

L-type Ca⁺⁺ CP γ 1 (L-22): sc-133717

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 α 1 subunit, a β subunit, a γ subunit and an α 2 δ subunit. The β subunit is encoded by four genes, designated β 1- β 4, all of which contribute to the diversity of calcium currents and are involved in membrane trafficking of the α 1 subunit. L-type Ca⁺⁺ CP γ 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⁺⁺ CP γ 1 is a subunit of the dihydropyridine (DHP) sensitive calcium channel and may play a role in excitation-contraction coupling. L-type Ca⁺⁺ CP γ 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

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- Iles, D.E., et al. 1993. Genetic mapping of the β 1- and γ -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.
- Powers, P.A., et al. 1993. Molecular characterization of the gene encoding the γ subunit of the human skeletal muscle 1,4-dihydropyridine-sensitive Ca²⁺ channel (CACNLG), cDNA sequence, gene structure, and chromosomal location. *J. Biol. Chem.* 268: 9275-9279.
- Wagner, T., et al. 1997. A somatic cell hybrid panel for distal 17q: GDIA1 maps to 17q25.3. *Cytogenet. Cell Genet.* 76: 172-175.
- Randall, A.D. 1998. The molecular basis of voltage-gated Ca⁺⁺ 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⁺⁺ CP γ 1 (L-22) is an affinity purified rabbit polyclonal antibody raised against synthetic L-type Ca⁺⁺ CP γ 1 peptide of human origin.

PRODUCT

Each vial contains 50 μ g IgG in 500 μ l PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

L-type Ca⁺⁺ CP γ 1 (L-22) is recommended for detection of L-type Ca⁺⁺ CP γ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for L-type Ca⁺⁺ CP γ 1 siRNA (h): sc-93870, L-type Ca⁺⁺ CP γ 1 siRNA (m): sc-146617, L-type Ca⁺⁺ CP γ 1 shRNA Plasmid (h): sc-93870-SH, L-type Ca⁺⁺ CP γ 1 shRNA Plasmid (m): sc-146617-SH, L-type Ca⁺⁺ CP γ 1 shRNA (h) Lentiviral Particles: sc-93870-V and L-type Ca⁺⁺ CP γ 1 shRNA (m) Lentiviral Particles: sc-146617-V.

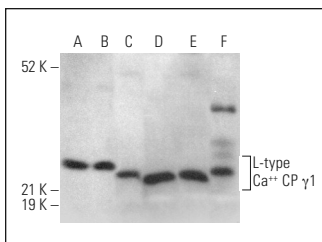
Molecular Weight of L-type Ca⁺⁺ CP γ 1: 25 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

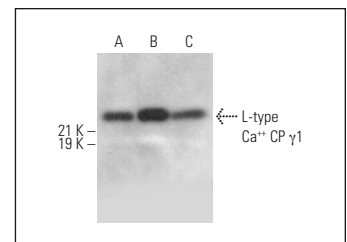
RECOMMENDED SECONDARY REAGENTS

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™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



L-type Ca⁺⁺ CP γ 1 (L-22): sc-133717. Western blot analysis of L-type Ca⁺⁺ CP γ 1 expression in RAW 264.7 (A), PC-12 (B), HeLa (C), K-562 (D) and Jurkat (E) whole cell lysates and mouse liver tissue extract (F).



L-type Ca⁺⁺ CP γ 1 (L-22): sc-133717. Western blot analysis of L-type Ca⁺⁺ CP γ 1 expression in Sol8 (A), SJRH30 (B) and NIH/3T3 (C) whole cell lysates.

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.