

# Calpain 2 (E-10): sc-373966

## 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 and erythrocyte type, resulting from both alternative splicing and proteolytic processing.

## CHROMOSOMAL LOCATION

Genetic locus: CAPN2 (human) mapping to 1q41; Capn2 (mouse) mapping to 1 H5.

## SOURCE

Calpain 2 (E-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of Calpain 2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Calpain 2 (E-10) is available conjugated to agarose (sc-373966 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373966 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373966 PE), fluorescein (sc-373966 FITC), Alexa Fluor® 488 (sc-373966 AF488), Alexa Fluor® 546 (sc-373966 AF546), Alexa Fluor® 594 (sc-373966 AF594) or Alexa Fluor® 647 (sc-373966 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373966 AF680) or Alexa Fluor® 790 (sc-373966 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373966 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

Calpain 2 (E-10) is recommended for detection of Calpain 2 precursor of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

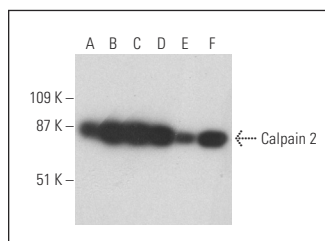
Suitable for use as control antibody for Calpain 2 siRNA (h): sc-41459, Calpain 2 siRNA (m): sc-41460, Calpain 2 siRNA (r): sc-60100, Calpain 2 shRNA Plasmid (h): sc-41459-SH, Calpain 2 shRNA Plasmid (m): sc-41460-SH, Calpain 2 shRNA Plasmid (r): sc-60100-SH, Calpain 2 shRNA (h) Lentiviral Particles: sc-41459-V, Calpain 2 shRNA (m) Lentiviral Particles: sc-41460-V and Calpain 2 shRNA (r) Lentiviral Particles: sc-60100-V.

Molecular Weight of Calpain 2 large regulatory subunit: 80 kDa.

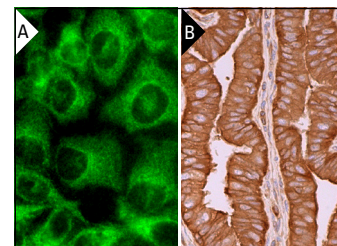
## STORAGE

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

## DATA



Calpain 2 (E-10) HRP: sc-373966 HRP. Direct western blot analysis of Calpain 2 expression in A-431 (A), HeLa (B), TF-1 (C), K-562 (D), NIH/3T3 (E) and C2C12 (F) whole cell lysates.



Calpain 2 (E-10): sc-373966. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Miller, A.P., et al. 2017. Acute death of astrocytes in blast-exposed rat organotypic hippocampal slice cultures. *PLoS ONE* 12: e0173167.
2. Mendoza, P.A., et al. 2018. Calpain2 mediates Rab5-driven focal adhesion disassembly and cell migration. *Cell Adh. Migr.* 12: 185-194.
3. Faraco, G., et al. 2019. Dietary salt promotes cognitive impairment through Tau phosphorylation. *Nature* 574: 686-690.
4. Cicognola, C., et al. 2020. Tauopathy-associated Tau fragment ending at amino acid 224 is generated by Calpain 2 cleavage. *J. Alzheimers Dis.* 74: 1143-1156.
5. Haque, A., et al. 2020. Calpain mediated expansion of CD4<sup>+</sup> cytotoxic T cells in rodent models of Parkinson's disease. *Exp. Neurol.* 330: 113315.
6. Shin, E.Y., et al. 2020. Integrin-mediated adhesions in regulation of cellular senescence. *Sci. Adv.* 6: eaay3909.
7. Chen, L., et al. 2021. The nuclear receptor HNF4 drives a brush border gene program conserved across murine intestine, kidney, and embryonic yolk sac. *Nat. Commun.* 12: 2886.
8. Liu, G.T., et al. 2022. Endosomal phosphatidylinositol 3-phosphate controls synaptic vesicle cycling and neurotransmission. *EMBO J.* 41: e109352.
9. Riffo, E., et al. 2022. The Sall2 transcription factor promotes cell migration regulating focal adhesion turnover and Integrin β1 expression. *Front. Cell Dev. Biol.* 10: 1031262.
10. Nguyen, T.T.T., et al. 2023. Tryptophan-dependent and -independent secretions of tryptophanyl- tRNA synthetase mediate innate inflammatory responses. *Cell Rep.* 42: 111905.

## RESEARCH USE

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

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