

# Troponin C fast skeletal (E-7): sc-48347

## 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. and Leiden, J.M. 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.

## CHROMOSOMAL LOCATION

Genetic locus: TNNC2 (human) mapping to 20q13.12; Tnnc2 (mouse) mapping to 2 H3.

## SOURCE

Troponin C fast skeletal (E-7) is a mouse monoclonal antibody raised against amino acids 51-160 of Troponin C of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Troponin C fast skeletal (E-7) is available conjugated to agarose (sc-48347 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-48347 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48347 PE), fluorescein (sc-48347 FITC), Alexa Fluor® 488 (sc-48347 AF488), Alexa Fluor® 546 (sc-48347 AF546), Alexa Fluor® 594 (sc-48347 AF594) or Alexa Fluor® 647 (sc-48347 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-48347 AF680) or Alexa Fluor® 790 (sc-48347 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

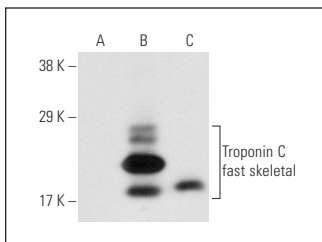
Troponin C fast skeletal (E-7) is recommended for detection of fast skeletal isoform of Troponin C of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:10000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (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).

Suitable for use as control antibody for Troponin C fast skeletal siRNA (h): sc-36736, Troponin C fast skeletal siRNA (m): sc-36737, Troponin C fast skeletal shRNA Plasmid (h): sc-36736-SH, Troponin C fast skeletal shRNA Plasmid (m): sc-36737-SH, Troponin C fast skeletal shRNA (h) Lentiviral Particles: sc-36736-V and Troponin C fast skeletal shRNA (m) Lentiviral Particles: sc-36737-V.

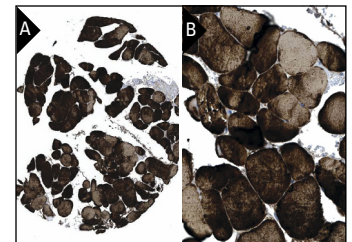
Molecular Weight of Troponin C fast skeletal: 18 kDa.

Positive Controls: Troponin C (h2): 293T Lysate: sc-159687, rat skeletal muscle extract: sc-364810 or SJRH30 cell lysate: sc-2287.

## DATA



Troponin C fast skeletal (E-7): sc-48347. Western blot analysis of Troponin C fast skeletal expression in non-transfected 293T: sc-117752 (A), human Troponin C fast skeletal transfected 293T: sc-159867 (B) and SJRH30 (C) whole cell lysates.



Troponin C fast skeletal (E-7): sc-48347. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal 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. Yuan, F.P., et al. 2010. The role of RXFP2 in mediating androgen-induced inguinoscrotal testis descent in LH receptor knockout mice. *Reproduction* 139: 759-769.
2. Bollen, I.A.E., et al. 2017. Genotype-specific pathogenic effects in human dilated cardiomyopathy. *J. Physiol.* 595: 4677-4693.
3. Lee, J.Y., et al. 2020. Muscle-derived lumican stimulates bone formation via Integrin  $\alpha 2 \beta 1$  and the downstream ERK signal. *Front. Cell Dev. Biol.* 8: 565826.
4. Martin, A.A., et al. 2022. Sarcomere dynamics revealed by a myofibril integrated FRET-based biosensor in live skeletal muscle fibers. *Sci. Rep.* 12: 18116.

## RESEARCH USE

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