SANTA CRUZ BIOTECHNOLOGY, INC.

Calponin 1/2/3 (FL-297): sc-28545

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

SOURCE

Calponin 1/2/3 (FL-297) is a rabbit polyclonal antibody raised against amino acids 1-297 representing full length Calponin 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Calponin 1/2/3 (FL-297) is recommended for detection of Calponin 1 and Calponin 3, and to a lesser extent, Calponin 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Calponin 1/2/3 (FL-297) is also recommended for detection of Calponin 1 and Calponin 3, and to a lesser extent, Calponin 2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Calponin 1/2/3 siRNA (h): sc-43657, Calponin 1/2/3 shRNA Plasmid (h): sc-43657-SH and Calponin 1/2/3 shRNA (h) Lentiviral Particles: sc-43657-V.

Molecular Weight of Calponin 1/2/3: 33-36 kDa.

Positive Controls: Calponin 2 (h): 293T Lysate: sc-112525.

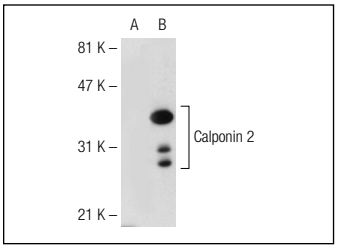
STORAGE

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.

DATA



Calponin 1/2/3 (FL-297): sc-28545. Western blot analysis of Calponin 2 expression in non-transfected: sc-117752 (**A**) and human Calponin 2 transfected: sc-112525 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liu, S.Q., et al. 2008. Formation of smooth muscle α Actin filaments in CD34+ bone marrow cells on arterial elastic laminae: potential role of SH2 domain-containing protein tyrosine phosphatase-1. Matrix Biol. 27: 282-294.
2. Carrillo-Sepúlveda, M.A., et al. 2010. Phenotypic mod-ulation of cultured vascular smooth muscle cells: a functional analysis focusing on MLC and ERK1/2 phosphorylation. Mol. Cell. Biochem. 341: 279-289.
3. Adhikari, N., et al. 2011. Increase in GLUT1 in smooth muscle alters vascular contractility and increases inflammation in response to vascular injury. Arterioscler. Thromb. Vasc. Biol. 31: 86-94.
4. Sharma, A.K. 2011. An examination of regenerative medicine-based strategies for the urinary bladder. Regen. Med. 6: 583-598.
5. Castello-Cros, R., et al. 2011. Matrix remodeling stimulates stromal autophagy, "fueling" cancer cell mitochondrial metabolism and metastasis. Cell Cycle 10: 2021-2034.
6. Carito, V., et al. 2012. Metabolic remodeling of the tumor microenvironment: migration stimulating factor (MSF) reprograms myofibroblasts toward lactate production, fueling anabolic tumor growth. Cell Cycle 11: 3403-3414.
7. Lim, K., et al. 2012. Vascular Klotho deficiency potentiates the development of human artery calcification and mediates resistance to fibroblast growth factor 23. Circulation 125: 2243-2255.
8. Guido, C., et al. 2012. Mitochondrial fission induces glycolytic reprogramming in cancer-associated myofibroblasts, driving stromal lactate production, and early tumor growth. Oncotarget 3: 798-810.