

# L-type Ca<sup>++</sup> CP β3 (E-10): sc-398995

## 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<sup>++</sup> CP β3, also known as CACNB3 (calcium channel voltage-dependent subunit β3), 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<sup>++</sup> 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<sup>++</sup> CP β3 exist due to alternative splicing events.

## REFERENCES

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- Yamada, Y., et al. 1995. The structures of the human calcium channel α1 subunit (CACNL1A2) and β subunit (CACNLB3) genes. *Genomics* 27: 312-319.
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- Berggren, P.O., et al. 2004. Removal of Ca<sup>2+</sup> channel β3 subunit enhances Ca<sup>2+</sup> oscillation frequency and Insulin exocytosis. *Cell* 119: 273-284.
- Chen, Y.H., et al. 2004. Structural basis of the α<sub>1</sub>-β subunit interaction of voltage-gated Ca<sup>2+</sup> 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<sup>++</sup> CP β3 (E-10) is a mouse monoclonal antibody raised against amino acids 359-427 mapping within an internal region of L-type Ca<sup>++</sup> CP β3 of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200 μg 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 β3 (7D1) is recommended for detection of L-type Ca<sup>++</sup> CP β3 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), flow cytometry (1 μg per 1 x 10<sup>6</sup> cells) 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 β3 siRNA (h): sc-95841, L-type Ca<sup>++</sup> CP β3 siRNA (m): sc-108006, L-type Ca<sup>++</sup> CP β3 shRNA Plasmid (h): sc-95841-SH, L-type Ca<sup>++</sup> CP β3 shRNA Plasmid (m): sc-108006-SH, L-type Ca<sup>++</sup> CP β3 shRNA (h) Lentiviral Particles: sc-95841-V and L-type Ca<sup>++</sup> CP β3 shRNA (m) Lentiviral Particles: sc-108006-V.

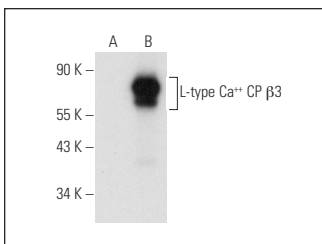
Molecular Weight of L-type Ca<sup>++</sup> CP β3: 55 kDa.

Positive Controls: L-type Ca<sup>++</sup> CP β3 (m): 293T Lysate: sc-178862.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



L-type Ca<sup>++</sup> CP β3 (E-10): sc-398995. Western blot analysis of L-type Ca<sup>++</sup> CP β3 expression in non-transfected: sc-117752 (A) and mouse L-type Ca<sup>++</sup> CP β3 transfected: sc-178862 (B) 293T whole cell lysates.

## 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](http://www.scbt.com) for detailed protocols and support products.