SANTA CRUZ BIOTECHNOLOGY, INC.

Calpain 2 (F-11): sc-373967

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Calpain, an intracellular calcium-dependent protease that cleaves cytoskeletal and submembranous proteins, is thought to play a role in cytoskeletal reorganization and muscle protein degradation. Calpain exists as a heterodimer composed of a small regulatory subunit and one of three large catalytic subunits, designated Calpain 1, Calpain 2 and Calpain p94. Calpastatin regulates calpain by inhibiting both the proteolytic activity of calpain and its binding to membranes. Calpastatin exists in two types, tissue type and erythrocyte type, resulting from both alternative splicing and proteolytic processing.

REFERENCES

1. Murachi, T. 1984. Calcium-dependent proteinases and specific inhibitors: Calpain and Calpastatin. Biochem. Soc. Symp. 49: 149-167.
2. Takano, E., et al. 1991. Molecular diversity of erythrocyte Calpastatin. Biomed. Biochim. Acta 50: 517-521.
3. Takano, E., et al. 1993. Molecular diversity of Calpastatin in human erythroid cells. Arch. Biochem. Biophys. 303: 349-354.
4. Johnson, G.V., et al. 1997. Calpains: intact and active? Bioessays 19: 1011-1018.

CHROMOSOMAL LOCATION

Genetic locus: CAPN2 (human) mapping to 1q41; Capn2 (mouse) mapping to 1 H5.

SOURCE

Calpain 2 (F-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of Calpain 2 of human origin.

PRODUCT

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

Calpain 2 (F-11) is available conjugated to agarose (sc-373967 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373967 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373967 PE), fluorescein (sc-373967 FITC), Alexa Fluor® 488 (sc-373967 AF488), Alexa Fluor® 546 (sc-373967 AF546), Alexa Fluor® 594 (sc-373967 AF594) or Alexa Fluor® 647 (sc-373967 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373967 AF680) or Alexa Fluor® 790 (sc-373967 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373967 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Calpain 2 (F-11) is recommended for detection of Calpain 2 precursor 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), 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).

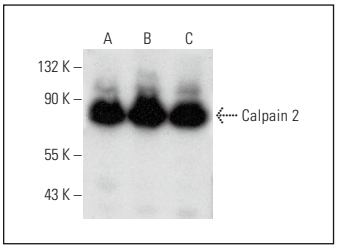
Calpain 2 (F-11) is also recommended for detection of Calpain 2 precursor in additional species, including bovine and porcine.

Suitable for use as control antibody for Calpain 2 siRNA (h): sc-41459, Calpain 2 siRNA (m): sc-41460, Calpain 2 siRNA (r): sc-60100, Calpain 2 shRNA Plasmid (h): sc-41459-SH, Calpain 2 shRNA Plasmid (m): sc-41460-SH, Calpain 2 shRNA Plasmid (r): sc-60100-SH, Calpain 2 shRNA (h) Lentiviral Particles: sc-41459-V, Calpain 2 shRNA (m) Lentiviral Particles: sc-41460-V and Calpain 2 shRNA (r) Lentiviral Particles: sc-60100-V.

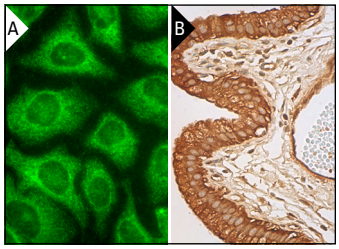
Molecular Weight of Calpain 2 large regulatory subunit: 80 kDa.

Positive Controls: TF-1 cell lysate: sc-2412, K-562 whole cell lysate: sc-2203 or NIH/3T3 whole cell lysate: sc-2210.

DATA



Calpain 2 (F-11): sc-373967. Western blot analysis of Calpain 2 expression in TF-1 (**A**), K-562 (**B**) and NIH/3T3 (**C**) whole cell lysates.



Calpain 2 (F-11): sc-373967. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Tang, Y., et al. 2014. Time-specific microRNA changes during spinal motoneuron degeneration in adult rats following unilateral brachial plexus root avulsion: ipsilateral vs. contralateral changes. BMC Neurosci. 15: 92.
2. Di, Y., et al. 2020. Ursolic acid protects against cisplatin-induced ototoxicity by inhibiting oxidative stress and TRPV1-mediated Ca^{2+}-signaling. Int. J. Mol. Med. 46: 806-816.
3. Rasl, J., et al. 2024. Depletion of Calpain 2 accelerates epithelial barrier establishment and reduces growth factor-induced cell scattering. Cell. Signal. 121: 111295.

RESEARCH USE

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