SANTA CRUZ BIOTECHNOLOGY, INC.

Titin (G-H5): sc-100959

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 as well as organizing 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.
6. Trinick, J. et al. 1999. Titin: a molecular control freak. Trends Cell. Biol. 9: 377-380.
7. Niederlander, N., et al. 2004. Regulation of the Actin-Myosin interaction by Titin. Eur. J. Biochem. 271: 4572-4581.
8. Fukuda, N., et al. 2005. Phosphorylation of Titin modulates passive stiffness of cardiac muscle in a Titin isoform-dependent manner. J. Gen. Physiol. 125: 257-271.
9. Harris, B.N., et al. 2005. Calcium transients regulate Titin organization during myofibrillogenesis. Cell Motil. Cytoskeleton 60: 129-139.

CHROMOSOMAL LOCATION

Genetic locus: TTN (human) mapping to 2q31.2.

SOURCE

Titin (G-H5) is a mouse monoclonal antibody raised against recombinant Titin of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Titin (G-H5) is recommended for detection of Titin of human origin by 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 Titin siRNA (h): sc-43463, Titin shRNA Plasmid (h): sc-43463-SH and Titin shRNA (h) Lentiviral Particles: sc-43463-V.

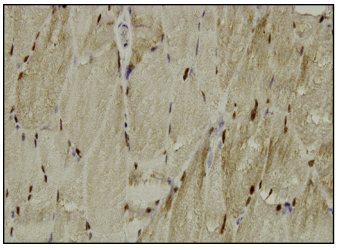
Molecular Weight of Titin: 3000 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) 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 (G-H5): sc-100959. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human skeletal muscle tissue showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yoshida, M., et al. 2010. Weaving hypothesis of cardiomyocyte sarcomeres: discovery of periodic broadening and narrowing of intercalated disk during volume-load change. Am. J. Pathol. 176: 660-678.

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.