

# Calpain 9 (A-18): sc-66506

## BACKGROUND

Calpain 9 belongs to a family of 14 intracellular calcium activated cysteine proteases present in the fungi, plant and animal kingdoms. Several of these proteases have been implicated in cardiovascular diseases. On a high salt diet, Calpain 9 is downregulated by more than 50% in the heart. The differential regulation of Calpain 9 seen under such conditions may play a role in hypertensive target organ damage. The digestive tract-specific Calpain 9 is downregulated in gastric cancer cell lines, suggesting that it acts as a gastric cancer suppressor. Two known isoforms exist for Calpain 9 due to alternative splicing. The 2 isoforms vary in their amino acid sequences between amino acids 292 and 318.

## REFERENCES

1. Murachi, T. 1984. Calcium-dependent proteinases and specific inhibitors: calpain and calpastatin. *Biochem. Soc. Symp.* 45: 149-167.
2. Kawasaki, H., et al. 1996. Regulation of the calpain-calpastatin system by membranes. *Mol. Membr. Biol.* 13: 217-224.
3. Johnson, G.V., et al. 1997. Calpains: intact and active? *Bioessays* 19: 1011-1018.
4. Huang, Y., et al. 2001. The Calpain family and human disease. *Trends Mol. Med.* 7: 355-362.
5. Markmann, A., et al. 2005. Downregulation of calpain 9 is linked to hypertensive heart and kidney disease. *Cell. Physiol. Biochem.* 15: 109-116.
6. Davis, T.L., et al. 2007. The crystal structures of human calpains 1 and 9 imply diverse mechanisms of action and auto-inhibition. *J. Mol. Biol.* 366: 216-229.

## CHROMOSOMAL LOCATION

Genetic locus: CAPN9 (human) mapping to 1q42.2.

## SOURCE

Calpain 9 (A-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Calpain 9 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.

Blocking peptide available for competition studies, sc-66506 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

Calpain 9 (A-18) is recommended for detection of Calpain 9 of human 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Calpain 9 (A-18) is also recommended for detection of Calpain 9 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for Calpain 9 siRNA (h): sc-62070, Calpain 9 shRNA Plasmid (h): sc-62070-SH and Calpain 9 shRNA (h) Lentiviral Particles: sc-62070-V.

Molecular Weight of Calpain 9: 79 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Caco-2 cell lysate: sc-2262 or HISM cell lysate: sc-2229.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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



Try **Calpain 9 (G-12): sc-166517** or **Calpain 9 (E-6): sc-166750**, our highly recommended monoclonal alternatives to Calpain 9 (A-18).