

Troponin T-C (2G3): sc-33721

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; Tnnt2 (mouse) mapping to 1 E4.

SOURCE

Troponin T-C (2G3) is a mouse monoclonal antibody raised against amino acids 94-180 of cardiac Troponin T of human origin.

PRODUCT

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

APPLICATIONS

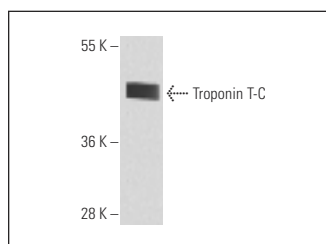
Troponin T-C (2G3) is recommended for detection of cardiac muscle Troponin T of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Troponin T-C siRNA (h): sc-36740, Troponin T-C siRNA (m): sc-36741, Troponin T-C shRNA Plasmid (h): sc-36740-SH, Troponin T-C shRNA Plasmid (m): sc-36741-SH, Troponin T-C shRNA (h) Lentiviral Particles: sc-36740-V and Troponin T-C shRNA (m) Lentiviral Particles: sc-36741-V.

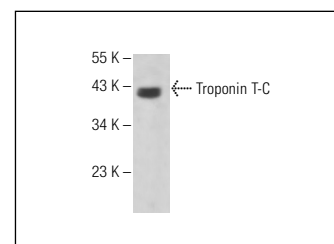
Molecular Weight of Troponin T-C: 39 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188, human heart extract: sc-363763 or rat heart extract: sc-2393.

DATA



Troponin T-C (2G3): sc-33721. Western blot analysis of Troponin T-C expression in human heart tissue extract.



Troponin T-C (2G3): sc-33721. Western blot analysis of cardiac Troponin T expression in rat heart tissue extract.

SELECT PRODUCT CITATIONS


1. Kumar, S., et al. 2015. Temperature-dependent postmortem changes in human cardiac Troponin-T (cTnT): an approach in estimation of time since death. *J. Forensic Sci.* 1: S241-S245.
2. Kumar, S., et al. 2015. The effect of elapsed time on cardiac Troponin-T (cTnT) degradation and its relation to postmortem interval in cases of electrocution. *J. Forensic Leg. Med.* 34: 45-49.
3. Rosen, E., et al. 2020. Acute total body ionizing gamma radiation induces long-term adverse effects and immediate changes in cardiac protein oxidative carbonylation in the rat. *PLoS ONE* 15: e0233967.

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.



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.