

Tropomyosin (C-3): sc-376339

BACKGROUND

Tropomyosins are a group of structural proteins. Tropomyosins are present in virtually all eukaryotic cells, both muscle and non-muscle, where they bind Actin filaments and function to modulate Actin-Myosin interaction and stabilize Actin filament structure. Tropomyosin α is encoded by the TPM1 gene, which maps to human chromosome 15q22.2 and undergoes alternative splicing to generate at least four isoforms, including skeletal muscle (isoform 1), smooth muscle (isoform 2), fibroblast/TM3 (isoform 3) and isoform 4. Tropomyosin β is encoded by the TPM2 gene, which maps to human chromosome 9p13.3 and undergoes alternative splicing to generate three isoforms, including skeletal muscle (isoform 1), non-muscle/fibroblast TM36/epithelial TMe1 (isoform 2) and non-muscle (isoform 3). Troponin I binds Tropomyosin at a specific region and the association of Tropomyosin-Troponin with Actin filaments may increase the rigidity of Actin filaments. Tropomyosin also interacts with Caldesmon to regulate smooth muscle contraction.

REFERENCES

1. Tiso, N., Rampoldi, L., Pallavicini, A., Zimbello, R., Pandolfo, D., Valle, G., Lanfranchi, G. and Danieli, G.A. 1997. Fine mapping of five human skeletal muscle genes: Tropomyosin α , Tropomyosin β , Troponin I slow-twitch, Troponin I fast-twitch and Troponin C fast. *Biochem. Biophys. Res. Commun.* 230: 347-350.
2. Lehman, W., Hatch, V., Korman, V., Rosol, M., Thomas, L., Maytum, R., Geeves, M.A., Van Eyk, J.E., Tobacman, L.S. and Craig, R. 2000. Tropomyosin and Actin isoforms modulate the localization of Tropomyosin strands on Actin filaments. *J. Mol. Biol.* 302: 593-606.
3. Goldmann, W.H. 2000. Binding of Tropomyosin-troponin to Actin increases filament bending stiffness. *Biochem. Biophys. Res. Commun.* 276: 1225-1228.
4. Ohtsuki, I. and Shiraishi, F. 2002. Periodic binding of Troponin C.I and Troponin I to Tropomyosin-Actin filaments. *J. Biochem.* 131: 739-743.
5. SWISS-PROT/TrEMBL (136090). World Wide web URL: <http://www.expasy.ch/sprot/sprot-top.html>

SOURCE

Tropomyosin (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 223-259 near the C-terminus of Tropomyosin β 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.

Blocking peptide available for competition studies, sc-376339 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Tropomyosin (C-3) is recommended for detection of Tropomyosin α isoforms 1-4, Tropomyosin isoforms 1-3, Tropomyosin γ and Tropomyosin 4 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).

Tropomyosin (C-3) is also recommended for detection of Tropomyosin α isoforms 1-4, Tropomyosin isoforms 1-3, Tropomyosin γ and Tropomyosin 4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Tropomyosin siRNA (h): sc-36734, Tropomyosin siRNA (m): sc-36735, Tropomyosin shRNA Plasmid (h): sc-36734-SH, Tropomyosin shRNA Plasmid (m): sc-36735-SH, Tropomyosin shRNA (h) Lentiviral Particles: sc-36734-V and Tropomyosin shRNA (m) Lentiviral Particles: sc-36735-V.

Molecular Weight (predicted) of Tropomyosin α : 33 kDa.

Molecular Weight (predicted) of Tropomyosin β : 33 kDa.

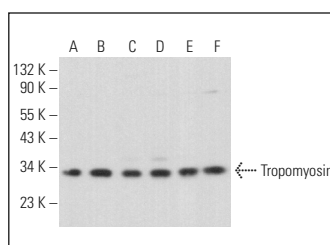
Molecular Weight (predicted) of Tropomyosin γ : 33 kDa.

Molecular Weight (predicted) of Tropomyosin 4: 29 kDa.

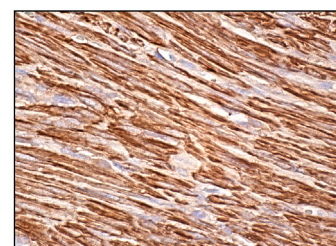
Molecular Weight (observed) of Tropomyosin: 31-47 kDa.

Positive Controls: A-673 cell lysate: sc-2414, Sol8 cell lysate: sc-2249 or C6 whole cell lysate: sc-364373.

DATA



Tropomyosin (C-3): sc-376339. Western blot analysis of Tropomyosin expression in HeLa (A), A-673 (B), Sol8 (C), C2C12 (D), C6 (E) and L6 (F) whole cell lysates.



Tropomyosin (C-3): sc-376339. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells.

RESEARCH USE

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

PROTOCOLS

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