

Troponin T-SS (A-9): sc-365014



The Power to Question

BACKGROUND

Actin is a highly conserved protein that is expressed in all eukaryotic cells and interacts with Myosin 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 three Troponin T (the link to the muscle thin filament) proteins, one of which functions as a Tropomyosin-binding protein and is known as Troponin T-SS (Troponin T-Slow Skeletal). Defects in the gene encoding Troponin T-SS are the cause of nemaline myopathy type 5 (NEM5), a form of nemaline myopathy characterized by mild contractures of the shoulders and hips, tremors and respiratory problems that often lead to death. Troponin T-SS is expressed as three isoforms due to alternative splicing events.

REFERENCES

1. Stefancsik, R., et al. 1998. Identification and mutagenesis of a highly conserved domain in Troponin T responsible for Troponin I binding: potential role for coiled coil interaction. *Proc. Natl. Acad. Sci. USA* 95: 957-962.
2. Mukherjee, P., et al. 1999. Altered regulatory function of two familial hypertrophic cardiomyopathy Troponin T mutants. *Biochemistry* 38: 13296-13301.
3. Barton, P.J., et al. 1999. Close physical linkage of human Troponin genes: organization, sequence, and expression of the locus encoding cardiac Troponin I and slow skeletal Troponin T. *Genomics* 57: 102-109.
4. Yuasa, K., et al. 1999. A novel interaction of cGMP-dependent protein kinase I with Troponin T. *J. Biol. Chem.* 274: 37429-37434.

CHROMOSOMAL LOCATION

Genetic locus: TNNT1 (human) mapping to 19q13.42; Tnnt1 (mouse) mapping to 7 A1.

SOURCE

Troponin T-SS (A-9) is a mouse monoclonal antibody raised against amino acids 181-235 of Troponin T-SS of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Troponin T-SS (A-9) is available conjugated to agarose (sc-365014 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365014 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365014 PE), fluorescein (sc-365014 FITC), Alexa Fluor® 488 (sc-365014 AF488), Alexa Fluor® 546 (sc-365014 AF546), Alexa Fluor® 594 (sc-365014 AF594) or Alexa Fluor® 647 (sc-365014 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365014 AF680) or Alexa Fluor® 790 (sc-365014 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

Troponin T-SS (A-9) is recommended for detection of Troponin T-SS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

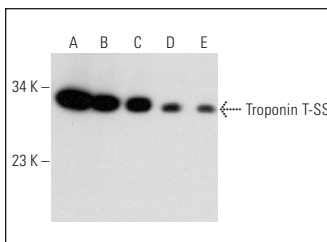
Suitable for use as control antibody for Troponin T-SS siRNA (h): sc-43251, Troponin T-SS siRNA (m): sc-43252, Troponin T-SS shRNA Plasmid (h): sc-43251-SH, Troponin T-SS shRNA Plasmid (m): sc-43252-SH, Troponin T-SS shRNA (h) Lentiviral Particles: sc-43251-V and Troponin T-SS shRNA (m) Lentiviral Particles: sc-43252-V.

Positive Controls: Jurkat whole cell lysate: sc-2204, COLO 320DM cell lysate: sc-2226 or HEK293 whole cell lysate: sc-45136.

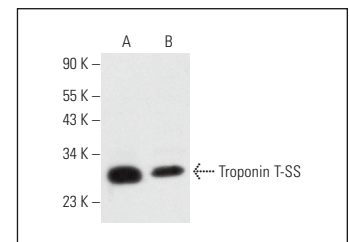
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BPFITC: sc-516140 or m-IgGκ BPE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Troponin T-SS (A-9): sc-365014. Western blot analysis of Troponin T-SS expression in Jurkat (A), COLO 320DM (B), PANC-1 (C), C2C12 (D) and Sol8 (E) whole cell lysates.



Troponin T-SS (A-9): sc-365014. Western blot analysis of Troponin T-SS expression in Jurkat (A) and HEK293 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Huang, S.C., et al. 2023. Slow skeletal muscle Troponin T acts as a potential prognostic biomarker and therapeutic target for hepatocellular carcinoma. *Gene* 865: 147331.

STORAGE

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

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA