SANTA CRUZ BIOTECHNOLOGY, INC.

tropomodulin 3 (E-3): sc-166287

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Originally isolated from human erythrocytes, the tropomodulin (TMOD) family of proteins cap the pointed end of Actin filaments. A component of the membrane skeleton, tropomodulin binds to the amino-terminus of Tropomyosin, which coats the surface of Actin and thus blocks the elongation and depolymerization of Actin filaments. Four tropomodulin isoforms, tropomodulin 1-4, have been characterized in humans. Tropomodulin expression is isoform-specific; tropomodulin 3 is expressed ubiquitously, whereas tropomodulin 2 and tropomodulin 4 are expressed in neuronal tissue and muscle, respectively. Ubiquitous expression of seven tropomodulin 3 transcripts, ranging in size between 1 and 9.5 kb, have been identified by Northern Blot analysis on human tissues. The human TMOD3 gene maps to chromosome 15q21.2, within the same region as the gene for amyotrophic lateral sclerosis 5 (ALS5) and encodes a 352 amino acid protein. Tmod3, the mouse homolog to human TMOD3, is present as early as day 7 in embryonic development and is expressed throughout development.

REFERENCES

1. Sung, L.A., et al. 1996. Gene assignment, expression, and homology of human tropomodulin. Genomics 34: 92-96.
2. Watakabe, A., et al. 1996. N-tropomodulin: a novel isoform of tropomodulin identified as the major binding protein to brain Tropomyosin. J. Cell Sci. 109: 2299-2310.
3. Kimura, S., et al. 1999. Tropomodulin isolated from rabbit skeletal muscle inhibits filament formation of Actin in the presence of Tropomyosin and Troponin. Eur. J. Biochem. 263: 396-401.
4. Lee, A., et al. 2000. Stabilization and remodeling of the membrane skeleton during lens fiber cell differentiation and maturation. Dev. Dyn. 217: 257-270.
5. Cox, P.R. and Zoghbi, H.Y. 2000. Sequencing, expression analysis, and mapping of three unique human Tropomodulin genes and their mouse orthologs. Genomics 63: 97-107.

CHROMOSOMAL LOCATION

Genetic locus: TMOD3 (human) mapping to 15q21.2; Tmod3 (mouse) mapping to 9 D.

SOURCE

tropomodulin 3 (E-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 148-179 within an internal region of tropomodulin 3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-166287 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

tropomodulin 3 (E-3) is recommended for detection of tropomodulin 3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for tropomodulin 3 siRNA (h): sc-36732, tropomodulin 3 siRNA (m): sc-36733, tropomodulin 3 shRNA Plasmid (h): sc-36732-SH, tropomodulin 3 shRNA Plasmid (m): sc-36733-SH, tropomodulin 3 shRNA (h) Lentiviral Particles: sc-36732-V and tropomodulin 3 shRNA (m) Lentiviral Particles: sc-36733-V.

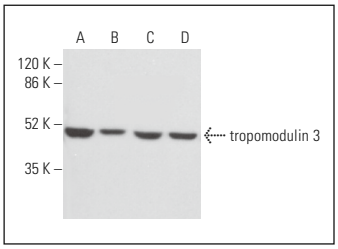
Molecular Weight of tropomodulin 3: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-673 cell lysate: sc-2414 or RAW 264.7 whole cell lysate: sc-2211.

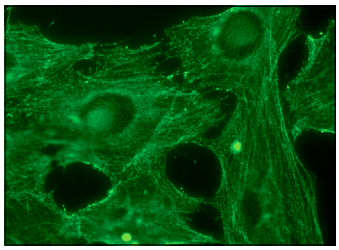
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



tropomodulin 3 (E-3): sc-166287. Western blot analysis of tropomodulin 3 expression in C2C12 (**A**), HeLa (**B**), RAW 264.7 (**C**) and A-673 (**D**) whole cell lysates.



tropomodulin 3 (E-3): sc-166287. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoskeletal 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 for detailed protocols and support products.