

Mg29 (N-15): sc-23439

BACKGROUND

Excitation-contraction (E-C) coupling in skeletal muscle is characterized by the conversion of the depolarization signal of the invaginated surface membrane, called the transverse (T-) tubule, to calcium release from the sarcoplasmic reticulum (SR). This process occurs at the junctional complex between the T-tubule and SR, designated the triad junction. Mitsugumin29 (Mg29), a novel member of the synaptophysin family, is an essential component of the triad junction. It is abundantly expressed in skeletal muscle and is also expressed at lower levels in kidney, specifically in cytoplasmic regions of the proximal and distal tubule cells. Mg29^{-/-} mice display morphological abnormalities, such as swollen T-tubules, vacuolated SR networks and misalignment of triad junctions. Deletion of Mg29 is also associated with increased susceptibility of muscle to fatigue following stimulation. Therefore, Mg29 is critical for both refinement of the membrane structures and effective E-C coupling in skeletal muscle triad junctions.

REFERENCES

1. Takeshima, H., et al. 1998. Mitsugumin29, a novel synaptophysin family member from the triad junction in skeletal muscle. *Biochem. J.* 331: 317-322.
2. Shimuta, M., et al. 1998. Structure and expression of Mitsugumin29 gene. *FEBS Lett.* 431: 263-267.
3. Nishi, M., et al. 1999. Abnormal features in skeletal muscle from mice lacking Mitsugumin29. *J. Cell Biol.* 147: 1473-1480.
4. Komazaki, S., et al. 1999. Immunolocalization of Mitsugumin29 in developing skeletal muscle and effects of the protein expressed in amphibian embryonic cells. *Dev. Dyn.* 215: 87-95.
5. Nagaraj, R.Y., et al. 2000. Increased susceptibility to fatigue of slow- and fast-twitch muscles from mice lacking the Mg29 gene. *Physiol. Genomics* 4: 43-49.
6. Komazaki, S., et al. 2001. Abnormal formation of sarcoplasmic reticulum networks and triads during early development of skeletal muscle cells in Mitsugumin29-deficient mice. *Dev. Growth Differ.* 43: 717-723.
7. Pan, Z., et al. 2002. Dysfunction of store-operated calcium channel in muscle cells lacking Mg29. *Nat. Cell Biol.* 4: 379-383.

CHROMOSOMAL LOCATION

Genetic locus: SYPL2 (human) mapping to 1p13.3; Sypl2 (mouse) mapping to 3 F2.3.

SOURCE

Mg29 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Mg29 of mouse 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-23439 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Mg29 (N-15) is recommended for detection of mitsugumin29 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Mg29 (N-15) is also recommended for detection of mitsugumin 29 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Mg29 siRNA (h): sc-40744, Mg29 siRNA (m): sc-40745, Mg29 shRNA Plasmid (h): sc-40744-SH, Mg29 shRNA Plasmid (m): sc-40745-SH, Mg29 shRNA (h) Lentiviral Particles: sc-40744-V and Mg29 shRNA (m) Lentiviral Particles: sc-40745-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.