SANTA CRUZ BIOTECHNOLOGY, INC.

Calpain 1/2 (28F3): sc-58326

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 (100-120 kDa) and erythrocyte type (70 kDa), 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. and Guttmann, R.P. 1997. Calpains: intact and active? Bioessays 19: 1011-1018.
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., et al. 1997. Regulation of the calpain-calpastatin system by membranes (review). Mol. Membr. Biol. 13: 217-224.

CHROMOSOMAL LOCATION

Genetic locus: CAPN1 (human) mapping to 11q13.1, CAPN2 (human) mapping to 1q41.

SOURCE

Calpain 1/2 (28F3) is a mouse monoclonal antibody raised against full length Calpain 2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 1% glycerol.

APPLICATIONS

Calpain 1/2 (28F3) is recommended for detection of native and denatured 28 to 30 kDa small subunit of Calpain 1 and Calpain 2 (μ-Calpain and m-Calpain) of human and bovine 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

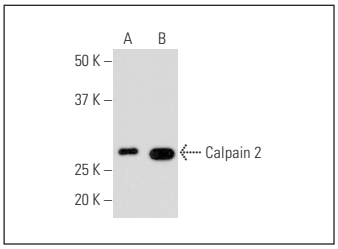
Molecular Weight of Calpain 1/2 small subunit: 28-30 kDa.

Positive Controls: Madin-Darby bovine kidney whole cell lysate or normal human fibroblasts whole cell lysate.

STORAGE

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

DATA



Calpain 2 (28F3): sc-58326. Western blot analysis of Calpain 2 expression in normal human fibroblast (**A**) and Madin-Darby bovine kidney (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, T.M., et al. 2011. The novel benzimidazole derivative, MPTB, induces cell apoptosis in human chondrosarcoma cells. Mol. Carcinog. 50: 791-803.
2. Elali, A. and Hermann, D.M. 2012. Liver X receptor activation enhances blood-brain barrier integrity in the ischemic brain and increases the abundance of ATP-binding cassette transporters ABCB1 and ABCC1 on brain capillary cells. Brain Pathol. 22: 175-187.
3. Proietti, S., et al. 2018. Increase in motility and invasiveness of MCF7 cancer cells induced by nicotine is abolished by melatonin through inhibition of ERK phosphorylation. J. Pineal Res. 64: e12467.

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.

CONJUGATES

See **Calpain 1 (D-11): sc-271313** for Calpain 1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.