

Troponin I-SS (A-12): sc-393330

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.

CHROMOSOMAL LOCATION

Genetic locus: TNNI1 (human) mapping to 1q32.1; Tnni1 (mouse) mapping to 1 E4.

SOURCE

Troponin I-SS (A-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 38-58 near the N-terminus of Troponin I-SS of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393330 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Troponin I-SS (A-12) is recommended for detection of Troponin I-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), 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 I-SS siRNA (h): sc-37035, Troponin I-SS siRNA (m): sc-37036, Troponin I-SS shRNA Plasmid (h): sc-37035-SH, Troponin I-SS shRNA Plasmid (m): sc-37036-SH, Troponin I-SS shRNA (h) Lentiviral Particles: sc-37035-V and Troponin I-SS shRNA (m) Lentiviral Particles: sc-37036-V.

Molecular Weight (predicted) of Troponin I-SS: 22 kDa.

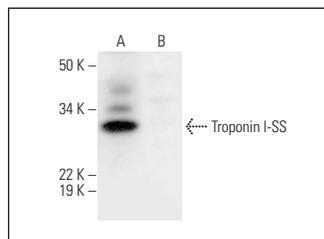
Molecular Weight (observed) of Troponin I-SS: 23-28 kDa.

Positive Controls: human skeletal muscle extract: sc-363776.

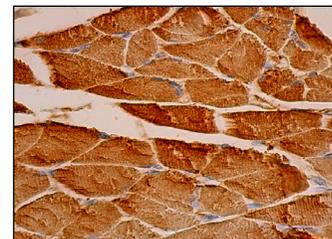
STORAGE

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

DATA



Troponin I-SS (A-12): sc-393330. Western blot analysis of Troponin I-SS expression in human skeletal muscle (A) and human heart (B) tissue extracts. Note lack of reactivity with the cardiac form of human Troponin I in lane B.



Troponin I-SS (A-12): sc-393330. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Xu, M., et al. 2018. MicroRNA-499-5p regulates skeletal myofiber specification via NFATc1/MEF2C pathway and Thrap1/MEF2C axis. *Life Sci.* 215: 236-245.
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- Chen, X., et al. 2021. Quercetin regulates skeletal muscle fiber type switching via adiponectin signaling. *Food Funct.* 12: 2693-2702.
- Wang, Y., et al. 2021. Effects of dietary ferulic acid supplementation on growth performance and skeletal muscle fiber type conversion in weaned piglets. *J. Sci. Food Agric.* 101: 5116-5123.
- Xue, Y., et al. 2021. Naringin induces skeletal muscle fiber type transformation via AMPK/PGC-1 α signaling pathway in mice and C2C12 myotubes. *Nutr. Res.* 92: 99-108.
- Chen, X., et al. 2021. Effect of dietary L-theanine supplementation on skeletal muscle fiber type transformation *in vivo*. *J. Nutr. Biochem.* 99: 108859.
- Xiang, L., et al. 2022. Leucine regulates porcine muscle fiber type transformation via adiponectin signaling pathway. *Anim. Biotechnol.* 33: 330-338.
- Chen, X., et al. 2022. Effect of dietary leucine supplementation on skeletal muscle fiber type transformation in weaning piglets. *Anim. Biotechnol.* 33: 546-554.
- Dai, H., et al. 2022. Effects of dietary L-theanine supplementation on pork quality and muscle fiber type transformation in finishing pigs. *J. Sci. Food Agric.* E-published.

RESEARCH USE

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