

# Tropomyosin (E-17): sc-18174

## BACKGROUND

Tropomyosins are a group of structural proteins. Tropomyosins are present in virtually all eukaryotic cells (both muscle and nonmuscle), where they bind actin filaments and function to modulate actin-myosin interaction and stabilize actin filament structure.  $\alpha$  Tropomyosin 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.  $\beta$  Tropomyosin 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), nonmuscle/fibroblast TM36/epithelial Tme1 (isoform 2) and nonmuscle (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.

## SOURCE

Tropomyosin (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Tropomyosin  $\beta$  of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-18174 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

Tropomyosin (E-17) is recommended for detection of Tropomyosin  $\alpha$  isoforms 1-4, Tropomyosin  $\beta$  isoforms 1-3, Tropomyosin  $\gamma$  and Tropomyosin 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

Tropomyosin (E-17) is also recommended for detection of Tropomyosin  $\alpha$  isoforms 1-4, Tropomyosin  $\beta$  isoforms 1-3, Tropomyosin  $\gamma$  and Tropomyosin 4 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight (predicted) of Tropomyosin  $\alpha$ : 33 kDa.

Molecular Weight (predicted) of Tropomyosin  $\beta$ : 33 kDa.

Molecular Weight (predicted) of Tropomyosin  $\gamma$ : 33 kDa.

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

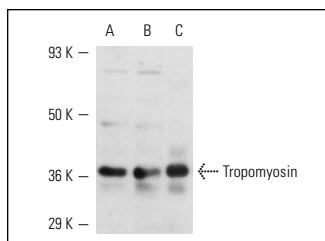
Molecular Weight (observed) of Tropomyosin: 31-47 kDa.

Positive Controls: Sol8 cell lysate: sc-2249 or CCD-1064Sk cell lysate: sc-2263.

## 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.

## DATA



Tropomyosin (E-17): sc-18174. Western blot analysis of Tropomyosin expression in C2C12 (A), Sol8 (B) and CCD-1064Sk (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Tang, Y., et al. 2003. Disruption of transforming growth factor- $\beta$  signaling in ELF spectrin- $\beta$ -deficient mice. *Science* 299: 574-577.
2. Armstrong, F., et al. 2007. TPM3-ALK expression induces changes in cytoskeleton organisation and confers higher metastatic capacities than other ALK fusion proteins. *Eur. J. Cancer* 43: 640-646.
3. Ahmad, F., et al. 2008. The role of cardiac Troponin T quantity and function in cardiac development and dilated cardiomyopathy. *PLoS ONE* 3: e2642.

## STORAGE

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

## PROTOCOLS

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



Try **Tropomyosin (F-6): sc-74480** or **Tropomyosin (C-3): sc-376339**, our highly recommended monoclonal alternatives to Tropomyosin (E-17).