

Titin (E-4): sc-271945

BACKGROUND

Titin, also known as connectin, is a large protein involved in the temporal and spatial control of the assembly of the highly ordered sarcomeres (contractile units) of striated muscle. In addition to sarcomere assembly Titin also functions to maintain the structural integrity of the contracting myofibrils within the muscle and to organize the machinery for condensation of chromosomes in dividing cells. Titin is a giant protein composed of 27,000 amino acids and contains an autoregulated serine kinase catalytic domain as well as a calcium/calmodulin binding region that are involved in its activation. Activated Titin phosphorylates the muscle protein telethonin, a sarcomeric protein abundant in heart and skeletal muscle, implicating Titin activity in the reorganization of the cytoskeleton during myofibrillogenesis.

REFERENCES

1. Trinick, J. 1996. Titin as a scaffold and spring. *Cytoskeleton. Curr. Biol.* 6: 258-260.
2. Valle, G., et al. 1997. Telethonin, a novel sarcomeric protein of heart and skeletal muscle. *FEBS Lett.* 415: 163-168.
3. Means, A.R. 1998. The clash in Titin. *Nature* 395: 846-847.
4. Mayans, O., et al. 1998. Structural basis for activation of the Titin kinase domain during myofibrillogenesis. *Nature* 395: 863-869.
5. Gregorio, C.C., et al. 1999. Muscle assembly: a titanic achievement? *Curr. Opin. Cell Biol.* 11: 18-25.

CHROMOSOMAL LOCATION

Genetic locus: TTN (human) mapping to 2q31.2; Ttn (mouse) mapping to 2 C3.

SOURCE

Titin (E-4) is a mouse monoclonal antibody raised against amino acids 33124-33423 mapping at the C-terminus of Titin of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Titin (E-4) is recommended for detection of Titin 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 Titin siRNA (h): sc-43463, Titin siRNA (m): sc-154286, Titin shRNA Plasmid (h): sc-43463-SH, Titin shRNA Plasmid (m): sc-154286-SH, Titin shRNA (h) Lentiviral Particles: sc-43463-V and Titin shRNA (m) Lentiviral Particles: sc-154286-V.

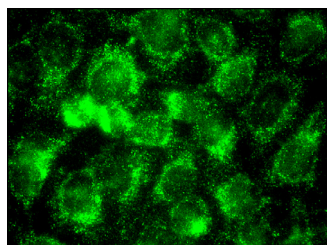
Molecular Weight of Titin: 3000 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (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 BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Titin (E-4): sc-271945. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Ceyhan-Birsoy, O., et al. 2013. Recessive truncating Titin gene, TTN, mutations presenting as centronuclear myopathy. *Neurology* 81: 1205-1214.
2. Durak, A., et al. 2020. Titin and CK2α are new intracellular targets in acute Insulin application-associated benefits on electrophysiological parameters of left ventricular cardiomyocytes from Insulin-resistant metabolic syndrome rats. *Cardiovasc. Drugs Ther.* 34: 487-501.
3. Huang, W., et al. 2020. Effects of cyclosporine A on proliferation, invasion and migration of HTR-8/SVneo human extravillous trophoblasts. *Biochem. Biophys. Res. Commun.* 533: 645-650.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.