Human/Mouse Caspase-7 Antibody

Monoclonal Mouse IgG_1 Clone # MCH3101.62

Catalog Number: MAB823

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse precursor Caspase-7 and the large subunit of cleaved Caspase-7.
Source	Monoclonal Mouse IgG_1 Clone # MCH3101.62
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human Caspase-7 Accession # P55210
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

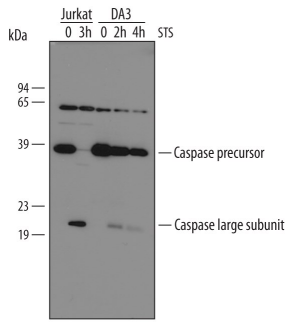
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	See Below
Knockout Validated	Caspase-7 is specifically detected in A549 human lung carcinoma cell line parental cell line but is not detectable in Caspase-7 knockout A549 cell line.	

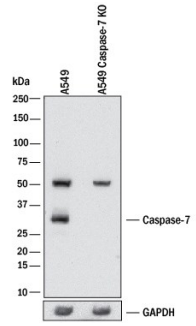
DATA

Western Blot



Detection of Human and Mouse Caspase-7 Precursor and Large Subunit by Western Blot. Western blot shows lysates of Jurkat human acute T cell leukemia cell line and DA3 mouse myeloma cell line untreated (-) or treated (+) with 1 µM staurosporine (STS) for the indicated times. PVDF membrane was probed with 0.5 µg/mL of Human/Mouse Caspase-7 Monoclonal Antibody (Catalog # MAB823), followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Specific bands were detected for Caspase-7 precursor and large subunit at approximately 38 and 20 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 4.

Knockout Validated



Western Blot Shows Human Caspase-7 Specificity by Using Knockout Cell Line. Western blot shows lysates of A549 human lung carcinoma parental cell line and Caspase-7 knockout A549 cell line (KO). PVDF membrane was probed with 0.5 µg/mL of Mouse Anti-Human/Mouse Caspase-7 Monoclonal Antibody (Catalog # MAB823) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for Caspase-7 at approximately 32 kDa (as indicated) in the parental A549 cell line, but is not detectable in knockout A549 cell line. GAPDH (Catalog # MAB5718) is shown as a loading control. This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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Human/Mouse Caspase-7 Antibody

Monoclonal Mouse IgG_1 Clone # MCH3101.62

Catalog Number: MAB823

BACKGROUND

Caspase-7 (**C**ysteine-**asp**artic acid prote**ase** 7/Casp7; also CMH-1, ICE-LAP3 and Mch3) is a 32 kDa member of the peptidase C14A/IL-1β-converting family of enzymes (1, 2, 3). It is widely expressed, except in brain, and is best known as an integral component of the apoptotic cascade. Caspase-7 is considered to be an executioner caspase, as a downstream mediator of apoptotic-associated proteolysis (2, 3). Upon activation, Caspase-7 is known to utilize a Cys residue to cleave multiple substrates, including PARP, procaspase 6, Gas2 and calpstatin (1). Human procaspase-7 is a 34 - 36 kDa, 303 amino acid (aa) protein (4, 5, 6). Normally, it is an inactive homodimer (1, 2, 7, 8). But following an upstream signal that activates processing proteases, procaspase-7 undergoes proteolytic cleavage to generate an N-terminal 23 aa propeptide, a 175 aa p20/20 kDa subunit (aa 24 - 198), and a 105 aa C-terminal p12/12 kDa subunit (5). The p20 and p12 subunits noncovalently heterodimerize, and subsequently associate with another p20/p12 heterodimer to form an active antiparallel homodimer. Additional processing of p20 may remove aa 24 - 36 to generate p18, while additional processing of p12 will remove aa 199 - 206 to generate p11 (9, 10). Multiple proteases can use Caspase-7 as a substrate, and include caspase-1, -3, -8, and -10, granzyme B, calpain-1 and Caspase-7 itself (3, 6, 9, 11). Caspase-7 is found in both cytosol and nucleus, and possesses a potential KKKK nuclear localization signal between aa 38 - 41 that likely undergoes sumoylation (9, 12). There are two potential isoform variants, one which shows an alternate start site 33 aa upstream of the standard start site, and a second that shows a 105 aa substitution for aa 149 - 303. Human and mouse Caspase-7 are 82% aa identical at the amino acid level.

References:

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