

# Mitsugumin23 (S-15): sc-138992

## BACKGROUND

With approximately 135 million base pairs and 1,400 genes, chromosome 11 makes up around 4% of human genomic DNA and is considered a gene and disease association dense chromosome. Defects in chromosome 11 have been linked to many diseases, including Wilms' tumors, WAGR syndrome, and Denys-Drash syndrome, sickle cell anemia and  $\beta$  thalassemia. On chromosome 11q12.2 is a gene encoding Mitsugumin23. Mitsugumin23 (Mg23), also known as transmembrane protein 109 (TMEM109), is a 243 amino acid multi-pass transmembrane protein localized to the membrane of the nucleus, endoplasmic reticulum and sarcoplasmic reticulum. It is comprised of two primary domains: a 33 amino acid signal peptide and a 109 amino acid chain consisting of 4 transmembrane domains.

## REFERENCES

1. Brandt, N.R., et al. 1999. Localization of mitsugumin 29 to transverse tubules in rabbit skeletal muscle. *Arch. Biochem. Biophys.* 371: 348-350.
2. 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.
3. Brandt, N.R., et al. 2001. The role of mitsugumin 29 in transverse tubules of rabbit skeletal muscle. *Arch. Biochem. Biophys.* 385: 406-409.
4. Pan, Z., et al. 2002. Dysfunction of store-operated calcium channel in muscle cells lacking mg29. *Nat. Cell Biol.* 4: 379-383.
5. Brotto, M.A., et al. 2004. Defective maintenance of intracellular  $Ca^{2+}$  homeostasis is linked to increased muscle fatigability in the MG29 null mice. *Cell Res.* 14: 373-378.
6. Pan, Z., et al. 2004. Co-expression of MG29 and ryanodine receptor leads to apoptotic cell death: effect mediated by intracellular  $Ca^{2+}$  release. *J. Biol. Chem.* 279: 19387-19390.
7. Weisleder, N., et al. 2006. Muscle aging is associated with compromised  $Ca^{2+}$  spark signaling and segregated intracellular  $Ca^{2+}$  release. *J. Cell Biol.* 174: 639-645.

## CHROMOSOMAL LOCATION

Genetic locus: TMEM109 (human) mapping to 11q12.2; Tmem109 (mouse) mapping to 19 A.

## SOURCE

Mitsugumin23 (S-15) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of Mitsugumin23 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-138992 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Mitsugumin23 (S-15) is recommended for detection of Mitsugumin23 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Mitsugumin23 (S-15) is also recommended for detection of Mitsugumin23 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Mitsugumin23 siRNA (h): sc-96448, Mitsugumin23 siRNA (m): sc-149451, Mitsugumin23 shRNA Plasmid (h): sc-96448-SH, Mitsugumin23 shRNA Plasmid (m): sc-149451-SH, Mitsugumin23 shRNA (h) Lentiviral Particles: sc-96448-V and Mitsugumin23 shRNA (m) Lentiviral Particles: sc-149451-V.

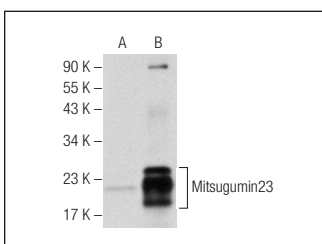
Molecular Weight of Mitsugumin23: 23 kDa.

Positive Controls: Mitsugumin23 (m): 293T Lysate: sc-121674 or Jurkat whole cell lysate: sc-2204.

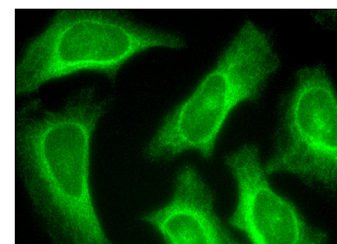
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## DATA



Mitsugumin23 (S-15): sc-138992. Western blot analysis of Mitsugumin23 expression in non-transfected: sc-117752 (A) and mouse Mitsugumin23 transfected: sc-121674 (B) 293T whole cell lysates.



Mitsugumin23 (S-15): sc-138992. Immunofluorescence staining of methanol-fixed HeLa cells showing perinuclear and cytoplasmic localization.

## 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.