SANTA CRUZ BIOTECHNOLOGY, INC.

Calpain (H-240): sc-30064

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 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.
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.

SOURCE

Calpain (H-240) is a rabbit polyclonal antibody raised against amino acids 61-299 mapping near the N-terminus of Calpain 2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Calpain (H-240) is recommended for detection of Calpain 1, 2, 3, 8, 9 and 11 of mouse, rat and human 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)], 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).

Calpain (H-240) is also recommended for detection of Calpain 1, 2, 3, 8, 9 and 11 in additional species, including bovine, porcine and avian.

Molecular Weight of Calpain: 80/28/94 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, TF-1 cell lysate: sc-2412 or K-562 whole cell lysate: sc-2203.

RESEARCH USE

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

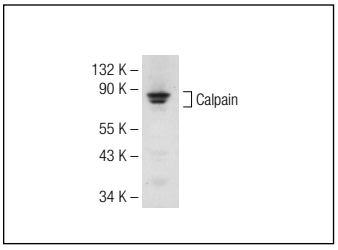
PROTOCOLS

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

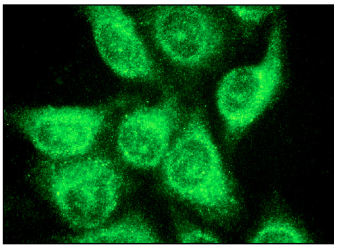
STORAGE

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

DATA



Calpain (H-240): sc-30064. Western blot analysis of Calpain expression in HeLa whole cell lysate.



Calpain (H-240): sc-30064. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Simoneau, M., et al. 2008. Activation of Cdk2 stimulates proteasome-dependent truncation of tyrosine phosphatase SHP-1 in human proliferating intestinal epithelial cells. J. Biol. Chem. 283: 25544-25556.
2. Tsai, J.Y., et al. 2010. EGb761 ameliorates the formation of foam cells by regulating the expression of SR-A and ABCA1: role of haem oxygenase-1. Cardiovasc. Res. 88: 415-423.
3. Suwanjang, W., et al. 2010. The protective effect of melatonin on methamphetamine-induced calpain-dependent death pathway in human neuroblastoma SH-SY5Y cultured cells. J. Pineal Res. 48: 94-101.
4. Wu, Z.Z., et al. 2010. Knockdown of NAPA using short-hairpin RNA sensitizes cancer cells to cisplatin: implications to overcome chemoresistance. Biochem. Pharmacol. 80: 827-837.
5. Jung, E.J. and Kim, D.R. 2011. Ectopic expression of H2AX protein promotes TrkA-induced cell death via modulation of TrkA tyrosine-490 phosphorylation and JNK activity upon DNA damage. Biochem. Biophys. Res. Commun. 404: 841-847.
6. Formisano, L., et al. 2011. The repressor element 1-silencing transcription factor is a novel molecular target for the neurotoxic effect of the polychlorinated biphenyl mixture aroclor 1254 in neuroblastoma SH-SY5Y cells. J. Pharmacol. Exp. Ther. 338: 997-1003.
7. Beltran, L., et al. 2011. Calpain interacts with class IA phosphoinositide 3-kinases regulating their stability and signaling activity. Proc. Natl. Acad. Sci. USA 108: 16217-16222.