

Calpain 7 (D-2): sc-137156

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

1. Takano, E., et al. 1991. Molecular diversity of erythrocyte calpastatin. *Biomed. Biochim. Acta* 50: 517-521.
2. Takano, E., et al. 1993. Molecular diversity of calpastatin in human erythroid cells. *Arch. Biochem. Biophys.* 303: 349-354.
3. Johnson, G.V., et al. 1997. Calpains: intact and active? *Bioessays* 19: 1011-1018.
4. Elce, J.S., et al. 1997. Autolysis, Ca²⁺ requirement, and heterodimer stability in μ -Calpain. *J. Biol. Chem.* 272: 11268-11275.
5. Kawasaki, H., et al. 1997. Regulation of the Calpain-calpastatin system by membranes (review). *Mol. Membr. Biol.* 13: 217-224.

CHROMOSOMAL LOCATION

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

SOURCE

Calpain 7 (D-2) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Calpain 7 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

Calpain 7 (D-2) is available conjugated to agarose (sc-137156 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137156 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137156 PE), fluorescein (sc-137156 FITC), Alexa Fluor[®] 488 (sc-137156 AF488), Alexa Fluor[®] 546 (sc-137156 AF546), Alexa Fluor[®] 594 (sc-137156 AF594) or Alexa Fluor[®] 647 (sc-137156 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-137156 AF680) or Alexa Fluor[®] 790 (sc-137156 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Calpain 7 (D-2) 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 μ g per 100-500 μ g 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.

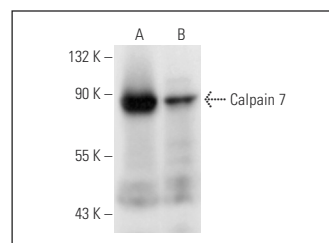
Molecular Weight of Calpain 7: 93 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, DU 145 nuclear extract: sc-24960 or MCF7 whole cell lysate: sc-2206.

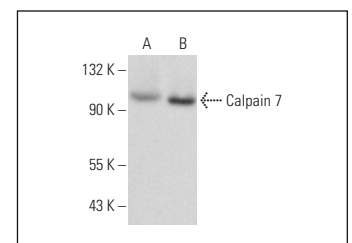
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 (D-2): sc-137156. Western blot analysis of Calpain 7 expression in HeLa whole cell lysate (A) and DU 145 nuclear extract (B).



Calpain 7 (D-2): sc-137156. Western blot analysis of Calpain 7 expression in IMR-32 nuclear extract (A) and MCF7 whole cell lysate (B).

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.