

# L-type Ca<sup>++</sup> CP $\gamma$ 3 (A-07): sc-81889

## 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  $\alpha$ 1 subunit, a  $\beta$  subunit, a  $\gamma$  subunit and an  $\alpha$ 2/ $\delta$  subunit. The  $\gamma$  subunit is made of eight distinct proteins (designated L-type Ca<sup>++</sup> CP  $\gamma$ 1- $\gamma$ 8) and functions by influencing the properties of the calcium current. L-type Ca<sup>++</sup> CP  $\gamma$ 3, 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  $\gamma$  subunits, L-type Ca<sup>++</sup> CP  $\gamma$ 3 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<sup>++</sup> CP  $\gamma$ 3 may be associated with familial infantile convulsive disorder with paroxysmal choreoathetosis, an autosomal dominant neurological disorder.

## REFERENCES

1. 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.
2. Burgess, D.L., et al. 1999. Identification of three novel Ca<sup>2+</sup> channel  $\gamma$  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  $\gamma$ 2 and  $\gamma$ 3 subunits: neurologic implications. *Mayo Clin. Proc.* 74: 357-361.
4. Burgess, D.L., et al. 2001. A cluster of three novel Ca<sup>2+</sup> channel  $\gamma$  subunit genes on chromosome 19q13.4: evolution and expression profile of the  $\gamma$  subunit gene family. *Genomics* 71: 339-350.
5. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 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,  $\gamma$ 2,  $\gamma$ 3 and  $\gamma$ 4; 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<sup>++</sup> CP  $\gamma$ 3 (A-07) is a mouse monoclonal antibody raised against recombinant L-type Ca<sup>++</sup> CP  $\gamma$ 3 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

L-type Ca<sup>++</sup> CP  $\gamma$ 3 (A-07) is recommended for detection of L-type Ca<sup>++</sup> CP  $\gamma$ 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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<sup>++</sup> CP  $\gamma$ 3 siRNA (h): sc-93047, L-type Ca<sup>++</sup> CP  $\gamma$ 3 siRNA (m): sc-155914, L-type Ca<sup>++</sup> CP  $\gamma$ 3 shRNA Plasmid (h): sc-93047-SH, L-type Ca<sup>++</sup> CP  $\gamma$ 3 shRNA Plasmid (m): sc-155914-SH, L-type Ca<sup>++</sup> CP  $\gamma$ 3 shRNA (h) Lentiviral Particles: sc-93047-V and L-type Ca<sup>++</sup> CP  $\gamma$ 3 shRNA (m) Lentiviral Particles: sc-155914-V.

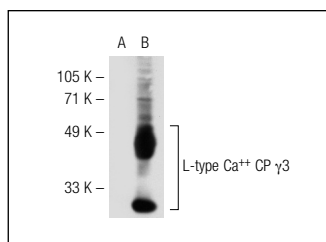
Molecular Weight of L-type Ca<sup>++</sup> CP  $\gamma$ 3: 36 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or L-type Ca<sup>++</sup> CP  $\gamma$ 3 (h): 293T Lysate: sc-115545.

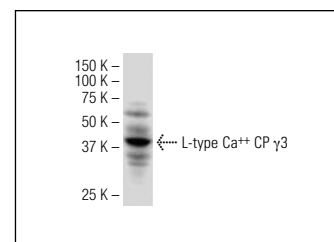
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), 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).

## DATA



L-type Ca<sup>++</sup> CP  $\gamma$ 3 (A-07): sc-81889. Western blot analysis of L-type Ca<sup>++</sup> CP  $\gamma$ 3 expression in non-transfected: sc-117752 (A) and human L-type Ca<sup>++</sup> CP  $\gamma$ 3 transfected: sc-115545 (B) 293T whole cell lysates.



L-type Ca<sup>++</sup> CP  $\gamma$ 3 (A-07): sc-81889. Western blot analysis of L-type Ca<sup>++</sup> CP  $\gamma$ 3 expression in HeLa whole cell lysate.

## 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) for detailed protocols and support products.