SANTA CRUZ BIOTECHNOLOGY, INC.

Calpain 1 (N-19): sc-7531

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Calpain 1, also designated μ-calpain, is an intracellular calcium-dependent protease that cleaves cyto-skeletal 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.

CHROMOSOMAL LOCATION

Genetic locus: CAPN1 (human) mapping to 11q13.1; Capn1 (mouse) mapping to 19 A.

SOURCE

Calpain 1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Calpain 1 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.

Calpain 1 (N-19) is available conjugated to agarose (sc-7531 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-7531 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Calpain 1 (N-19) is recommended for detection of Calpain 1 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), 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 1 (N-19) is also recommended for detection of Calpain 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Calpain 1 siRNA (h): sc-29885, Calpain 1 siRNA (m): sc-29886, Calpain 1 shRNA Plasmid (h): sc-29885-SH, Calpain 1 shRNA Plasmid (m): sc-29886-SH, Calpain 1 shRNA (h) Lentiviral Particles: sc-29885-V and Calpain 1 shRNA (m) Lentiviral Particles: sc-29886-V.

Molecular Weight of Calpain 1 large subunit: 80 kDa.

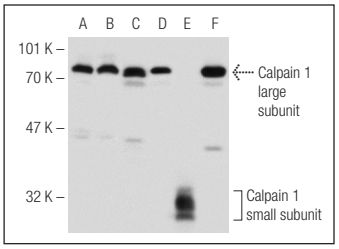
Molecular Weight of Calpain 1 small subunit: 30 kDa.

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

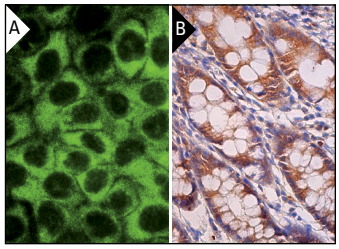
STORAGE

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

DATA



Calpain 1 (N-19)-R: sc-7531-R. Western blot analysis of Calpain 1 expression in TF-1 (**A**), K-562 (**B**), AH31 (**C**), HeLa (**D**), human PBL (**E**) and SCC-4 (**F**) whole cell lysates.



Calpain 1 (N-19): sc-7531. Immunofluorescence staining of methanol-fixed A-431 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Yoo, B.C., et al. 2001. p25 protein in neurodegeneration. Nature 411: 763-764.
2. Hill, J.W., et al. 2008. OGG1 is degraded by calpain following oxidative stress and cisplatin exposure. DNA Repair 7: 648-654.
3. Li, Z., et al. 2008. Endoplasmic reticulum stress is involved in myocardial apoptosis of streptozocin-induced diabetic rats. J. Endocrinol. 196: 565-572.
4. Cowan, C.M., et al. 2008. Polyglutamine-modulated striatal calpain activity in YAC transgenic huntington disease mouse model: impact on NMDA receptor function and toxicity. J. Neurosci. 28: 12725-12735.
5. Liu, S.H., et al. 2010. IL-13 downregulates PPAR-γ/heme oxygenase-1 via ER stress-stimulated calpain activation: aggravation of activated microglia death. Cell. Mol. Life Sci. 67: 1465-1476.
6. Hsu, C.Y., et al. 2011. Deimination of human filaggrin-2 promotes its proteolysis by calpain 1. J. Biol. Chem. 286: 23222-23233.
7. Santos, D.M., et al. 2012. Distinct regulatory functions of calpain 1 and 2 during neural stem cell self-renewal and differentiation. PLoS ONE 7: e33468.
8. Sigurosson, H.H., et al. 2015. Constitutively active ErbB2 regulates cisplatin-induced cell death in breast cancer cells via pro- and antiapoptotic mechanisms. Mol. Cancer Res. 13: 63-77.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **Calpain 1 (D-11): sc-271313** or **Calpain 1 (P-6): sc-81171**, our highly recommended monoclonal alternatives to Calpain 1 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Calpain 1 (D-11): sc-271313**.