

Calpain 7 (F-10): sc-515534

BACKGROUND

Calpains are calcium-activated thiol proteases. Calpain 7 (also known as PalBH) is a member of the non-EF-hand subfamily of Calpains and may be calcium independent. Calpain 7 has 813 amino acid residues and is a divergent member of the Calpain family. It has only 26-35% shared identity to other members and most of this homology is in the protease domain. Calpain 7 seems to be related to PalB, an *Aspergillus nidulans* protease that is involved in alkaline ambient pH adaptation. A long N-terminal domain (N) and a PalB homologous domain (PBH) flank the Calpain protease domain of Calpain 7. Calpain 7 appears to have a ubiquitous tissue distribution but is highly expressed in the brain. It localizes to the cytoplasm and the nucleus, but its activated form is found only in the nucleus. Calpain 7 is an atypical Calpain that lacks domain IV and cannot form a dimer with the 30 kDa regulatory subunit. Upregulation of Calpain 7 in striatal or cortical tissue of Huntington's disease knock-in mice suggests that this protein may be involved in the onset of the disease.

REFERENCES

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2. Takano, E., et al. 1993. Molecular diversity of calpastatin in human erythroid cells. *Arch. Biochem. Biophys.* 303: 349-354.
3. Kawasaki, H., et al. 1996. Regulation of the Calpain-calpastatin system by membranes (review). *Mol. Membr. Biol.* 13: 217-224.
4. Johnson, G.V., et al. 1997. Calpains: intact and active? *Bioessays* 19: 1011-1018.
5. Elce, J.S., et al. 1997. Autolysis, Ca²⁺ requirement, and heterodimer stability in m-Calpain. *J. Biol. Chem.* 272: 11268-11275.
6. Dear, T.N., et al. 1999. Diverse mRNA expression patterns of the mouse Calpain genes Capn5, Capn6 and Capn11 during development. *Mech. Dev.* 89: 201-209.
7. Huang, Y., et al. 2001. The Calpain family and human disease. *Trends Mol. Med.* 7: 355-362.
8. Gafni, J., et al. 2004. Inhibition of Calpain cleavage of huntingtin reduces toxicity: accumulation of Calpain/Caspase fragments in the nucleus. *J. Biol. Chem.* 279: 20211-20220.

CHROMOSOMAL LOCATION

Genetic locus: CAPN7 (human) mapping to 3p25.1; Capn7 (mouse) mapping to 14 B.

SOURCE

Calpain 7 (F-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 381-406 within an internal region of Calpain 7 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515534 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Calpain 7 (F-10) is recommended for detection of Calpain 7 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 7 siRNA (h): sc-62068, Calpain 7 siRNA (m): sc-62069, Calpain 7 shRNA Plasmid (h): sc-62068-SH, Calpain 7 shRNA Plasmid (m): sc-62069-SH, Calpain 7 shRNA (h) Lentiviral Particles: sc-62068-V and Calpain 7 shRNA (m) Lentiviral Particles: sc-62069-V.

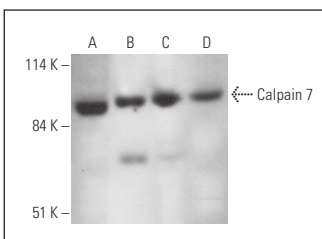
Molecular Weight of Calpain 7: 93 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or human heart extract: sc-363763.

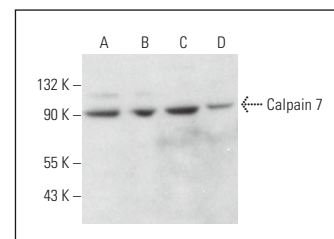
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Calpain 7 (F-10): sc-515534. Western blot analysis of Calpain 7 expression in Jurkat (A), MCF7 (B) and DU 145 (C) whole cell lysates and human heart tissue extract (D).



Calpain 7 (F-10): sc-515534. Western blot analysis of Calpain 7 expression in MDA-MB-231 (A), PC-3 (B), ALL-SIL (C) and AT3B-1 (D) whole cell lysates.

RESEARCH USE

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