

# calsequestrin 1 (51): sc-135854

## 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. Calsequestrin 1, also known as calmitin, is located in the terminal cisternae luminal spaces of the SR of fast skeletal muscle cells. Calsequestrin 2 is present in terminal cisternae luminal spaces of the SR of both cardiac and slow skeletal muscle cells. In addition, calsequestrin regulates the ryanodine receptor signaling (RyR) through Triadin and Juncin.

## REFERENCES

- Barker, P.A., et al. 1988. An improved method for the isolation of rat cardiac sarcoplasmic reticulum. *Mol. Cell. Biochem.* 84: 87-95.
- 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.
- 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.
- 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.
- 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.
- Shin, D.W., et al. 2000. The asp-rich region at the carboxyl-terminus of calsequestrin binds to Ca<sup>2+</sup> and interacts with Triadin. *FEBS Lett.* 486: 178-182.
- Nori, A., et al. 2001. Targeting of calsequestrin to the sarcoplasmic reticulum of skeletal muscle upon deletion of its glycosylation site. *Exp. Cell Res.* 265: 104-113.

## CHROMOSOMAL LOCATION

Genetic locus: Casq1 (mouse) mapping to 1 H3.

## SOURCE

calsequestrin 1 (51) is a mouse monoclonal antibody raised against amino acids 282-389 of calsequestrin 1 of mouse origin.

## PRODUCT

Each vial contains 50 µg IgG<sub>1</sub> in 0.5 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

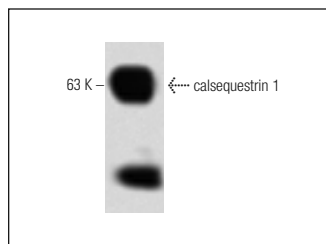
calsequestrin 1 (51) is recommended for detection of calsequestrin 1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for calsequestrin 1 siRNA (m): sc-43276, calsequestrin 1 shRNA Plasmid (m): sc-43276-SH and calsequestrin 1 shRNA (m) Lentiviral Particles: sc-43276-V.

Molecular Weight of calsequestrin 1: 63 kDa.

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

## DATA



calsequestrin 1 (51): sc-135854. Western blot analysis of calsequestrin 1 expression in rat muscle tissue extract.

## SELECT PRODUCT CITATIONS

- Sun, L., et al. 2018. Gut microbiota and intestinal FXR mediate the clinical benefits of metformin. *Nat. Med.* 24: 1919-1929.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.