

# L-type Ca<sup>++</sup> CP $\gamma$ 1 (D-13): sc-107673

## BACKGROUND

Voltage-dependent calcium channels are essential for the release of neurotransmitters. L-type (long lasting current) voltage-dependent calcium channels are composed of four subunits: an  $\alpha$ 1 subunit, a  $\beta$  subunit, a  $\gamma$  subunit and an  $\alpha$ 2 $\delta$  subunit. The  $\beta$  subunit is encoded by four genes, designated  $\beta$ 1- $\beta$ 4, all of which contribute to the diversity of calcium currents and are involved in membrane trafficking of the  $\alpha$ 1 subunit. L-type Ca<sup>++</sup> CP  $\gamma$ 1, also known as CACNLG or CACNG1, is a 222 amino acid multi-pass membrane protein belonging to the PMP-22/EMP/MP20 family. Expressed in skeletal muscle, L-type Ca<sup>++</sup> CP  $\gamma$ 1 is a subunit of the dihydropyridine (DHP) sensitive calcium channel and may play a role in excitation-contraction coupling. L-type Ca<sup>++</sup> CP  $\gamma$ 1 is considered a novel marker for malignant hyperthermia susceptibility (MHS), an autosomal dominant disorder of skeletal muscle which manifests as a life-threatening hypermetabolic crisis triggered by commonly used inhalation anaesthetics and depolarizing muscle relaxants.

## REFERENCES

1. Iles, D.E., et al. 1993. Localization of the  $\gamma$ -subunit of the skeletal muscle L-type voltage-dependent calcium channel gene (CACNLG) to human chromosome band 17q24 by *in situ* hybridization and identification of a polymorphic repetitive DNA sequence at the gene locus. *Cytogenet. Cell Genet.* 64: 227-230.
2. Iles, D.E., et al. 1993. Genetic mapping of the  $\beta$ 1- and  $\gamma$ -subunits of the human skeletal muscle L-type voltage-dependent calcium channel on chromosome 17q and exclusion as candidate genes for malignant hyperthermia susceptibility. *Hum. Mol. Genet.* 2: 863-868.
3. Powers, P.A., et al. 1993. Molecular characterization of the gene encoding the  $\gamma$  subunit of the human skeletal muscle 1,4-dihydropyridine-sensitive Ca<sup>2+</sup> channel (CACNLG), cDNA sequence, gene structure, and chromosomal location. *J. Biol. Chem.* 268: 9275-9279.
4. Wagner, T., et al. 1997. A somatic cell hybrid panel for distal 17q: GDIA1 maps to 17q25.3. *Cytogenet. Cell Genet.* 76: 172-175.
5. Randall, A.D. 1998. The molecular basis of voltage-gated Ca<sup>2+</sup> channel diversity: is it time for T? *J. Membr. Biol.* 161: 207-213.

## CHROMOSOMAL LOCATION

Genetic locus: CACNG1 (human) mapping to 17q24.2; Cacng1 (mouse) mapping to 11 E1.

## SOURCE

L-type Ca<sup>++</sup> CP  $\gamma$ 1 (D-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of L-type Ca<sup>++</sup> CP  $\gamma$ 1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107673 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

L-type Ca<sup>++</sup> CP  $\gamma$ 1 (D-13) is recommended for detection of L-type Ca<sup>++</sup> CP  $\gamma$ 1 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); non cross-reactive with other L-type Ca<sup>++</sup> CP family members.

L-type Ca<sup>++</sup> CP  $\gamma$ 1 (D-13) is also recommended for detection of L-type Ca<sup>++</sup> CP  $\gamma$ 1 in additional species, including equine and bovine.

Suitable for use as control antibody for L-type Ca<sup>++</sup> CP  $\gamma$ 1 siRNA (h): sc-93870, L-type Ca<sup>++</sup> CP  $\gamma$ 1 siRNA (m): sc-146617, L-type Ca<sup>++</sup> CP  $\gamma$ 1 shRNA Plasmid (h): sc-93870-SH, L-type Ca<sup>++</sup> CP  $\gamma$ 1 shRNA Plasmid (m): sc-146617-SH, L-type Ca<sup>++</sup> CP  $\gamma$ 1 shRNA (h) Lentiviral Particles: sc-93870-V and L-type Ca<sup>++</sup> CP  $\gamma$ 1 shRNA (m) Lentiviral Particles: sc-146617-V.

Molecular Weight of L-type Ca<sup>++</sup> CP  $\gamma$ 1: 25 kDa.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.