

Troponin C slow skeletal/cardiac (12G3): sc-52263

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 4 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 2 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., Bereznikova, A.V., Esakova, T.V., Pettersson, K., Lövgren, T., Severina, M.E., Pulkki, K., Vuopio-Pulkki, L.M. and Gusev, N.B. 1997. Troponin I not in free form but as complex. *Clin. Chem.* 43: 1379-1385.
2. Wu, A.H., Feng, Y.J., Moore, R., Apple, F.S., McPherson, P.H., Buechler, K.F. and Bodor, G. 1998. Characterization of cardiac Troponin subunit release into serum of myocardial infarction and comparison of assays for Troponin T and I. *Clin. Chem.* 44: 1198-1208.
3. Labugger, R., Organ, L., Collier, C., Atar, D. and Van Eyk, J.E. 2000. Extensive acute myocardial infarction. *Circulation* 102: 1221-1226.
4. Hamm, CW. 2001. Acute coronary syndromes. The diagnostic role of troponins. *Thromb. Res.* 103: 63-69.
5. Sarko, J. and Pollack, C.V. 2002. Cardiac troponins. *J. Emerg. Med.* 23: 57-65.
6. Gomes, A.V., Potter, J.D. and Szczesna-Cordary, D. 2003. The role of troponins in muscle contraction. *IUBMB life* 54: 323-333.
7. Bell, M.G., Lankford, E.B., Gonye, G.E., Ellis-Davies, G.C., Martyn, D.A., Regnier, M. and Barsotti, R.J. 2005. Kinetics of cardiac thin-filament activation probed by fluorescence polarization of rhodamine-labeled troponin C in skinned guinea pig trabeculae. *Biophys. J.* 90: 531-543.

CHROMOSOMAL LOCATION

Genetic locus: TNNC1 (human) mapping to 3p21.1

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.

SOURCE

Troponin C slow skeletal/cardiac (12G3) is a mouse monoclonal antibody raised against cardiac Troponin C 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

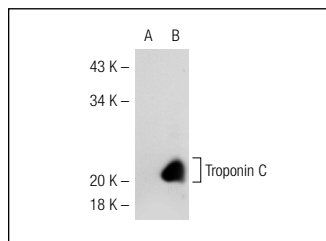
Troponin C slow skeletal/cardiac (12G3) is recommended for detection of Troponin C slow skeletal/cardiac of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Troponin C slow skeletal/cardiac siRNA (h): sc-61724, and Troponin C slow skeletal/cardiac shRNA (h) Lentiviral Particles: sc-61724-V.

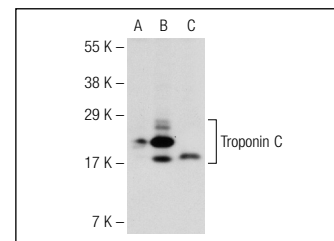
Molecular Weight of Troponin C slow skeletal/cardiac: 18 kDa.

Positive Controls: Troponin C (h2): 293T Lysate: sc-159687, Troponin C (h): 293T Lysate: sc-114682, HeLa whole cell lysate: sc-2200.

DATA



Troponin C slow skeletal/cardiac (12G3): sc-52263. 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 slow skeletal/cardiac (12G3): sc-52263. Western blot analysis of Troponin C expression in non-transfected 293T: sc-117752 (A), human Troponin C transfected 293T: sc-159687 (B) and SJRH30 (C) whole cell lysates.

RESEARCH USE

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