

# Calpain reg (P-1): sc-32325

## BACKGROUND

Calpain 1 is an intracellular calcium-dependent protease that cleaves cytoskeletal and submembranous proteins. Calpains are nonlysosomal, calcium-activated intracellular cysteine proteases. They 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: CAPNS1 (human) mapping to 19q13.12; Capns1 (mouse) mapping to 7 B1.

## SOURCE

Calpain reg (P-1) is a mouse monoclonal antibody raised against myocardial small regulatory subunit complexed with Calpain 2 of bovine origin.

## PRODUCT

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

Calpain reg (P-1) is available conjugated to agarose (sc-32325 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32325 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32325 PE), fluorescein (sc-32325 FITC), Alexa Fluor® 488 (sc-32325 AF488), Alexa Fluor® 546 (sc-32325 AF546), Alexa Fluor® 594 (sc-32325 AF594) or Alexa Fluor® 647 (sc-32325 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32325 AF680) or Alexa Fluor® 790 (sc-32325 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Calpain reg (P-1) is recommended for detection of Calpain reg of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with the large calpain catalytic subunits.

Suitable for use as control antibody for Calpain reg siRNA (h): sc-29887, Calpain reg siRNA (m): sc-29888, Calpain reg shRNA Plasmid (h): sc-29887-SH, Calpain reg shRNA Plasmid (m): sc-29888-SH, Calpain reg shRNA (h) Lentiviral Particles: sc-29887-V and Calpain reg shRNA (m) Lentiviral Particles: sc-29888-V.

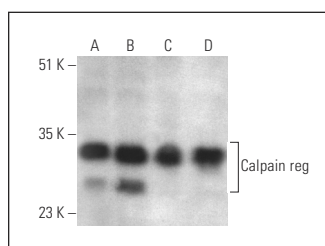
Molecular Weight of Calpain reg: 30 kDa.

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

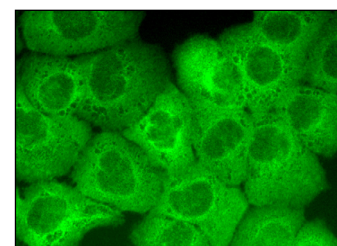
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 reg (P-1) HRP: sc-32325 HRP. Direct western blot analysis of Calpain reg expression in A-431 (A), HUV-EC-C (B), K-562 (C) and TF-1 (D) whole cell lysates.



Calpain reg (P-1): sc-32325. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic and membrane localization.

## SELECT PRODUCT CITATIONS

1. Fei, B., et al. 2013. Modulation by Syk of Bcl-2, calcium and the Calpain-calpastatin proteolytic system in human breast cancer cells. *Biochim. Biophys. Acta* 1833: 2153-2164.
2. Piper, A.K., et al. 2017. Enzymatic cleavage of myoferlin releases a dual C2-domain module linked to ERK signalling. *Cell. Signal.* 33: 30-40.
3. Gao, Y., et al. 2019. Genetic models of Calpain deficiency and ectopic expression. *Methods Mol. Biol.* 1915: 261-274.
4. Piper, A.K., et al. 2020. Loss of Calpains-1 and -2 prevents repair of plasma membrane scrape injuries, but not small pores, and induces a severe muscular dystrophy. *Am. J. Physiol. Cell Physiol.* 318: C1226-C1237.
5. Bensaada, I., et al. 2021. Calpastatin prevents Angiotensin II-mediated podocyte injury through maintenance of autophagy. *Kidney Int.* 100: 90-106.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.