

Calponin 3 (A-2): sc-271188

BACKGROUND

Calponin regulates smooth muscle cell contraction and is a marker of smooth muscle cell differentiation. Calponin, an Actin- and Tropomyosin-binding protein, is characterized as an inhibitory factor of smooth-muscle actomyosin activity. Calponin is implicated in the regulation of smooth muscle contraction through its interaction with F-Actin and inhibition of the Actin-activated MgATPase activity of phosphorylated Myosin. Both properties are lost following phosphorylation (primarily at Serine 175) by protein kinase C or calmodulin-dependent protein kinase II. The three forms of Calponin, Calponin 1 (basic Calponin), Calponin 2 (neutral Calponin) and Calponin 3 (acidic Calponin) are found in smooth muscle tissue. Additionally, Calponin 2 is found in heart muscle tissue and Calponin 3 is found in the brain.

REFERENCES

1. Tang, D.C., et al. 1996. Structure-function relations of smooth muscle Calponin. The critical role of Serine 175. *J. Biol. Chem.* 271: 8605-8611.
2. Masuda, H., et al. 1996. Molecular cloning and characterization of human non-smooth muscle Calponin. *J. Biochem.* 120: 415-424.
3. Doi, M., et al. 1997. Reduced expression of Calponin in canine basilar artery after subarachnoid haemorrhage. *Acta Neurochir.* 139: 77-81.
4. Kaneko, T., et al. 2000. Identification of Calponin as a novel substrate of Rho-kinase. *Biochem. Biophys. Res. Commun.* 273: 110-116.
5. di Gioia, C.R., et al. 2000. Angiotensin II increases Calponin expression in cultured rat vascular smooth muscle cells. *Biochem. Biophys. Res. Commun.* 279: 965-969.
6. Yoshimoto, R., et al. 2000. Proteolysis of acidic Calponin by μ -calpain. *J. Biochem.* 128: 1045-1049.

CHROMOSOMAL LOCATION

Genetic locus: CNN3 (human) mapping to 1p21.3; Cnn3 (mouse) mapping to 3 G1.

SOURCE

Calponin 3 (A-2) is a mouse monoclonal antibody raised against amino acids 275-329 mapping at the C-terminus of Calponin 3 of human origin.

PRODUCT

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

Calponin 3 (A-2) is available conjugated to agarose (sc-271188 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271188 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271188 PE), fluorescein (sc-271188 FITC), Alexa Fluor® 488 (sc-271188 AF488), Alexa Fluor® 546 (sc-271188 AF546), Alexa Fluor® 594 (sc-271188 AF594) or Alexa Fluor® 647 (sc-271188 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271188 AF680) or Alexa Fluor® 790 (sc-271188 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Calponin 3 (A-2) is recommended for detection of Calponin 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

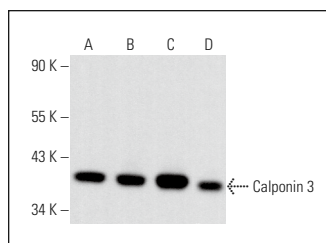
Suitable for use as control antibody for Calponin 3 siRNA (h): sc-29893, Calponin 3 siRNA (m): sc-29894, Calponin 3 siRNA (r): sc-270444, Calponin 3 shRNA Plasmid (h): sc-29893-SH, Calponin 3 shRNA Plasmid (m): sc-29894-SH, Calponin 3 shRNA Plasmid (r): sc-270444-SH, Calponin 3 shRNA (h) Lentiviral Particles: sc-29893-V, Calponin 3 shRNA (m) Lentiviral Particles: sc-29894-V and Calponin 3 shRNA (r) Lentiviral Particles: sc-270444-V.

Molecular Weight (predicted) of Calponin 3: 36 kDa.

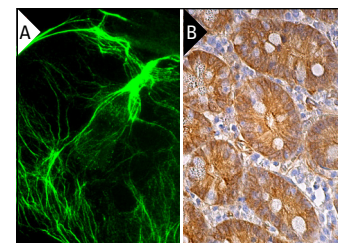
Molecular Weight (observed) of Calponin 3: 37-41 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or SK-N-SH cell lysate: sc-2410.

DATA



Calponin 3 (A-2): sc-271188. Western blot analysis of Calponin 3 expression in HeLa (A), Hep G2 (B), SK-N-SH (C) and A2058 (D) whole cell lysates.



Calponin 3 (A-2): sc-271188. Immunofluorescence staining of formalin-fixed A-431 cells showing Actin filaments localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Ciuba, K., et al. 2018. Calponin-3 is critical for coordinated contractility of actin stress fibers. *Sci. Rep.* 8: 17670.
2. Nair, V.A., et al. 2019. Calponin 3 promotes invasion and drug resistance of colon cancer cells. *World J. Gastrointest. Oncol.* 11: 971-982.

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.