

Calpain 1 (6C-12): sc-32327

BACKGROUND

Calpain 1, also designated μ -calpain, 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.

CHROMOSOMAL LOCATION

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

SOURCE

Calpain 1 (6C-12) is a mouse monoclonal antibody raised against Calpain 1 large (catalytic) subunit complexed to the small regulatory subunit from erythrocytes of human origin.

PRODUCT

Each vial contains 200 μg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Calpain 1 (6C-12) 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Calpain 1 siRNA (h): sc-29885, Calpain 1 siRNA (m): sc-29886, Calpain 1 siRNA (r): sc-60099, Calpain 1 shRNA Plasmid (h): sc-29885-SH, Calpain 1 shRNA Plasmid (m): sc-29886-SH, Calpain 1 shRNA Plasmid (r): sc-60099-SH, Calpain 1 shRNA (h) Lentiviral Particles: sc-29885-V, Calpain 1 shRNA (m) Lentiviral Particles: sc-29886-V and Calpain 1 shRNA (r) Lentiviral Particles: sc-60099-V.

Molecular Weight of Calpain 1 small subunit: 30 kDa.

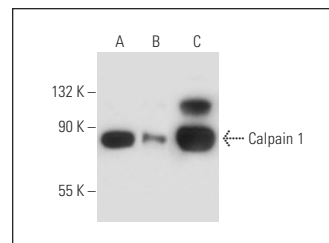
Molecular Weight of Calpain 1 large subunit: 80 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, TF-1 cell lysate: sc-2412 or K-562 whole cell lysate: sc-2203.

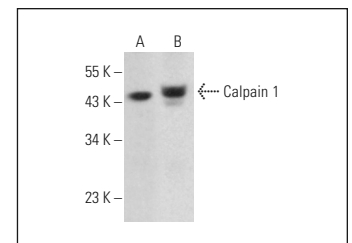
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Calpain 1 (6C-12): sc-32327. Western blot analysis of Calpain 1 expression in human PBL (A), TF-1 (B) and K-562 (C) whole cell lysates.



Calpain 1 (6C-12): sc-32327. Western blot analysis of Calpain 1 expression in K-562 (A) and KNRK (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Li, T.M., et al. 2011. The novel benzimidazole derivative, MPTB, induces cell apoptosis in human chondrosarcoma cells. *Mol. Carcinog.* 50: 791-803.
- Lee, J., et al. 2019. HAP1 loss confers L-asparaginase resistance in ALL by downregulating the Calpain-1-BID-caspase-3/12 pathway. *Blood* 133: 2222-2232.
- Serralha, R.S., et al. 2020. Esculin reduces P2X7 and reverses mitochondrial dysfunction in the renal cortex of diabetic rats. *Life Sci.* 254: 117787.
- Lee, J., et al. 2021. D,L-methadone causes leukemic cell apoptosis via an OPRM1-triggered increase in IP3R-mediated ER Ca^{2+} release and decrease in Ca^{2+} efflux, elevating $[\text{Ca}^{2+}]_i$. *Sci. Rep.* 11: 1009.

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.



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.