SANTA CRUZ BIOTECHNOLOGY, INC.

# Troponin T-C (1F2): sc-52284

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. Katrukha, A.G., et al. 1997. Troponin I is released in bloodstream of patients with acute myocardial infarction not in free form but as complex. Clin. Chem. 43: 1379-1385.
2. Wu, A.H., et al. 1998. Characterization of cardiac troponin subunit release into serum after acute myocardial infarction and comparison of assays for Troponin T and I. American association for clinical chemistry subcommittee on cTnI standardization. Clin. Chem. 44: 1198-1208.
3. Labugger, R., et al. 2000. Extensive Troponin I and T modification detected in serum from patients with acute myocardial infarction. Circulation 102: 1221-1226.
4. Hamm, C.W. 2001. Acute coronary syndromes. The diagnostic role of troponins. Thromb. Res. 1: 63-69.
5. Sarko, J. and Pollack, C.V. 2002. Cardiac troponins. J. Emerg. Med. 23: 57-65.
6. Gomes, A.V., et al. 2003. The role of troponins in muscle contraction. IUBMB Life 54: 323-333.
7. LocusLink Report (LocusID: 7139). http://www.ncbi.nlm.nih.gov/LocusLink/


## CHROMOSOMAL LOCATION

Genetic locus: TNNT2 (human) mapping to 1q32.1.

## SOURCE

Troponin T-C (1F2) is a mouse monoclonal antibody raised against an epitope mapping to amino acids 60-70 of full length Troponin T-C of bovine origin.

## PRODUCT

Each vial contains 100 µg $IgG_1$ 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 T-C (1F2) is recommended for detection of cardiac muscle Troponin T of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

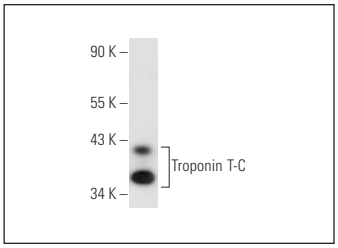
Troponin T-C (1F2) is also recommended for detection of cardiac muscle Troponin T in additional species, including bovine, feline and canine.

Suitable for use as control antibody for Troponin T-C siRNA (h): sc-36740, Troponin T-C shRNA Plasmid (h): sc-36740-SH and Troponin T-C shRNA (h) Lentiviral Particles: sc-36740-V.

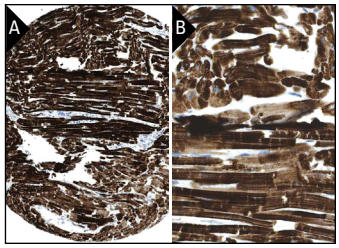
Molecular Weight of Troponin T-C: 39 kDa.

Positive Controls: human heart extract: sc-363763.

## DATA




Troponin T-C (1F2): sc-52284. Western blot analysis of Troponin T-C expression in human heart tissue extract.




Troponin T-C (1F2): sc-52284. 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.

## SELECT PRODUCT CITATIONS


1. Koch, L., et al. 2018. Laser bioprinting of human induced pluripotent stem cells-the effect of printing and biomaterials on cell survival, pluripotency, and differentiation. Biofabrication 10: 035005.
2. Fiedler, L.R., et al. 2019. MAP4K4 inhibition promotes survival of human stem cell-derived cardiomyocytes and reduces infarct size *in vivo*. Cell Stem Cell 24: 579-591.


## STORAGE

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

CONJUGATES

See **Troponin T-C (CT3): sc-20025** for Troponin T-C antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.