SANTA CRUZ BIOTECHNOLOGY, INC.

Tropomyosin α (F-6): sc-376541

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 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., et al. 2000. Tropomyosin and Actin isoforms modulate the localization of Tropomyosin strands on Actin filaments. J. Mol. Biol. 302: 593-606.

CHROMOSOMAL LOCATION

Genetic locus: TPM1 (human) mapping to 15q22.2; Tpm1 (mouse) mapping to 9 C.

SOURCE

Tropomyosin α (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 123-161 within an internal region of Tropomyosin α of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Tropomyosin α (F-6) is available conjugated to agarose (sc-376541 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376541 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376541 PE), fluorescein (sc-376541 FITC), Alexa Fluor® 488 (sc-376541 AF488), Alexa Fluor® 546 (sc-376541 AF546), Alexa Fluor® 594 (sc-376541 AF594) or Alexa Fluor® 647 (sc-376541 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376541 AF680) or Alexa Fluor® 790 (sc-376541 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376541 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Tropomyosin α (F-6) is recommended for detection of Tropomyosin α of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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).

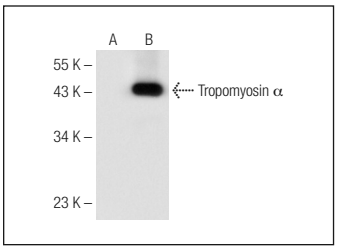
Tropomyosin α (F-6) is also recommended for detection of Tropomyosin α in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Tropomyosin α siRNA (h): sc-43470, Tropomyosin α siRNA (m): sc-43471, Tropomyosin α siRNA (r): sc-270231, Tropomyosin α shRNA Plasmid (h): sc-43470-SH, Tropomyosin α shRNA Plasmid (m): sc-43471-SH, Tropomyosin α shRNA Plasmid (r): sc-270231-SH, Tropomyosin α shRNA (h) Lentiviral Particles: sc-43470-V, Tropomyosin α shRNA (m) Lentiviral Particles: sc-43471-V and Tropomyosin α shRNA (r) Lentiviral Particles: sc-270231-V.

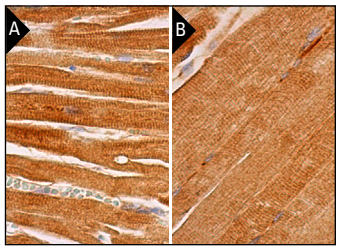
Molecular Weight of Tropomyosin α: 35-45 kDa.

Positive Controls: Tropomyosin α (h): 293T Lysate: sc-159958, Sol8 cell lysate: sc-2249 or CCD-1064Sk cell lysate: sc-2263.

DATA



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



Tropomyosin α (F-6): sc-376541. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle (**A**) and human skelatal muscle (**B**) tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Mourino-Alvarez, L., et al. 2018. A comprehensive study of calcific aortic stenosis: from rabbit to human samples. Dis. Model. Mech. 11: dmm033423.
2. Gagat, M., et al. 2021. CRISPR-based activation of endogenous expression of TPM1 inhibits inflammatory response of primary human coronary artery endothelial and smooth muscle cells induced by recombinant human tumor necrosis factor α. Front. Cell Dev. Biol. 9: 668032.

STORAGE

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