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# Troponin C (h2): 293T Lysate: sc-159687

## BACKGROUND

Actin is a highly conserved protein that is expressed in all eukaryotic cells. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. Myosin is a hexamer of two heavy chains (MHC) and four light chains (MLC) that inter-acts with Actin to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. Troponin facilitates the interaction between Actin and myosin by binding to calcium. Troponin is made up of at least two subunits, which are divergent in cardiac muscle, fast skeletal muscle and slow skeletal muscle. Structures of skeletal muscle Troponin are composed of Troponin C (the sensor), Troponin I (the regulator) and Troponin T (the link to the muscle thin filament). Troponin C is dumbbell-shaped and has a hydrophobic pocket that increases the contractile force of muscle fibers. Troponin C has two isoforms: fast and slow. Fast Troponin C has two calcium binding sites while slow/cardiac Troponin C has a single calcium binding site.

## REFERENCES

1. Parmacek, M.S. and Leiden, J.M. 1989. Structure and expression of the murine slow/cardiac Troponin C gene. *J. Biol. Chem.* 264: 13217-13225.
2. Koppe, R.I., Hallauer, P.L., Karpati, G. and Hastings, K.E. 1989. cDNA clone and expression analysis of rodent fast and slow skeletal muscle Troponin I mRNAs. *J. Biol. Chem.* 264: 14327-14333.
3. Ausoni, S., Campione, M., Picard, A., Moretti, P., Vitadello, M., DeNardi, C. and Schiaffino, S. 1994. Structure and regulation of the mouse cardiac Troponin I gene. *J. Biol. Chem.* 269: 339-346.
4. Potter, J.D., Sheng, Z., Pan, B.S. and Zhao, J. 1995. A direct regulatory role for Troponin T and a dual role for Troponin C in the Ca<sup>2+</sup> regulation of muscle contraction. *J. Biol. Chem.* 270: 2557-2562.
5. Barkalow, K. and Hartwig, J.H. 1995. Actin cytoskeleton. Setting the pace of cell movement. *Curr. Biol.* 5: 1000-1002.
6. Baker, J.P. and Titus, M.A. 1998. Myosins: matching functions with motors. *Curr. Opin. Cell Biol.* 10: 80-86.
7. Squire, J.M. and Morris, E.P. 1998. A new look at thin filament regulation in vertebrate skeletal muscle. *FASEB J.* 12: 761-771.

## CHROMOSOMAL LOCATION

Genetic locus: TNNC2 (human) mapping to 20q13.12.

## PRODUCT

Troponin C (h2): 293T Lysate represents a lysate of human Troponin C transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## 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.

## APPLICATIONS

Troponin C (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Troponin C antibodies. Recommended use: 10-20 µl per lane.

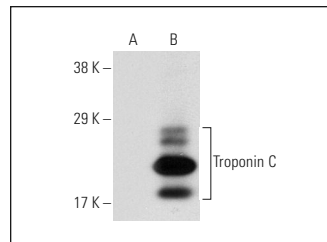
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Troponin C fast skeletal (E-7): sc-48347 is recommended as a positive control antibody for Western Blot analysis of enhanced human Troponin C expression in Troponin C 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-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.

## DATA



Troponin C fast skeletal (E-7): sc-48347. Western blot analysis of Troponin C expression in non-transfected: sc-117752 (A) and human Troponin C transfected: sc-159687 (B) 293T whole cell lysates.

## 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.