SANTA CRUZ BIOTECHNOLOGY, INC.

Sarcalumenin (XIIC4): sc-58845

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Muscle contraction is activated by the release of calcium from the sarcoplasmic reticulum (SR), and muscle relaxation is triggered by a rapid re-uptake of calcium from the cytosol into the lumen of the SR. Sarcalumenin is a glycoprotein expressed in the longitudinal tubules in the lumen of the sarcoplasmic reticulum (SR) in striated muscle cells, and it associates with the inner side of the SR membranes through calcium bridges. Endogenous casein kinase II may regulate its function via phosphorylation of Sarcalumenin. Sarcalumenin binds to calcium and helps to sequester it in the nonjunctional regions of the sarcoplasmic reticulum. Sarcalumenin also improves upon the condition of calcium pump proteins. Basic mammalian muscle functions do not require a functional Sarcalumenin, but loss of this protein causes slowed contraction and relaxation.

CHROMOSOMAL LOCATION

Genetic locus: SRL (human) mapping to 16p13.3; Srl (mouse) mapping to 16 A1.

SOURCE

Sarcalumenin (XIIC4) is a mouse monoclonal antibody raised against purified Sarcalumenin of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sarcalumenin (XIIC4) is available conjugated to agarose (sc-58845 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-58845 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58845 PE), fluorescein (sc-58845 FITC), Alexa Fluor® 488 (sc-58845 AF488), Alexa Fluor® 546 (sc-58845 AF546), Alexa Fluor® 594 (sc-58845 AF594) or Alexa Fluor® 647 (sc-58845 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-58845 AF680) or Alexa Fluor® 790 (sc-58845 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Sarcalumenin (XIIC4) is recommended for detection of Sarcalumenin and the 53 kDa glycoprotein splice variant of mouse, rat, human, rabbit and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Sarcalumenin siRNA (h): sc-93132, Sarcalumenin siRNA (m): sc-63354, Sarcalumenin shRNA Plasmid (h): sc-93132-SH, Sarcalumenin shRNA Plasmid (m): sc-63354-SH, Sarcalumenin shRNA (h) Lentiviral Particles: sc-93132-V and Sarcalumenin shRNA (m) Lentiviral Particles: sc-63354-V.

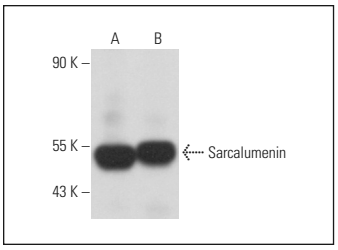
Molecular Weight of Sarcalumenin: 150 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810, human skeletal muscle extract: sc-363776 or human heart extract: sc-363763.

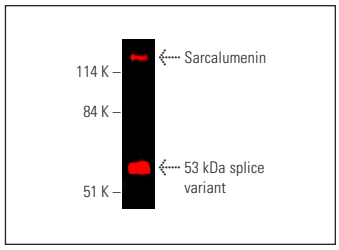
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Sarcalumenin (XIIC4): sc-58845. Western blot analysis of Sarcalumenin expression in human skeletal muscle (**A**) and human heart (**B**) tissue extracts.



Sarcalumenin (XIIC4): sc-58845. Near-infrared western blot analysis of Sarcalumenin expression in human skeletal muscle tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

1. Staunton, L. and Ohlendieck, K. 2012. Mass spectrometric characterization of the sarcoplasmic reticulum from rabbit skeletal muscle by on-membrane digestion. Protein Pept. Lett. 19: 252-263.
2. Picard, B., et al. 2016. Calcium homeostasis and muscle energy metabolism are modified in HspB1-Null mice. Proteomes 4: 17.
3. Eshima, H. et al. 2019. Dysfunction of muscle contraction with impaired intracellular Ca^{2+} handling in skeletal muscle and the effect of exercise training in male db/db mice. J. Appl. Physiol. 126: 170-182.
4. Eshima, H., et al. 2020. A chronic high-fat diet exacerbates contractile dysfunction with impaired intracellular Ca^{2+} release capacity in the skeletal muscle of aged mice. J. Appl. Physiol. 128: 1153-1162.

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.