

# L-type Ca<sup>++</sup> CP $\gamma$ 5 (L-14): sc-107680

## 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. L-type Ca<sup>++</sup> CP  $\gamma$ 5 (calcium channel, voltage-dependent,  $\gamma$  subunit 5), also known as TARP  $\gamma$ -5 (transmembrane AMPAR regulatory protein  $\gamma$ -5) or neuronal voltage-gated calcium channel  $\gamma$ -5 subunit, is a 275 amino acid multi-pass membrane protein that belongs to the PMP-22/EMP/MP20 family and CACNG subfamily. Functioning as a type II transmembrane AMPA receptor regulatory protein (TARP), L-type Ca<sup>++</sup> CP  $\gamma$ 5 influences the rate of gating properties of AMPA-selective glutamate receptors. The gene encoding L-type Ca<sup>++</sup> CP  $\gamma$ 5 maps to human chromosome 17q24.2 and mouse chromosome 11 E1.

## REFERENCES

- 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.
- Chu, P.J., et al. 2001. Calcium channel  $\gamma$  subunits provide insights into the evolution of this gene family. *Gene* 280: 37-48.
- 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.
- Sharp, A.H., et al. 2001. Biochemical and anatomical evidence for specialized voltage-dependent calcium channel  $\gamma$  isoform expression in the epileptic and ataxic mouse, stargazer. *Neuroscience* 105: 599-617.
- Moss, F.J., et al. 2002. The novel product of a five-exon stargazin-related gene abolishes Ca(V)<sub>2</sub>.2 calcium channel expression. *EMBO J.* 21: 1514-1523.
- Dolphin, A.C. 2003.  $\beta$  subunits of voltage-gated calcium channels. *J. Bioenerg. Biomembr.* 35: 599-620.
- Black, J.L. 2003. The voltage-gated calcium channel  $\gamma$  subunits: a review of the literature. *J. Bioenerg. Biomembr.* 35: 649-660.
- Chen, R.S., et al. 2007. Calcium channel  $\gamma$  subunits: a functionally diverse protein family. *Cell Biochem. Biophys.* 47: 178-186.

## CHROMOSOMAL LOCATION

Genetic locus: CACNG5 (human) mapping to 17q24.2; Cacng5 (mouse) mapping to 11 E1.

## SOURCE

L-type Ca<sup>++</sup> CP  $\gamma$ 5 (L-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of L-type Ca<sup>++</sup> CP  $\gamma$ 5 of human origin.

## STORAGE

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

## 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-107680 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  $\gamma$ 5 (L-14) is recommended for detection of L-type Ca<sup>++</sup> CP  $\gamma$ 5 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).

L-type Ca<sup>++</sup> CP  $\gamma$ 5 (L-14) is also recommended for detection of L-type Ca<sup>++</sup> CP  $\gamma$ 5 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for L-type Ca<sup>++</sup> CP  $\gamma$ 5 siRNA (h): sc-93924, L-type Ca<sup>++</sup> CP  $\gamma$ 5 siRNA (m): sc-146619, L-type Ca<sup>++</sup> CP  $\gamma$ 5 shRNA Plasmid (h): sc-93924-SH, L-type Ca<sup>++</sup> CP  $\gamma$ 5 shRNA Plasmid (m): sc-146619-SH, L-type Ca<sup>++</sup> CP  $\gamma$ 5 shRNA (h) Lentiviral Particles: sc-93924-V and L-type Ca<sup>++</sup> CP  $\gamma$ 5 shRNA (m) Lentiviral Particles: sc-146619-V.

Molecular Weight of L-type Ca<sup>++</sup> CP  $\gamma$ 5: 31 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.

## 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.