SANTA CRUZ BIOTECHNOLOGY, INC.

Troponin I-C (C5): sc-33728

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 it 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 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.

REFERENCE

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 19q13.2; Tnni3 (mouse) mapping to 7 A1.

SOURCE

Troponin I-C (C5) is a mouse monoclonal antibody raised against free human cardiac Troponin and/or native Troponin complex, with epitope mapping to amino acids 186-192.

PRODUCT

Each vial contains 100 µg IgG_{2b} 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

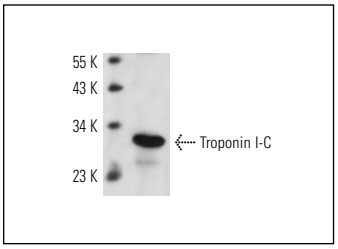
Troponin I-C (C5) is recommended for detection of Troponin I, cardiac muscle of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); may cross-react with skeletal muscle Troponin I.

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.

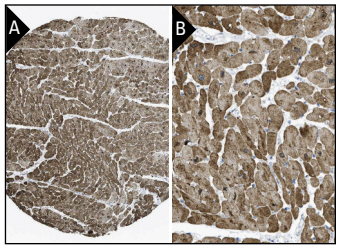
Molecular Weight of Troponin T-C: 39 kDa.

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

DATA



Troponin I-C (C5): sc-33728. Western blot analysis of cardiac Troponin I expression in mouse heart tissue extract.



Troponin I-C (C5): sc-33728. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

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, Alexa Fluor® 488 and Alexa Fluor® 647.