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- Expressversand

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# Tropomyosin $\alpha$ (h): 293T Lysate: sc-159958

## 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  $\alpha$  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  $\beta$  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., et al. 1997. Fine mapping of five human skeletal muscle genes:  $\alpha$ -tropomyosin,  $\beta$ -tropomyosin, troponin-I slow-twitch, troponin-I fast-twitch and troponin-C fast. *Biochem. Biophys. Res. Commun.* 230: 347-350.
2. Goldmann, W.H. 2000. Binding of tropomyosin-troponin to Actin increases filament bending stiffness. *Biochem. Biophys. Res. Commun.* 276: 1225-1228.
3. Lehman, W., et al. 2000. Tropomyosin and Actin isoforms modulate the localization of tropomyosin strands on Actin filaments. *J. Mol. Biol.* 302: 593-606.
4. Ohtsuki, I., et al. 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>

## CHROMOSOMAL LOCATION

Genetic locus: TPM1 (human) mapping to 15q22.2.

## PRODUCT

Tropomyosin  $\alpha$  (h): 293T Lysate represents a lysate of human Tropomyosin  $\alpha$  transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

Tropomyosin  $\alpha$  (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Tropomyosin  $\alpha$  antibodies. Recommended use: 10-20  $\mu$ l per lane.

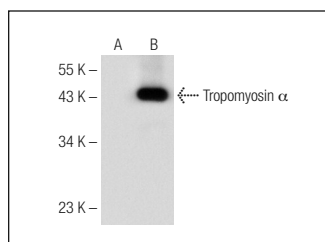
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Tropomyosin  $\alpha$  (F-6): sc-376541 is recommended as a positive control antibody for Western Blot analysis of enhanced human Tropomyosin  $\alpha$  expression in Tropomyosin  $\alpha$  transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## DATA



Tropomyosin  $\alpha$  (F-6): sc-376541. Western blot analysis of Tropomyosin  $\alpha$  expression in non-transfected: sc-117752 (A) and human Tropomyosin  $\alpha$  transfected: sc-159958 (B) 293T whole cell lysates.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.