L-type Ca^{++} CP γ-2 (C-14): sc-18285

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

Excitable cells in response to membrane depolarization are involved in a variety of Ca^{++}-dependent processes, including muscle contraction, hormone or neurotransmitter release and gene expression. Calcium channels are highly diverse, multimeric complexes composed of an α-1 subunit, an intracellular β subunit, a disulfide linked α-2/δ subunit and a transmembrane γ subunit. L-type Ca^{++} currents initiate muscle contraction, endocrine secretion and gene transcription, and are regulated through second-messenger activated protein phosphorylation pathways. L-type calcium channels may form macro-molecular signaling complexes with G protein-coupled receptors, thereby enhancing the selectivity of regulating specific targets. L-type calcium channels in the brain specifically express the γ-2 subunit along with γ-3 and -4 subunits. The γ-2 subunit (also known as stargazin) is abundant in synaptic plasma membranes where it regulates synaptic targeting of AMP receptors in granule cells.

REFERENCES

1. Perez-Reyes, E., et al. 1995. Molecular biology of calcium channels. Kidney Int. 48: 1111-1124.

2. Campbell, K.P., et al. 1998. The mouse stargazer gene encodes a neuronal Ca^{2+}-channel γ subunit. Nature Genet. 19: 340-347.

3. Randall, A.D. 1998. The molecular basis of voltage-gated Ca^{2+} channel diversity: is it time for T? J. Membr. Biol. 161: 207-213.

4. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca^{2+} channels. Annu. Rev. Cell Dev. Biol. 16: 521-555.

5. Chen, L., et al. 2000. Stargazing regulates synaptic targeting of AMPA receptors by two distinct mechanisms. Nature 408: 936-943.

6. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 601011. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

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CHROMOSOMAL LOCATION

Genetic locus: CACNG2 (human) mapping to 22q12.3, CACNG3 (human) mapping to 16p12.1; Cacng2 (mouse) mapping to 15 E1, Cacng3 (mouse) mapping to 7 F3.

SOURCE

L-type Ca^{++} CP γ-2 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of L-type Ca^{++} CP γ-2 of mouse origin.

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-18285 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

L-type Ca^{++} CP γ-2 (C-14) is recommended for detection of L-type Ca^{++} CP γ-2 and, to a lesser extent, γ-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluo-rescence (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^{++} CP γ-2 (C-14) is also recommended for detection of L-type Ca^{++} CP γ-2 and, to a lesser extent, γ-3 in additional species, including equine.

Molecular Weight of L-type Ca^{++} CP γ-2: 36 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) Immunofluo-rescence: 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 or our catalog for detailed protocols and support products.