SANTA CRUZ BIOTECHNOLOGY, INC.

Troponin I-C (267): sc-52270

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Actin and Myosin are highly conserved proteins that are expressed in all eukaryotic cells. Actin filaments are crucial components of the contractile apparatus of muscle cells. Myosins interact with Actin to generate the force for diverse cellular movements. Troponin facilitates the interactions between Actin and Myosin by binding to Ca^{2+}. Troponin contains three subunits, Troponin C, I and T. Troponin C, the Ca^{2+} binding subunit, is expressed in cardiac and slow skeletal muscle, and is involved in regulating the excitation-contraction coupling in cardiac muscle. Troponin I, the inhibitory subunit of Troponin, exists as fast and slow skeletal muscle isoforms, which are differentially expressed in individual muscle fibers, and as cardiac Troponin I, which is exclusively expressed in cardiac muscle. Troponin T, the tropomyosin-binding subunit of Troponin, plays a role in conferring calcium-sensitivity to actomyosin ATPase activity, and it exists as fast and slow skeletal and cardiac isoforms.

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^{2+} 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 (267) is a mouse monoclonal antibody raised against a synthetic protein representing amino acids 169-184 of cardiac Troponin I of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

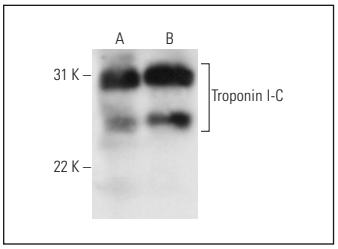
Troponin I-C (267) is recommended for detection of cardiac muscle Troponin I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

DATA



Troponin I-C (267): sc-52270. Western blot analysis of Troponin I-C expression in rat heart (**A**) and mouse heart (**B**) tissue extracts.

STORAGE

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

PROTOCOLS

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

CONJUGATES

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.