

Calponin 3 (T-16): sc-16724

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 (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Calponin 3 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-16724 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

Calponin 3 (T-16) is recommended for detection of Calponin 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Calponin 3 (T-16) is also recommended for detection of Calponin 3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Calponin 3 siRNA (h): sc-29893, Calponin 3 siRNA (m): sc-29894, Calponin 3 shRNA Plasmid (h): sc-29893-SH, Calponin 3 shRNA Plasmid (m): sc-29894-SH, Calponin 3 shRNA (h) Lentiviral Particles: sc-29893-V and Calponin 3 shRNA (m) Lentiviral Particles: sc-29894-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, KNRK whole cell lysate: sc-2214 or JEG-3 whole cell lysate: sc-364255.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Haag, J. and Aigner, T. 2007. Identification of Calponin 3 as a novel Smad-binding modulator of BMP signaling expressed in cartilage. *Exp. Cell Res.* 313: 3386-3394.
2. Kim, S., et al. 2008. A Proteomic approach for protein-profiling the oncogenic Ras induced transformation (H-, K-, and N-Ras) in NIH/3T3 mouse embryonic fibroblasts. *Proteomics* 8: 3082-3093.

PROTOCOLS

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

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Try **Calponin 3 (A-2): sc-271188**, our highly recommended monoclonal alternative to Calponin 3 (T-16).