681377, PubMed:8962078, PubMed:9006941, PubMed:9184224). Cleaves and activates effector caspases CASP3, CASP4, CASP6, CASP7, CASP9 and CASP10 (PubMed:16916640, PubMed:8962078, PubMed:9006941). Binding to the adapter molecule FADD recruits it to either receptor FAS/TNFRSF6 or TNFRSF1A (PubMed:8681376, PubMed:8681377). The resulting aggregate called the death-inducing signaling complex (DISC) performs CASP8 proteolytic activation (PubMed:9184224). The active dimeric enzyme is then liberated from the DISC and free to activate downstream apoptotic proteases (PubMed:9184224). Proteolytic fragments of the N-terminal propeptide (termed CAP3, CAP5 and CAP6) are likely retained in the DISC (PubMed:9184224). Also cleaves and activates BID, thereby promoting cytochrome C release from mitochrondria (By similarity). In addition to extrinsic apoptosis, also acts as a negative regulator of necroptosis: acts by cleaving RIPK1 at 'Asp-324', which is crucial to inhibit RIPK1 kinase activity, limiting TNF-induced apoptosis, necroptosis and inflammatory response (PubMed:31827280, PubMed:31827281). Also able to initiate pyroptosis by mediating cleavage and activation of gasdermin-C and -D (GSDMC and GSDMD, respectively): gasdermin cleavage promotes release of the N-terminal moiety that binds to membranes and forms pores, triggering pyroptosis (PubMed:32929201, PubMed:34012073). Initiates pyroptosis following inactivation of MAP3K7/TAK1 (By similarity). Also acts as a regulator of innate immunity by mediating cleavage and inactivation of N4BP1 downstream of TLR3 or TLR4, thereby promoting cytokine production (By similarity). May participate in the Granzyme B (GZMB) cell death pathways (PubMed:8755496). Cleaves PARP1 and PARP2 (PubMed:8681376). Independent of its protease activity, promotes cell migration following phosphorylation at Tyr-380 (PubMed:18216014, PubMed:27109099).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:Q9JHX4}. Nucleus {ECO:0000250|UniProtKB:Q9JHX4}. Cell projection, lamellipodium. Note=Recruitment to lamellipodia of migrating cells is enhanced by phosphorylation at Tyr-380
Tissue Location	Isoform 1, isoform 5 and isoform 7 are expressed in a wide variety of tissues. Highest expression in peripheral blood leukocytes, spleen, thymus and liver. Barely detectable in brain, testis and skeletal muscle

Background

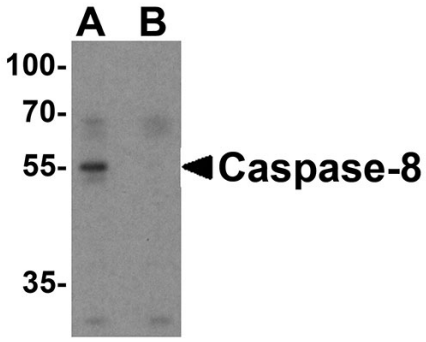
Caspase-8 Antibody: Caspases are a family of cysteine proteases that can be divided into the apoptotic and inflammatory caspase subfamilies. Unlike the apoptotic caspases, members of the inflammatory subfamily are generally not involved in cell death but are associated with the immune response to microbial pathogens. The apoptotic subfamily can be further divided into initiator caspases, which are activated in response to death signals, and executioner caspases, which are activated by the initiator caspases and are responsible for cleavage of cellular substrates that ultimately lead to cell death. Caspase-8 is an initiator caspase that was identified as a member of the Fas/APO-1 death-inducing signaling complex. The adaptor molecule FADD couples procaspase-8 to the Fas receptor death domain; subsequent oligomerization promotes procaspase-8 autoactivation. FLIP, a catalytically inactive caspase-8-like molecule inhibits these interactions and thus can inhibit apoptosis.

References

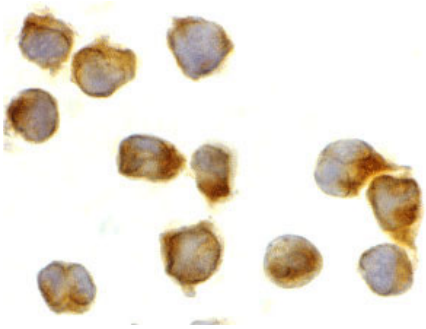
Martinon F and Tschopp J. Inflammatory caspases: linking an intracellular innate immune system to autoinflammatory diseases. Cell 2004; 117:561-74.
Zhivotovsky B and Orrenius S. Caspase-2 function in response to DNA damage. Biochim. Biophys. Res. Comm. 2005; 331:859-67.

Wolf BB and Green DR. Suicidal tendencies: apoptotic cell death by caspase family proteinases. J. Biol. Chem. 1999; 274:20049-52.
Muzio M, Chinnaiyan AM, Kischkel FC, et al. FLICE, a novel FADD-homologous ICE/CED-3-like protease, is recruited to the CD95 (Fas/APO-1) death-inducing signaling complex. Cell 1996; 85:817-27.

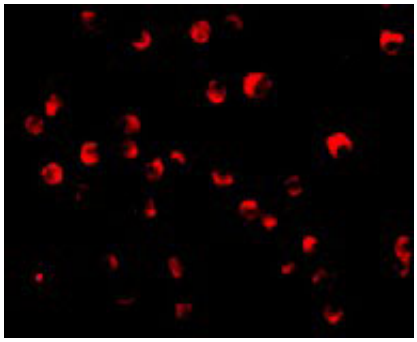
Images



Western blot analysis of caspase-8 in Jurkat cell lysate with caspase-8 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunocytochemistry of caspase-8 in Jurkat cells with caspase-8 antibody at 2 µg/mL.



Immunofluorescence of Caspase-8 in Jurkat cells with Caspase-8 antibody at 20 µg/mL.

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