SANTA CRUZ BIOTECHNOLOGY, INC.

calsequestrin 2 (C-16): sc-16576

The Power to Question

BACKGROUND

Calsequestrin (CS), also known as CSQ, is the major calcium-binding protein of cardiac and skeletal muscle whose function is to sequester calcium in the lumen of the sarcoplasmic reticulum (SR). In mammals, there are two forms of this protein, calsequestrin 1 and calsequestrin 2, which encode fast-twitch skeletal muscle and cardiac calsequestrin, respectively. The form of calsequestrin 1, known as Calmitin, is located in the terminal cisternae luminal spaces of the SR of fast skeletal muscle cells. Calsequestrin 2 is present in the terminal cisternae luminal spaces of the SR in both cardiac and slow skeletal muscle cells. In addition, calsequestrin regulates the ryanodine receptor signalling (RyR) through Triadin and Junctin.

REFERENCES

1. Barker, P.A., et al. 1988. An improved method for the isolation of rat cardiac sarcoplasmic reticulum. Mol. Cell. Biochem. 84: 87-95.
2. Gunji, K., et al. 1999. A 63 kDa skeletal muscle protein associated with eye muscle inflammation in Graves' disease is identified as the calcium binding protein calsequestrin. Autoimmunity 29: 1-9.
3. Shutova, A.N., et al. 1999. Comparative characteristics of sarcoplasmic reticulum preparations from skeletal muscles of the ground squirrel *Spermophilus undulatus*, rats, and rabbits. Biochemistry 64: 1250-1257.
4. Cho, J.H., et al. 2000. Calsequestrin, a calcium sequestering protein localized at the sarcoplasmic reticulum, is not essential for body-wall muscle function in *Caenorhabditis elegans*. J. Cell Sci. 113: 3947-3958.
5. Nori, A., et al. 2000. Site-directed mutagenesis and deletion of three phosphorylation sites of calsequestrin of skeletal muscle sarcoplasmic reticulum. Effects on intracellular targeting. Exp. Cell Res. 260: 40-49.

CHROMOSOMAL LOCATION

Genetic locus: CASQ2 (human) mapping to 1p13.1; Casq2 (mouse) mapping to 3 F2.2.

SOURCE

calsequestrin 2 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of calsequestrin 2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16576 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

calsequestrin 2 (C-16) is recommended for detection of calsequestrin 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

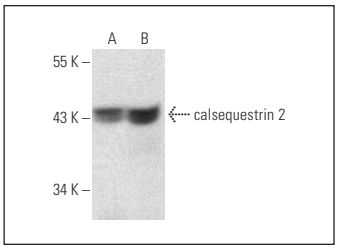
calsequestrin 2 (C-16) is also recommended for detection of calsequestrin 2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for calsequestrin 2 siRNA (h): sc-43277, calsequestrin 2 siRNA (m): sc-43278, calsequestrin 2 siRNA (r): sc-60078, calsequestrin 2 shRNA Plasmid (h): sc-43277-SH, calsequestrin 2 shRNA Plasmid (m): sc-43278-SH, calsequestrin 2 shRNA Plasmid (r): sc-60078-SH, calsequestrin 2 shRNA (h) Lentiviral Particles: sc-43277-V, calsequestrin 2 shRNA (m) Lentiviral Particles: sc-43278-V and calsequestrin 2 shRNA (r) Lentiviral Particles: sc-60078-V.

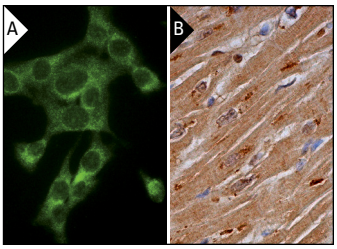
Molecular Weight of calsequestrin 2: 40-46 kDa.

Positive Controls: rat heart extract: sc-2393 or mouse heart extract: sc-2254.

DATA



calsequestrin 2 (C-16): sc-16576. Western blot analysis of calsequestrin 2 expression in mouse heart (**A**) and rat heart (**B**) tissue extracts.



calsequestrin 2 (C-16): sc-16576. Immunofluorescence staining of methanol-fixed Sol8 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Zhu, Z., et al. 2012. Potential regulatory role of calsequestrin in platelet Ca^{2+} homeostasis and its association with platelet hyperactivity in diabetes mellitus. J. Thromb. Haemost. 10: 116-124.
2. Wang, L., et al. 2015. Retrograde regulation of STIM1-Orai1 interaction and store-operated Ca^{2+} entry by calsequestrin. Sci. Rep. 5: 11349.