SANTA CRUZ BIOTECHNOLOGY, INC.

Troponin I (H-170): sc-15368

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 2 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 2 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 2 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.

SOURCE

Troponin I (H-170) is a rabbit polyclonal antibody raised against amino acids 40-210 mapping at the C-terminus of Troponin I-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.

APPLICATIONS

Troponin I (H-170) is recommended for detection of Troponin I, cardiac muscle; Troponin I, slow skeletal muscle; and Troponin I, fast skeletal 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).

Troponin I (H-170) is also recommended for detection of Troponin I, cardiac muscle; Troponin I, slow skeletal muscle; and Troponin I, fast skeletal muscle in additional species, including equine, canine, bovine and porcine.

Molecular Weight of Troponin I: 29 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, rat heart extract: sc-2393 or mouse heart extract: sc-2254.

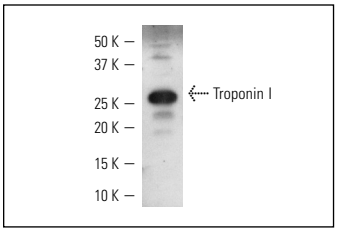
STORAGE

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

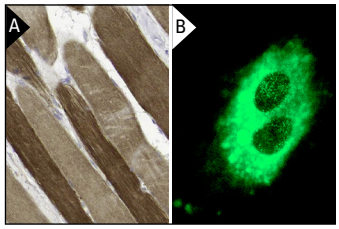
RESEARCH USE

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

DATA



Troponin I (H-170): sc-15368. Western blot analysis of Troponin I expression in rat heart tissue extract.



Troponin I (H-170): sc-15368. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**A**). Immunofluorescence staining of methanol-fixed A-10 cells showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Hallhuber, M., et al. 2006. Inhibition of nuclear import of calcineurin prevents myocardial hypertrophy. Circ. Res. 99: 626-635.
2. Rahimov, F., et al. 2011. Gene expression profiling of skeletal muscles treated with a soluble activin type IIB receptor. Physiol. Genomics 43: 398-407.
3. Wu, B., et al. 2012. Endocardial cells form the coronary arteries by angiogenesis through myocardial-endocardial VEGF signaling. Cell 151: 1083-1096.
4. Bax, N.A., et al. 2012. Matrix production and remodeling capacity of cardiomyocyte progenitor cells during *in vitro* differentiation. J. Mol. Cell. Cardiol. 53: 497-508.
5. Liu, S.J. 2013. Characterization of functional capacity of adult ventricular myocytes in long-term culture. Int. J. Cardiol. 168: 1923-1936.
6. Köhler, D., et al. 2013. The uncoordinated-5 homolog B (UNC5B) receptor increases myocardial ischemia-reperfusion injury. PLoS ONE 8: e69477.
7. Scharf, M., et al. 2013. Mitogen-activated protein kinase-activated protein kinases 2 and 3 regulate SERCA2a expression and fiber type composition to modulate skeletal muscle and cardiomyocyte function. Mol. Cell. Biol. 33: 2586-2602.
8. Xue, C., et al. 2015. Angiotensin II promotes differentiation of mouse c-kit-positive cardiac stem cells into pacemaker-like cells. Mol. Med. Rep. 11: 3249-3258.