

Calpain 5 (A-5): sc-271271

BACKGROUND

Calpains are calcium-activated thiol proteases involved in intracellular processing of proteins and signal transduction. The classic calpains are heterodimers with one large subunit, one small subunit and five EF-hand-calcium binding structures. The large subunit varies between family members and can be active without the small subunit. Calpain 5, sometimes referred to as HTRA3, belongs to the non-classical Calpain subfamily that lacks the EF-hand-calcium-binding structures. Calpain 5 is ubiquitously expressed, localizes to the cytoplasm and nucleus and is a homolog of Calpain 10. Calpain 5, in addition to Calpain 10 and Calpain 6, differs from other subfamily members by the presence of a T-domain that is homologous to the *C. elegans* protein Tra-3. Calpain 5, the human ortholog of this nematode protein, may play a role in sex determination.

CHROMOSOMAL LOCATION

Genetic locus: CAPN5 (human) mapping to 11q13.5; Capn5 (mouse) mapping to 7 E2.

SOURCE

Calpain 5 (A-5) is a mouse monoclonal antibody raised against amino acids 1-105 mapping at the N-terminus of Calpain 5 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.

Calpain 5 (A-5) is available conjugated to agarose (sc-271271 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271271 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271271 PE), fluorescein (sc-271271 FITC), Alexa Fluor® 488 (sc-271271 AF488), Alexa Fluor® 546 (sc-271271 AF546), Alexa Fluor® 594 (sc-271271 AF594) or Alexa Fluor® 647 (sc-271271 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271271 AF680) or Alexa Fluor® 790 (sc-271271 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Calpain 5 (A-5) is recommended for detection of Calpain 5 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 5 siRNA (h): sc-62064, Calpain 5 siRNA (m): sc-62065, Calpain 5 shRNA Plasmid (h): sc-62064-SH, Calpain 5 shRNA Plasmid (m): sc-62065-SH, Calpain 5 shRNA (h) Lentiviral Particles: sc-62064-V and Calpain 5 shRNA (m) Lentiviral Particles: sc-62065-V.

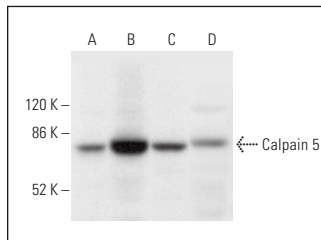
Molecular Weight of Calpain 5: 73 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Caki-1 cell lysate: sc-2224 or IMR-32 cell lysate: sc-2409.

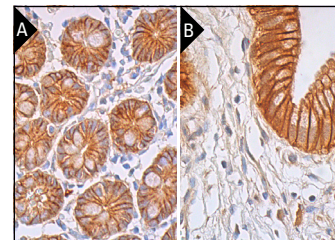
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Calpain 5 (A-5): sc-271271. Western blot analysis of Calpain 5 expression in Hep G2 (A), Caki-1 (B), IMR-32 (C) and Y79 (D) whole cell lysates.



Calpain 5 (A-5): sc-271271. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum (A) and human gall bladder (B) tissue showing membrane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Schaefer, K.A., et al. 2016. Calpain-5 expression in the retina localizes to photoreceptor synapses. *Invest. Ophthalmol. Vis. Sci.* 57: 2509-2521.
- Wang, Y., et al. 2018. Photoreceptor cell-derived CAPN5 regulates retinal pigment epithelium cell proliferation through direct regulation of SLIT2 cleavage. *Invest. Ophthalmol. Vis. Sci.* 59: 1810-1821.
- Mun, S., et al. 2022. Transcriptome profile of membrane and extracellular matrix components in ligament-fibroblastic progenitors and cementoblasts differentiated from human periodontal ligament cells. *Genes* 13: 659.
- Gal, J., et al. 2022. S-acylation regulates the membrane association and activity of Calpain-5. *Biochim. Biophys. Acta Mol. Cell Res.* 1869: 119298.
- Li, H., et al. 2024. CAPN5 attenuates cigarette smoke extract-induced apoptosis and inflammation in BEAS-2B cells. *Tob. Induc. Dis.* 22: 22.

STORAGE

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

RESEARCH USE

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

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