

Calponin 3 (G-11): sc-271189

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., Kang, H.M., Jin, J.P., Fraser, E.D. and Walsh, M.P. 1996. Structure-function relations of smooth muscle Calponin. The critical role of Serine 175. *J. Biol. Chem.* 271: 8605-8611.
2. Masuda, H., Tanaka, K., Takagi, M., Ohgami, K., Sakamaki, T., Shibata, N. and Takahashi, K. 1996. Molecular cloning and characterization of human non-smooth muscle Calponin. *J. Biochem.* 120: 415-424.
3. Doi, M., Kasuya, H., Weir, B., Cook, D.A. and Ogawa, A. 1997. Reduced expression of Calponin in canine basilar artery after subarachnoid haemorrhage. *Acta Neurochir.* 139: 77-81.
4. Kaneko, T., Amano, M., Maeda, A., Goto, H., Takahashi, K., Ito, M. and Kaibuchi, K. 2000. Identification of Calponin as a novel substrate of Rho-kinase. *Biochem. Biophys. Res. Commun.* 273: 110-116.
5. di Gioia, C.R., van de Greef, W.M., Sperti, G., Castoldi, G., Todaro, N., Ierardi, C., Pieruzzi, F. and Stella, A. 2000. Angiotensin II increases Calponin expression in cultured rat vascular smooth muscle cells. *Biochem. Biophys. Res. Commun.* 279: 965-969.
6. Yoshimoto, R., Hori, M., Ozaki, H. and Karaki, H. 2000. Proteolysis of acidic Calponin by μ -Calpain. *J. Biochem.* 128: 1045-1049.

CHROMOSOMAL LOCATION

Genetic locus: CNN3 (human) mapping to 1p21.3.

SOURCE

Calponin 3 (G-11) 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 IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Calponin 3 (G-11) is recommended for detection of Calponin 3 of 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 shRNA Plasmid (h): sc-29893-SH and Calponin 3 shRNA (h) Lentiviral Particles: sc-29893-V.

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

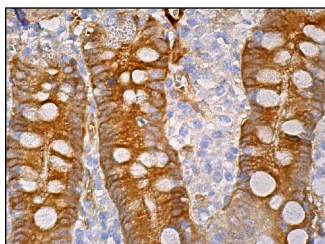
Molecular Weight (observed) of Calponin 3: 37-41 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410 or KNRK whole cell lysate: sc-2214.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L PLUS-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Calponin 3 (G-11): sc-271189. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.