

# caspase-2 (H-145): sc-15379

## BACKGROUND

Caspase-2 (Nedd2, Ich-1) is an aspartate-specific cysteine protease that is activated in response to various apoptotic stimuli. Caspase-2 is unique among the caspases in that it has features of both upstream caspases (long prodomain) and downstream caspases (DEXD substrate specificity). Caspase-2 is highly expressed in the brain during development, and is expressed at low levels in adult tissue. Specifically, caspase-2 localizes to the mitochondria, the Golgi, the cytoplasm and the nucleus. Caspase-2 exists as two isoforms, caspase-2<sub>L</sub> and caspase-2<sub>S</sub>, which are produced by alternative splicing and differ in their N- and C-termini. Caspase-2<sub>L</sub> acts as a positive regulator of apoptosis, whereas caspase-2<sub>S</sub> functions as a negative regulator of apoptosis. Following apoptotic stimuli, the caspase-2<sub>L</sub> precursor undergoes cleavage at Asp 153 to produce a fragment (p30). The p30 fragment undergoes further cleavage to generate a fragment containing amino acids 153-308 (p18) and a fragment containing amino acids 317-435 (p13 or p14). As apoptosis progresses, the p13 (p14) fragment can undergo further processing to yield a fragment containing amino acids 331-435 (p12).

## REFERENCES

- Wang, L., et al. 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., et al. 1997. Activation of caspase-2 in apoptosis. *J. Biol. Chem.* 272: 21010-21017.
- Butt, A., et al. 1998. Dimerization and autoprocessing of the Nedd2 (caspase-2) precursor requires both the prodomain and the carboxyl-terminal regions. *J. Biol. Chem.* 273: 6763-6768.
- Mancini, M., et al. 2000. Caspase-2 is localized at the Golgi complex and cleaves golgin 160 during apoptosis. *J. Cell Biol.* 149: 603-612.
- Drain, N., et al. 2000. Identification of a caspase-2 isoform that behaves as an endogenous inhibitor of the caspase cascade. *Cancer Res.* 60: 7039-7047.
- Ito, A., et al. 2000. Isolation of Ich-1<sub>S</sub> (caspase-2<sub>S</sub>)-binding protein that partially inhibits caspase activity. *FEBS Lett.* 3: 360-364.

## CHROMOSOMAL LOCATION

Genetic locus: CASP2 (human) mapping to 7q34; Casp2 (mouse) mapping to 6 B2.1.

## SOURCE

caspase-2 (H-145) is a rabbit polyclonal antibody raised against amino acids 153-297 of caspase-2<sub>S</sub> of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

caspase-2 (H-145) is recommended for detection of caspase-2<sub>S</sub>, caspase-2<sub>L</sub>, p18 subunit and full length caspase-2 precursor of human, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with the p12 or p13 subunit.

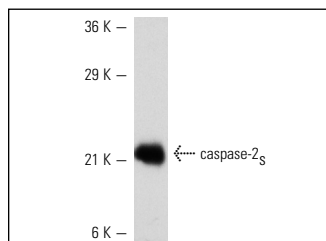
caspase-2 (H-145) is also recommended for detection of caspase-2<sub>S</sub>, caspase-2<sub>L</sub>, p18 subunit and full length caspase-2 precursor in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for caspase-2 siRNA (h): sc-29236, caspase-2 siRNA (m): sc-29925, caspase-2 siRNA (r): sc-72108, caspase-2 shRNA Plasmid (h): sc-29236-SH, caspase-2 shRNA Plasmid (m): sc-29925-SH, caspase-2 shRNA Plasmid (r): sc-72108-SH, caspase-2 shRNA (h) Lentiviral Particles: sc-29236-V, caspase-2 shRNA (m) Lentiviral Particles: sc-29925-V and caspase-2 shRNA (r) Lentiviral Particles: sc-72108-V.

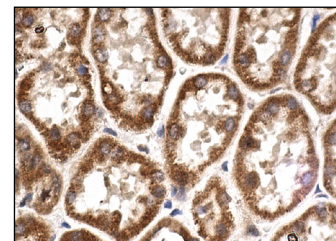
Molecular Weight of caspase-2: 51/18 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, mouse lymph node extract: sc-364243 or HeLa whole cell lysate: sc-2200.

## DATA



caspase-2<sub>S</sub> (H-145): sc-15379. Western blot analysis of human recombinant caspase-2<sub>S</sub>.



caspase-2 (H-145): sc-15379. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

## SELECT PRODUCT CITATIONS

- Jelínek, M., et al. 2013. Caspase-2 is involved in cell death induction by taxanes in breast cancer cells. *Cancer Cell Int.* 13: 42.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.