

# Troponin I-C (10B11): sc-52266

## 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 composed of two heavy chains (MHC) and four light chains (MLC); it interacts 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 comprises 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., et al. 1989. Structure and expression of the murine slow/cardiac Troponin C gene. *J. Biol. Chem.* 264: 13217-13225.
2. Koppe, R.I., et al. 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., et al. 1994. Structure and regulation of the mouse cardiac Troponin I gene. *J. Biol. Chem.* 269: 339-346.
4. Potter, J.D., et al. 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., et al. 1995. Actin cytoskeleton. Setting the pace of cell movement. *Curr. Biol.* 5: 1000-1002.
6. Baker, J.P., et al. 1998. Myosins: matching functions with motors. *Curr. Opin. Cell Biol.* 10: 80-86.
7. Squire, J.M., et al. 1998. A new look at thin filament regulation in vertebrate skeletal muscle. *FASEB J.* 12: 761-771.

## CHROMOSOMAL LOCATION

Genetic locus: TNNI3 (human) mapping to 19q13.42; Tnni3 (mouse) mapping to 7 A1.

## SOURCE

Troponin I-C (10B11) is a mouse monoclonal antibody raised against full length cardiac Troponin I of human origin, with epitope mapping to amino acids 16-20.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

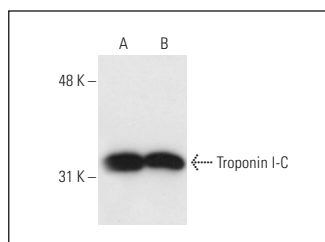
Troponin I-C (10B11) is recommended for detection of free cardiac Troponin I and cardiac Troponin I forming complexes with other Troponin components of mouse, rat, human, porcine, feline and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Troponin I-C siRNA (h): sc-36738, Troponin I-C siRNA (m): sc-36739, Troponin I-C shRNA Plasmid (h): sc-36738-SH, Troponin I-C shRNA Plasmid (m): sc-36739-SH, Troponin I-C shRNA (h) Lentiviral Particles: sc-36738-V and Troponin I-C shRNA (m) Lentiviral Particles: sc-36739-V.

Molecular Weight of Troponin I-C: 30 kDa.

Positive Controls: rat heart extract: sc-2393, human heart extract: sc-363763 or mouse heart extract: sc-2254.

## DATA



Troponin I-C (10B11): sc-52266. Western blot analysis of Troponin I-C expression in rat heart (A) and mouse heart (B) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Guilbert, A., et al. 2015. CaMKII-dependent myofilament Ca<sup>2+</sup> desensitization contributes to the frequency-dependent acceleration of relaxation. *Cell Calcium* 58: 489-499.

## 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](http://www.scbt.com) for detailed protocols and support products.



See **Troponin I (E-9): sc-365446** for Troponin I antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.