SANTA CRUZ BIOTECHNOLOGY, INC.

Troponin C (H-110): sc-20642

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 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 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., 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.

CHROMOSOMAL LOCATION

Genetic locus: TNNI2 (human) mapping to 11p15.5, TNNC1 (human) mapping to 3p21.1; Tnnc2 (mouse) mapping to 2 H3, Tnnc1 (mouse) mapping to 14 B.

SOURCE

Troponin C (H-110) is a rabbit polyclonal antibody raised against amino acids 51-160 of Troponin C of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

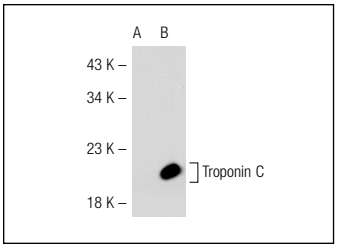
Troponin C (H-110) is recommended for detection of fast skeletal and, to a lesser extent, slow skeletal/cardiac isoforms of Troponin C of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Troponin C (H-110) is also recommended for detection of fast skeletal and, to a lesser extent, slow skeletal/cardiac isoforms of Troponin C in additional species, including canine, bovine and porcine.

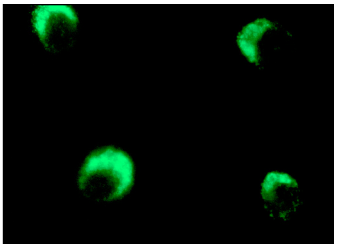
Molecular Weight of Troponin C: 18 kDa.

Positive Controls: Troponin C (h): 293T Lysate: sc-114682, SJRH30 cell lysate: sc-2287 or L6 whole cell lysate: sc-364196.

DATA



Troponin C (H-110): sc-20642. Western blot analysis of Troponin C expression in non-transfected: sc-117752 (**A**) and human Troponin C transfected: sc-114682 (**B**) 293T whole cell lysates.



Troponin C (H-110): sc-20642. Immunofluorescence staining of methanol-fixed KNRK cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Ahmad, F., et al. 2008. The role of cardiac Troponin T quantity and function in cardiac development and dilated cardiomyopathy. PLoS ONE 3: e2642.

RESEARCH USE

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

PROTOCOLS

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