SANTA CRUZ BIOTECHNOLOGY, INC.

Tropomyosin β (J-23): sc-134128

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Tropomyosin β, also known as TPM2 or TMSB, is a 284 amino acid protein that localizes to both the cytoplasm and the cytoskeleton and belongs to the Tropomyosin family of structural proteins. Existing as a heterodimer with a Tropomyosin α protein, Tropomyosin β functions to bind Actin filaments in muscle and non-muscle cells and, via this binding, plays a central role in the regulation of striated muscle contraction and in the stabilization of cytoskeletal Actin filaments. Tropomyosin β is expressed as multiple alternatively spliced isoforms and is present in primary breast cancer tissues, suggesting a role in tumor formation and metastasis. Defects in the gene encoding Tropomyosin β are the cause of nemaline myopathy type 4 (NEM4) and distal arthrogryposis type 1 (DA1), the former of which is a form of congenital myopathy and the latter of which is a form of inherited multiple congenital contractures.

REFERENCES

1. Holtzer, M.E., Kidd, S.G., Crimmins, D.L. and Holtzer, A. 1992. ββ homodimers exist in native rabbit skeletal muscle Tropomyosin and increase after denaturation-renaturation. Protein Sci. 1: 335-341.
2. Hunt, C.C., Eyre, H.J., Akkari, P.A., Meredith, C., Dorosz, S.M., Wilton, S.D., Callen, D.F., Laing, N.G. and Baker, E. 1995. Assignment of the human β Tropomyosin gene (TPM2) to band 9p13 by fluorescence *in situ* hybridisation. Cytogenet. Cell Genet. 71: 94-95.
3. Donner, K., Ollikainen, M., Ridanpää, M., Christen, H.J., Goebel, H.H., de Visser, M., Pelin, K. and Wallgren-Pettersson, C. 2002. Mutations in the β Tropomyosin (TPM2) gene — a rare cause of nemaline myopathy. Neuromuscul. Disord. 12: 151-158.
4. Tajsharghi, H., Ohlsson, M., Lindberg, C. and Oldfors, A. 2007. Congenital myopathy with nemaline rods and cap structures caused by a mutation in the β Tropomyosin gene (TPM2). Arch. Neurol. 64: 1334-1338.
5. Robinson, P., Lipscomb, S., Preston, L.C., Altin, E., Watkins, H., Ashley, C.C. and Redwood, C.S. 2007. Mutations in fast skeletal Troponin I, Troponin T, and β Tropomyosin that cause distal arthrogryposis all increase contractile function. FASEB J. 21: 896-905.
6. Tajsharghi, H., Kimber, E., Holmgren, D., Tulinius, M. and Oldfors, A. 2007. Distal arthrogryposis and muscle weakness associated with a β Tropomyosin mutation. Neurology 68: 772-775.
7. Nilsson, J. and Tajsharghi, H. 2008. β Tropomyosin mutations alter Tropomyosin isoform composition. Eur. J. Neurol. 15: 573-578.
8. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 190990. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
9. Gurnett, C.A., Alaee, F., Desruisseau, D., Boehm, S. and Dobbs, M.B. 2009. Skeletal muscle contractile gene (TNNT3, MYH3, TPM2) mutations not found in vertical talus or clubfoot. Clin. Orthop. Relat. Res. 467: 1195-1200.

CHROMOSOMAL LOCATION

Genetic locus: TPM2 (human) mapping to 9p13.3; Tpm2 (mouse) mapping to 4 B1.

SOURCE

Tropomyosin β (J-23) is a Protein A purified rabbit polyclonal antibody raised against synthetic Tropomyosin β peptide of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

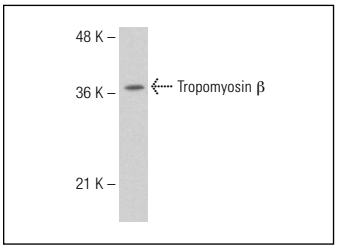
Tropomyosin β (J-23) is recommended for detection of Tropomyosin β of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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).

Suitable for use as control antibody for Tropomyosin β siRNA (h): sc-43478, Tropomyosin β siRNA (m): sc-43479, Tropomyosin β shRNA Plasmid (h): sc-43478-SH, Tropomyosin β shRNA Plasmid (m): sc-43479-SH, Tropomyosin β shRNA (h) Lentiviral Particles: sc-43478-V and Tropomyosin β shRNA (m) Lentiviral Particles: sc-43479-V.

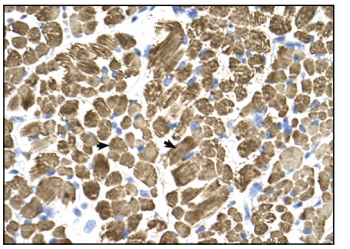
Molecular Weight of Tropomyosin β: 33 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or human muscle tissue.

DATA



Tropomyosin β (J-23): sc-134128. Western blot analysis of Tropomyosin β expression in Hep G2 whole cell lysate.



Tropomyosin ∫ (J-23): sc-134128. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human muscle tissue showing cytoplasmic localization.

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.

PROTOCOLS

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