SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP γ3 (C-13): sc-164818

BACKGROUND

Voltage-dependent calcium channels are important for the release of neurotransmitters into neurons. L-type (long lasting current) voltage-dependent calcium channels are composed of four subunits: an α1 subunit, a β subunit, a γ subunit and an α2/δ subunit. The γ subunit is made of eight distinct proteins (designated L-type Ca^{++} CP γ1-γ8) and functions by influencing the properties of the calcium current. L-type Ca^{++} CP γ3, also known as CACNG3 or Cacng2, is a 315 amino acid multi-pass membrane protein that belongs to the CACNG family. As one of the eight γ subunits, L-type Ca^{++} CP γ3 is thought to stabilize the calcium current when the calcium channel is in a closed (inactivated) state. Defects in the gene encoding L-type Ca^{++} CP γ3 may be associated with familial infantile convulsive disorder with paroxysomal choreoathetosis, an autosomal dominant neurological disorder.

REFERENCES

1. Powers, P.A., et al. 1993. Molecular characterization of the gene encoding the γ subunit of the human skeletal muscle 1,4-dihydropyridine-sensitive Ca^{2+} channel (CACNLG), cDNA sequence, gene structure, and chromosomal location. J. Biol. Chem. 268: 9275-9279.
2. Burgess, D.L., et al. 1999. Identification of three novel Ca^{2} channel γ subunit genes reveals molecular diversification by tandem and chromosome duplication. Genome Res. 9: 1204-1213.
3. Black, J.L. and Lennon, V.A. 1999. Identification and cloning of putative human neuronal voltage-gated calcium channel γ2 and γ3 subunits: neurologic implications. Mayo Clin. Proc. 74: 357-361.
4. Burgess, D.L., et al. 2001. A cluster of three novel Ca^{2+} channel γ subunit genes on chromosome 19q13.4: evolution and expression profile of the γ subunit gene family. Genomics 71: 339-350.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606403. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Moss, F.J., et al. 2003. Human neuronal stargazin-like proteins, γ2, γ3 and γ4; an investigation of their specific localization in human brain and their influence on CaV2.1 voltage-dependent calcium channels expressed in *Xenopus* oocytes. BMC Neurosci. 4: 23.
7. Everett, K.V., et al. 2007. Linkage and association analysis of CACNG3 in childhood absence epilepsy. Eur. J. Hum. Genet. 15: 463-472.

CHROMOSOMAL LOCATION

Genetic locus: CACNG3 (human) mapping to 16p12.1; Cacng3 (mouse) mapping to 7 F3.

SOURCE

L-type Ca^{++} CP γ3 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of L-type Ca^{++} CP γ3 of human origin.

RESEARCH USE

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

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-164818 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

L-type Ca^{++} CP γ3 (C-13) is recommended for detection of L-type Ca^{++} CP γ3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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^{++} CP γ family members.

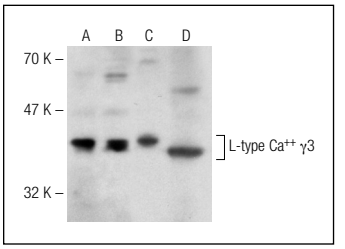
L-type Ca^{++} CP γ3 (C-13) is also recommended for detection of L-type Ca^{++} CP γ3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for L-type Ca^{++} CP γ3 siRNA (h): sc-93047, L-type Ca^{++} CP γ3 siRNA (m): sc-155914, L-type Ca^{++} CP γ3 shRNA Plasmid (h): sc-93047-SH, L-type Ca^{++} CP γ3 shRNA Plasmid (m): sc-155914-SH, L-type Ca^{++} CP γ3 shRNA (h) Lentiviral Particles: sc-93047-V and L-type Ca^{++} CP γ3 shRNA (m) Lentiviral Particles: sc-155914-V.

Molecular Weight of L-type Ca^{++} CP γ3: 36 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or KNRK whole cell lysate: sc-2214.

DATA



L-type Ca^{++} CP γ3 (C-13): sc-164818. Western blot analysis of L-type Ca^{++} CP γ3 expression in HeLa (**A**), KNRK (**B**) and Jurkat (**C**) whole cell lysates and mouse kidney tissue extract (**D**).

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.