SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP β3 (D-14): sc-109306

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 α1 subunit, a β subunit, a γ subunit and an α2δ subunit. The β subunit is encoded by four genes, designated β1-β4, all of which contribute to the diversity of calcium currents and are involved in membrane trafficking of the α1 subunit. L-type Ca^{++} CP β3, also known as CACNB3 (Calcium channel voltage-dependent subunit β 3), CACNLB3 or CAB3, is a 484 amino acid protein that contains one SH3 domain and is expressed in ovary, brain and smooth muscle. Functioning as one of the four components of the β subunit, L-type Ca^{++} CP β3 increases the peak calcium current in voltage-dependent calcium channels, thereby shifting the voltage dependencies of activation and inactivation and controlling G protein inhibition and α1 membrane targeting. Two isoforms of L-type Ca^{++} CP β3 exist due to alternative splicing events.

REFERENCES

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2. Yamada, Y., et al. 1995. The structures of the human calcium channel α1 subunit (CACNL1A2) and β subunit (CACNLB3) genes. Genomics 27: 312-319.
3. Murakami, M., et al. 1996. Gene structure of the murine calcium channel β3 subunit, cDNA and characterization of alternative splicing and transcription products. Eur. J. Biochem. 236: 138-143.
4. Murakami, M., et al. 2002. Pain perception in mice lacking the β3 subunit of voltage-activated calcium channels. J. Biol. Chem. 277: 40342-40351.
5. Colecraft, H.M., et al. 2002. Novel functional properties of Ca^{2+} channel β subunits revealed by their expression in adult rat heart cells. J. Physiol. 541: 435-452.
6. Qin, N., et al. 2002. Molecular cloning and characterization of the human voltage-gated calcium channel α2δ-4 subunit. Mol. Pharmacol. 62: 485-496.
7. Berggren, P.O., et al. 2004. Removal of Ca^{2+} channel β3 subunit enhances Ca^{2+} oscillation frequency and Insulin exocytosis. Cell 119: 273-284.
8. Chen, Y.H., et al. 2004. Structural basis of the α1-β subunit interaction of voltage-gated Ca^{2+} channels. Nature 429: 675-680.

CHROMOSOMAL LOCATION

Genetic locus: CACNB3 (human) mapping to 12q13.12; Cacnb3 (mouse) mapping to 15 F1.

SOURCE

L-type Ca^{++} CP β3 (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of L-type Ca^{++} CP β3 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-109306 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

L-type Ca^{++} CP β3 (D-14) is recommended for detection of L-type Ca^{++} CP β3 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^{++} CP β3 (D-14) is also recommended for detection of L-type Ca^{++} CP β3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for L-type Ca^{++} CP β3 siRNA (h): sc-95841, L-type Ca^{++} CP β3 siRNA (m): sc-108006, L-type Ca^{++} CP β3 shRNA Plasmid (h): sc-95841-SH, L-type Ca^{++} CP β3 shRNA Plasmid (m): sc-108006-SH, L-type Ca^{++} CP β3 shRNA (h) Lentiviral Particles: sc-95841-V and L-type Ca^{++} CP β3 shRNA (m) Lentiviral Particles: sc-108006-V.

Molecular Weight of L-type Ca^{++} CP β3: 55 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.

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.