Human/Mouse Caspase-2 Antibody

Antigen Affinity-purified Polyclonal Rabbit IgG

Catalog Number: AF826

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse Caspase-2 precursor and the small Caspase-2 subunit that is generated during proteolytic activation in Western blots.
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	KLH-coupled mouse Caspase-2 synthetic peptide KEREGYAPGTEFHRC
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.

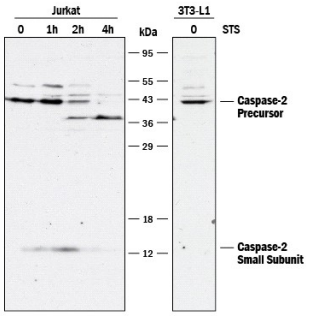
APPLICATIONS

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	0.8 µg/mL	See Below

DATA

Western Blot



Detection of Human and Mouse Caspase-2 Precursor and Small Subunit by Western Blot. Western blot shows lysates of Jurkat human acute T cell leukemia cell line treated with 1 µM staurosporine (STS) for the indicated times and NIH-3T3 mouse embryonic fibroblast cell line. PVDF membrane was probed with 0.8 µg/mL of Rabbit Anti-Human/Mouse Caspase-2 Polyclonal Antibody (Catalog # AF826), followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008). Specific bands were detected for Caspase-2 precursor and small subunit at approximately 43-54 kDa and 13 kDa, respectively (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 4.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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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BACKGROUND

Caspase-2 (Cysteine-aspartic acid protease 2/Casp2; also NEDD2 and ICH-1) is a 30-32 kDa member of the peptidase C14A/IL-1β-converting family of enzymes (1-3). It is widely expressed and is an integral component of the apoptotic cascade. Based on the length of its prodomain, Caspase-2 has been considered to be an initiator caspase. However, studies have shown that other caspases (such as Casp3) activate procaspase 2, and Caspase-2 likely acts on key cellular molecules such as BID, Golgin 160 and DFF45/ICAD (2, 4, 5). Thus, Caspase-2 is perhaps more likely to be a specialized executioner caspase. Human procaspase-2 is a 48-51 kDa, 452 amino acid (aa) protein (4-7). It is known to exist as a disulfide-linked homodimer via covalent linkage at Cys436 (2, 5). But this dimeric state may not be sufficient for (auto)activation. Actual activation may occur following oligomerization within the context of activating platforms such as DISC (death-inducing signaling complex) or the PIDDosome (8-10). Initially, procaspase-2 undergoes proteolytic cleavage to generate an N-terminal 333 aa p34/34 kDa subunit, and a 119 aa C-terminal p14/14 kDa subunit (5). The p34 and p14 subunits are further processed to generate the prodomain (aa 1-169), plus the mature p18 (aa 170-333) and p12 (aa 348-452) subunits (4-6). Notably, each p18:p12 noncovalent heterodimer demonstrates proteolytic activity around a catalytic site at aa 318-322, and, due to an nuclear localization signal within the prodomain, may be found in either nucleus or cytoplasm (11, 12). There are multiple potential isoform variants. Individually, or in combination, there is an alternative start site at Met18, a substitution of two aa for aa 107-452, a second substitution of 14 aa for aa 309-322, and a third substitution of 22 aa for aa 323-452 (6, 7, 13). The human and mouse procaspase 2 precursors are 90% aa identical, with the majority of differences lying in the prodomain.

References:

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