



# Calpain 10 (H-50): sc-134562

## BACKGROUND

Calpains are calcium-activated thiol proteases involved in intracellular processing of proteins and signal transduction. The classic calpains are heterodimers with one large subunit, one small subunit and five EF-hand-calcium binding structures. The large subunit varies between family members and can be active without the small subunit. Calpain 5, sometimes referred to as HTRA3, belongs to the non-classical calpain subfamily that lacks the EF-hand-calcium-binding structures. Calpain 5 is ubiquitously expressed and localizes to the cytoplasm and nucleus. It is a homolog of Calpain 10. Calpain 5, in addition to Calpain 10 and Calpain 6, differ from other subfamily members by the presence of a T-domain that is homologous to the *Caenorhabditis elegans* protein Tra-3. Calpain 5, the human ortholog of this nematode protein, may play a role in sex determination.

## REFERENCES

1. Dear, T.N., Meier, N.T., Hunn, M. and Boehm, T. 2000. Gene structure, chromosomal localization, and expression pattern of Capn12, a new member of the calpain large subunit gene family. *Genomics* 68: 152-160.
2. Dear, T.N. and Boehm, T. 2000. Diverse mRNA expression patterns of the mouse calpain genes Capn5, Capn6 and Capn11 during development. *Mech. Dev.* 89: 201-209.
3. Franz, T., Winckler, L., Boehm, T. and Dear, T.N. 2004. Capn5 is expressed in a subset of T cells and is dispensable for development. *Mol. Cell. Biol.* 24: 1649-1654.
4. Gafni, J., Hermel, E., Young, J.E., Wellington, C.L., Hayden, M.R. and Ellerby, L.M. 2004. Inhibition of calpain cleavage of Huntingtin reduces toxicity: accumulation of calpain/caspase fragments in the nucleus. *J. Biol. Chem.* 279: 20211-20220.
5. Waghray, A., Wang, D.S., McKinsey, D., Hayes, R.L. and Wang, K.K. 2004. Molecular cloning and characterization of rat and human Calpain 5. *Biochem. Biophys. Res. Commun.* 324: 46-51.
6. Fan, C., Iacobas, D.A., Zhou, D., Chen, Q., Lai, J.K., Gavrialov, O. and Haddad, G.G. 2005. Gene expression and phenotypic characterization of mouse heart after chronic constant or intermittent hypoxia. *Physiol. Genomics* 22: 292-307.

## CHROMOSOMAL LOCATION

Genetic locus: CAPN10 (human) mapping to 2q37.3; Capn10 (mouse) mapping to 1 D.

## SOURCE

Calpain 10 (H-50) is a rabbit polyclonal antibody raised against amino acids 1-50 mapping at the N-terminus of Calpain 10 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

Calpain 10 (H-50) is recommended for detection of Calpain 10 isoforms A, B, C, D, E, F, G and H of mouse, rat and 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).

Suitable for use as control antibody for Calpain 10 siRNA (h): sc-60318, Calpain 10 siRNA (m): sc-60319, Calpain 10 shRNA Plasmid (h): sc-60318-SH, Calpain 10 shRNA Plasmid (m): sc-60319-SH, Calpain 10 shRNA (h) Lentiviral Particles: sc-60318-V and Calpain 10 shRNA (m) Lentiviral Particles: sc-60319-V.

Molecular Weight of Calpain 10: 74.5 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.