

# Calpain 1 (C-20): sc-7530

## BACKGROUND

Calpain 1, also designated  $\mu$ -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  $\text{Ca}^{2+}$ -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 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Calpain 1 of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7530 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Calpain 1 (C-20) is recommended for detection of Calpain 1 catalytic subunit of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  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 1 (C-20) is also recommended for detection of Calpain 1 catalytic subunit 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 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 large subunit: 80 kDa.

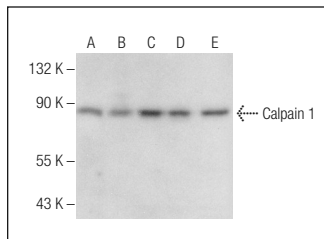
Molecular Weight of Calpain 1 small subunit: 30 kDa.

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

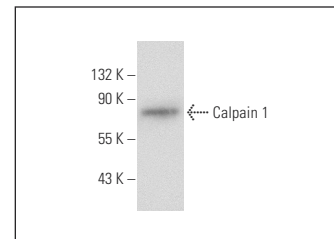
## STORAGE

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

## DATA



Calpain 1 (C-20): sc-7530. Western blot analysis of Calpain 1 expression in TF-1 (A), K-562 (B), A-431 (C), T-47D (D) and PC-3 (E) whole cell lysates.



Calpain 1 (C-20): sc-7530. Western blot analysis of Calpain 1 expression in human PBL whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Bell, J.A., et al. 1990. Postmyelographic abducent nerve palsy in association with the contrast agent iopamidol. *J. Clin. Neuroophthalmol.* 10: 115-117.
2. Taveau, M., et al. 2003. Calpain 3 is activated through autolysis within the active site and lyses sarcomeric and sarcolemmal components. *Mol. Cell. Biol.* 23: 9127-9135.
3. Singh, R.B., et al. 2004. The sarcoplasmic reticulum proteins are targets for Calpain action in the ischemic-reperfused heart. *J. Mol. Cell. Cardiol.* 37: 101-110.
4. Chien, C.M., et al. 2008. Involvement of both endoplasmic reticulum- and mitochondria-dependent pathways in cardiotoxin III-induced apoptosis in HL-60 cells. *Clin. Exp. Pharmacol. Physiol.* 35: 1059-1064.
5. Yang, S.H., et al. 2008. Cardiotoxin III-induced apoptosis is mediated by  $\text{Ca}^{2+}$ -dependent caspase-12 activation in K-562 cells. *J. Biochem. Mol. Toxicol.* 22: 209-218.
6. Selimovic, D., et al. 2011. Apoptosis related protein-1 triggers melanoma cell death via interaction with the juxtamembrane region of p75 neurotrophin receptor. *J. Cell. Mol. Med.* 16: 349-361.
7. Selimovic, D., et al. 2011. Apoptosis related protein-2 triggers melanoma cell death by a mechanism including both endoplasmic reticulum stress and mitochondrial dysregulation. *Carcinogenesis* 32: 1268-1278.

## RESEARCH USE

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



Try **Calpain 1 (D-11): sc-271313** or **Calpain 1 (P-6): sc-81171**, our highly recommended monoclonal alternatives to Calpain 1 (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Calpain 1 (D-11): sc-271313**.