

#### DESCRIPTION

|                                                                                                                                                                                                         |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human/Mouse                                                                             |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human and mouse precursor Caspase-7 and the large subunit of cleaved Caspase-7. |
| <b>Source</b>                                                                                                                                                                                           | Monoclonal Mouse IgG <sub>1</sub> Clone # MCH3101.62                                    |
| <b>Purification</b>                                                                                                                                                                                     | Protein A or G purified from hybridoma culture supernatant                              |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant human Caspase-7<br>Accession # P55210               |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 647<br>Excitation Wavelength: 650 nm<br>Emission Wavelength: 668 nm         |
| <b>Formulation</b>                                                                                                                                                                                      | 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.

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| <b>Knockout Validated</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>       | Optimal dilution of this antibody should be experimentally determined. |

#### PREPARATION AND STORAGE

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

#### BACKGROUND

Caspase-7 (Cysteine-aspartic acid protease 7/Casp7; also CMH-1, ICE-LAP3 and Mch3) is a 32 kDa member of the peptidase C14A/IL-1 $\beta$ -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 calpastatin (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.

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