

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human cleaved Caspase-8 in ELISA.
Source	Monoclonal Mouse IgG ₁ Clone # 746109
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	KLH-coupled Caspase-8 synthetic peptide CGIPVETD Accession # Q14790
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

Immunocytochemistry Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Caspase-8 (Cysteine-aspartic acid protease 8/Casp8a; also named MCH5, FLICA and MACHa1) is a 28 kDa member of the peptidase C14A family of enzymes (1, 2, 3). It is widely expressed and is considered an initiating caspase for the apoptotic cascade (4). Caspase-8 acts on a wide variety of substrates, including procaspases-3, 4, 6, 7, 9 and 10, c-FLIP_L and procaspase-8 itself (1, 5, 6). Human procaspase-8a is a 54-56 kDa, 479 amino acid (aa) protein (4, 7, 8, 9). It contains two N-terminal death domains (aa 1-177), followed by a catalytic site that utilizes His317Gly318 plus Cys360. Normally, it is an inactive, cytosolic monomer (1, 10, 11). But following death-domain (DD) containing receptor oligomerization, Caspase-8 is recruited to the death-inducing signaling complex (DISC) that forms around the death domains of the oligomerized receptor (12). FADD/CAP-1 is recruited first, followed by procaspase-8/CAP-4 and, possibly, c-FLIP_L and procaspase-10 (12). The recruitment, or concentration, of procaspase-8 induces homodimerization. This act alone is sufficient for activation. However, the activity level is modest at best, and appears to be directed towards either itself, or c-FLIP_L, which is known to form a functional heterodimer with procaspase-8 (5, 11). When directed towards itself, autocleavage occurs first between Asp374Ser375, generating a 43 kDa (p43) N-terminal (aa 1-374) and an 11 kDa C-terminal (aa 375-479) fragment. The C-terminus is further cleaved between Asp384Leu385 to generate a mature p10 subunit (aa 385-479). The p43 subunit is next cleaved twice, once between Asp216Ser217, and again between Asp210Ser211 to generate a 26 kDa DD-containing prodomain (aa 1-210) with an additional 18 kDa mature p18 subunit (aa 217-374) (12). p18 and p10 noncovalently associate to form a 28 kDa heterodimer, which subsequently associates with another p18:p10 heterodimer to form an active, mature Caspase-8 molecule. This leaves the DISC to act on downstream apoptotic procaspases. In the event procaspase-8 comes to the DISC complexed with c-FLIP_L, c-FLIP_L will be cleaved by procaspase-8, generating a p43 fragment that is analogous to the Caspase-8 p43 subunit. This fragment, however, appears not to be an intermediate in a proteolytic cascade. Rather, it serves as a functional subunit, interacting with TRAF2 and activating NFκB. This may account for many of the nonapoptotic activities associated with Caspase-8 (5, 6, 13). Mature human and mouse Caspase-8a heterodimers are 73% aa identical (14).

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