

Product Specification Sheet

Product: Affinity Purified anti-Caspase-2 [Rabbit]

Code: 600-401-412

Lot # 12185

Size: 100 µg

Physical State: Liquid (sterile filtered)

Antibody Concentration: 0.44 mg/ml (by UV absorbance at 280 nm)

Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

Stabilizer: None

Preservative: 0.01% (w/v) Sodium Azide

Background Information: Apoptosis occurs during normal cellular development and involves dramatic changes in cellular structure. Disruption of apoptosis may contribute to cancer and other diseases. Caspases are a family of cysteine proteases that are key mediators of programmed cell death or apoptosis. Caspase-2 has been called ICH-1 in human, CED-3 in *C.elegans* and NEDD-2 in mouse. Caspase-2 is synthesized as an inactive precursor that is processed in cells undergoing apoptosis. The precursor form of all caspases is composed of a pro-domain, and large and small catalytic subunits. The active forms of caspases are generated by several stimuli, including ligand-receptor interactions, growth factor deprivation and inhibitors of cellular functions. Caspase-2 is activated *in vitro* by caspase-1, caspase-3 and granzyme B. Caspase-2 functions as an upstream apoptosis initiator that participates in the activation of downstream caspases, such as caspase-3, caspase-6 and caspase-7. Caspase-2 is highly expressed in embryonic mouse brain but not in adult neural tissue. Alternative mRNA splicing produces a long (48 kDa) and short (35 kDa) form of caspase-2. These forms show tissue specificity and function either as inducers or suppressors of apoptosis. Mature caspase-2 is 435 amino acids in length cleaved (~50 kDa) and is cleaved upon activation into 10 and 20 kDa subunits.

Application Note(s): This affinity purified polyclonal antibody was tested by ELISA and immunoblotting and was found to be reactive with 48 kDa mouse and rat caspase-2. A control and rat caspase-2 transfected human 293 cell lysate was used to show by immunoblotting that this antibody detects rat caspase-2. No reaction was observed against human caspase-2. Immunoblot of mouse neuronal cell lysates from wild-type and caspase-2 (-/-) mice (not shown) was used to show that this antibody cross reacts with mouse caspase-2.

Recommended Dilution(s): This product was assayed against 1.0 µg of immunizing peptide in a standard sandwich ELISA using HRP conjugated Affinity Purified anti-Rabbit IgG [H&L] (Goat) code #611-1302 and TMB as a substrate for 30 minutes at room temperature. A working dilution of 1:1,500 to 1:6,000 is suggested for this product. A 1:750 dilution is recommended for immunoblot.

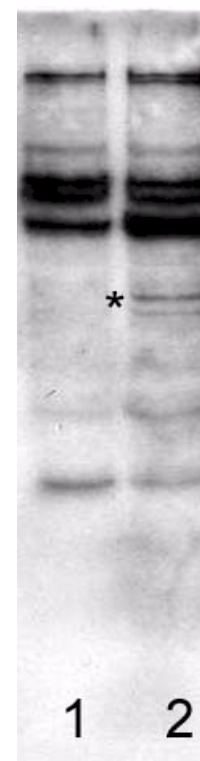


Figure. Immunoblotting. Affinity Purified antibody to Caspase-2 was used at a 1:750 dilution to detect rat caspase-2 in transfected human 292 cell lysates by Western blot. Asterisk indicates a 48 kDa caspase-2 protein clearly detected in the rat caspase-2 transfected lysate. No reaction is observed against human caspase-2. Control (lane 1) and transfected (lane 2) lysates were loaded on a 4-20% gel for SDS-PAGE. After primary antibody incubation and washing, a 1:5,000 dilution of HRP conjugated Gt-a-Rabbit IgG (611-103-122) preceded color development using Amersham's substrate system. Other

Storage Conditions: Store vial at -20° C prior to opening. Centrifuge product if not completely clear after standing at room temperature. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Expiration date is one (1) year from date of opening.

Purity and Specificity: This affinity purified antibody is directed against rat and mouse caspase-2. The antibody detects long and short forms of the protein. Antiserum was purified against the immunizing peptide. This antibody reacts with mouse and rat caspase-2, but not caspase-2 from human sources. Cross reactivity with caspase-2 from other sources has not been determined. Rat and mouse caspase-2 show 94% homology. There is no significant homology to the human form.

Immunogen: A synthetic peptide corresponding to the N-terminus of rat Caspase-2 protein conjugated to Keyhole Limpet Hemocyanin (KLH) through a cysteine residue linker.

Sequence information: M-A-A-S-S-G-R-S-Q-S-S-L-H-R-K-G-L-C-KLH

General Reference(s):

Wang, L., Miura, M., Bergeron, L., Zhu, H., Yuan, J. (1994) Ich-1, an Ice/ced-3-related gene, encodes both positive and negative regulators of programmed cell death. *Cell* **78**:739-750.

Li, H., Bergeron, L., Cryns, V., Pasternack, M.S., Zhu, H., Shi, L., Greenberg, A., Yuan, J. (1997) Activation of caspase-2 in apoptosis. *J. Biol Chem.* **272**:21010-21017.

Cohen, G.M. (1997) Caspases: the executioners of apoptosis. *Biochem. J.* **326**:1-16.

Bergeron, L., Perez, G.I., Macdonald, G., Shi, L., Sun, Y., Jurisicova, A., Varmuza, S., Latham, K.E., Flaws, J.A., Salter, J.C., Hara, H., Moskowitz, M.A., Li, E., Greenberg, A., Tilly, J.L., Yuan, J. (1998) Defects in regulation of apoptosis in caspase-2-deficient mice. *Gene Dev.* **12**:1304-1314.

Related Product(s):

#200-401-222	IgG Fraction of Anti-Human Bcl-2 (RABBIT)
#100-401-218	Anti-Human Erk2 (Rabbit)
#200-401-205	IgG Fraction of Anti-Human HER3 (RABBIT)
#100-401-244	Anti-Smac/DIABLO (Rabbit)
#611-703-127	HRP Anti-Rabbit IgG [H&L] MX10 (DONKEY)
#611-132-122	IRDye800 Anti-Rabbit IgG [H&L] MX10 (GOAT)

Note: This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.