SANTA CRUZ BIOTECHNOLOGY, INC.

Calpain reg (5B9): sc-32785

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Calpain 1 is an intracellular calcium-dependent protease that cleaves cytoskeletal and submembranous proteins. Calpains are nonlysosomal, calcium-activated intracellular cysteine proteases. Calpains mediate specific Ca^{2+}-dependent processes including cell fusion, mitosis and meiosis. Calpains are heterodimers 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. Calpain-1 co-localizes with human leukocyte antigen-DR (HLA-DR) on activated microglia in the aging brain. Calpain influences the process of spermatogenesis and in the events preceding fertilization, such as the acrosome reaction.

REFERENCES

1. Murachi, T. 1984. Calcium-dependent proteinases and specific inhibitors: Calpain and Calpastatin. Biochem. Soc. Symp. 45: 149-167.
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5. Elce, J.S., et al. 1997. Autolysis, Ca^{2+} requirement, and heterodimer stability in μ-calpain. J. Biol. Chem. 272: 11268-11275.
6. Kawasaki, H. and Kawashima, S. 1997. Regulation of the Calpain-Calpastatin system by membranes (review). Mol. Membr. Biol. 13: 217-224.
7. Barta, J., et al. 2003. Calpain-1-dependent degradation of troponin I mutants found in familial hypertrophic cardiomyopathy. Mol. Cell. Biochem. 251: 83-88.
8. Altznauer, F., et al. 2004. Calpain-1 regulates Bax and subsequent Smac-dependent Caspase-3 activation in neutrophil apoptosis. J. Biol. Chem. 279: 5947-5957.
9. Ben-Aharon, I., et al. 2005. The expression of Calpain 1 and Calpain 2 in spermatogenic cells and spermatozoa of the mouse. Reproduction 129: 435-442.

CHROMOSOMAL LOCATION

Genetic locus: CAPNS1 (human) mapping to 19q13.12; Capns1 (mouse) mapping to 7 B1.

SOURCE

Calpain reg (5B9) is a mouse monoclonal antibody raised against amino acids 92-104 of the regulatory subunit of Calpain 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.

APPLICATIONS

Calpain reg (5B9) is recommended for detection of calpain regulatory subunit of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Calpain reg siRNA (h): sc-29887, Calpain reg siRNA (m): sc-29888, Calpain reg shRNA Plasmid (h): sc-29887-SH, Calpain reg shRNA Plasmid (m): sc-29888-SH, Calpain reg shRNA (h) Lentiviral Particles: sc-29887-V and Calpain reg shRNA (m) Lentiviral Particles: sc-29888-V.

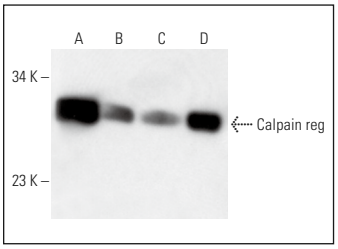
Molecular Weight of Calpain reg: 30 kDa.

Positive Controls: TF-1 cell lysate: sc-2412, A-431 whole cell lysate: sc-2201 or K-562 whole cell lysate: sc-2203.

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).

DATA



Calpain reg (5B9): sc-32785. Western blot analysis of Calpain reg expression purified from human erythrocyte extract (**A**) and in TF-1 (**B**), K-562 (**C**) and A-431 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cui, W., et al. 2015. Hypoxia induces Calpain activity and degrades SMAD2 to attenuate TGFβ signaling in macrophages. Cell Biosci. 5: 36.

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.